Terence Cardinal Cooke Rezoning

Environmental Assessment Statement

CEQR No. 19DCP070M

ULURP Nos. 190158ZM, 190156ZR

Prepared for:
Catholic Health Care System d/b/a ArchCare

Prepared by:
AKRF, Inc.

April 5, 2019

City Environmental Quality Review
ENVIRONMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM

Please fill out and submit to the appropriate agency (see instructions)

Part I: GENERAL INFORMATION

PROJECT NAME Terence Cardinal Cooke Health Center Rezoning

1. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency) 19DCP070M	BSA REFERENCE NUMBER (if applicable)
ULURP REFERENCE NUMBER (if applicable) 190158ZM, 190156ZR	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA)

2a. *Lead Agency Information*			**2b. *Applicant Information***		
NAME OF LEAD AGENCY New York City Department of City Planning			NAME OF APPLICANT Catholic Health Care System d/b/a ArchCare		
NAME OF LEAD AGENCY CONTACT PERSON Olga Abinader			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON Raffaela Dunne		
ADDRESS 120 Broadway, 31st Floor			ADDRESS 675 Third Avenue, 25th Floor		
CITY Manhattan	STATE NY	ZIP 10271	CITY Manhattan	STATE NY	ZIP 10017
TELEPHONE 212-720-3423	EMAIL oabinad@planning.nyc.gov		TELEPHONE 212-906-9090	EMAIL Raffaeladunne@washsquare.com	

3. *Action Classification and Type*

SEQRA Classification

☐ UNLISTED ☒ TYPE I: Specify Category (see 6 NYCRR 617.4 and NYC Executive Order 91 of 1977, as amended): 617.4(b)(9): any Unlisted action (unless the action is designed for the preservation of the facility or site) occurring wholly or partially within, or substantially contiguous to, any historic building, structure, facility, site or district or prehistoric site that is listed on the National Register of Historic Places, or that has been proposed by the New York State Board on Historic Preservation for a recommendation to the State Historic Preservation Officer for nomination for inclusion in the National Register, or that is listed on the State Register of Historic Places

Action Type (refer to Chapter 2, "Establishing the Analysis Framework" for guidance)

☒ LOCALIZED ACTION, SITE SPECIFIC ☐ LOCALIZED ACTION, SMALL AREA ☐ GENERIC ACTION

4. *Project Description*

The Applicant, ArchCare, is seeking a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a related zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area in Appendix F of the Zoning Resolution (the "Proposed Actions") (see Figure 1). The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), an existing health/rehabilitation center located in Manhattan, Community District 11, through a consolidation of existing functions as well as new construction (the "Proposed Project") within the Development Site/Rezoning Area (Block 1611, p/o Lot 1 and Lot 15). In conjunction with this new construction, the Applicant also seeks to renovate the existing Flower Hill Hospital (FHH) Building (Block 1611, remaining portion of Lot 1), which is part of TCC and located directly adjacent to the Development Site along Fifth Avenue. Therefore, the Project Area includes the entirety of Block 1611, Lots 1 and 15. While ArchCare's goal is to modernize the TCC facilities, because the zoning map amendment would allow for either a predominantly community facility or residential development, the Environmental Assessment Statement (EAS) considers two illustrative With Action scenarios.

Scenario 1 (the Applicant's preferred scenario) would occur in two phases. In Phase 1, the FHH Building would be rehabilitated to accommodate TCC's consolidated Skilled Nursing Facility and Specialty Hospital (the "Joint Long-Term Care and Hospital Facility"). The Development Site would be programmed with a 10-story, 87,653-gross-square-foot (gsf) nonprofit senior supportive housing development (a nonprofit institution with sleeping accommodations or "NPISA") containing approximately 150 supportive housing (SH) units located on the corner of East 105th Street and Madison Avenue. In Phase 2, the remainder of the Development Site would be programmed with TCC's Program of All-Inclusive Care for the Elderly ("PACE Center"), in a building located mid-block, containing 54,606 gsf of medical office space (two stories), combined with a 32-story residential tower containing 340,930 gsf of residential space (379 dwelling units [DUs], including 114 affordable DUs), on the corner of East 106th Street and Madison Avenue.

Scenario 2 would occur in a single phase. The FHH Building would be converted to residential space, accommodating 215 market-rate DUs. The Development Site would be programmed with one large mixed-use development, containing 121,471 gsf of outpatient medical office space, a 34-story 340,930-gsf residential tower containing 379 DUs (including 114 affordable DUs), along East 106th Street and 20,788 gsf of ground-floor retail space along Madison Avenue.

Project Location

BOROUGH Manhattan | COMMUNITY DISTRICT(S) 11 | STREET ADDRESS 1240 Fifth Avenue, 12 East 106th Street, 1560 Madison Avenue, and 1578 Madison Avenue

TAX BLOCK(S) AND LOT(S) Block 1611; Lots 1 and 15 | ZIP CODE 10029

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Bounded to the north by East 106th Street, to the east by Madison Avenue, to the south by East 105th Street, and to the west by Fifth Avenue.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R7-2, R9, R7-2/C1-5, Special Park Improvement District | ZONING SECTIONAL MAP NUMBER 6b

5. *Required Actions or Approvals* (check all that apply)

City Planning Commission: ☒ YES ☐ NO ☒ UNIFORM LAND USE REVIEW PROCEDURE (ULURP)

- ☐ CITY MAP AMENDMENT
- ☐ ZONING CERTIFICATION
- ☐ CONCESSION
- ☒ ZONING MAP AMENDMENT
- ☐ ZONING AUTHORIZATION
- ☐ UDAAP
- ☒ ZONING TEXT AMENDMENT
- ☐ ACQUISITION—REAL PROPERTY
- ☐ REVOCABLE CONSENT
- ☐ SITE SELECTION—PUBLIC FACILITY
- ☐ DISPOSITION—REAL PROPERTY
- ☐ FRANCHISE
- ☐ HOUSING PLAN & PROJECT
- ☐ OTHER, explain:
- ☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION ZR Section: Appendix F (MIH) Text Amendment

Board of Standards and Appeals: ☐ YES ☒ NO

- ☐ VARIANCE (use)
- ☐ VARIANCE (bulk)
- ☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

Department of Environmental Protection: ☐ YES ☒ NO If "yes," specify:

Other City Approvals Subject to CEQR (check all that apply)

- ☐ LEGISLATION
- ☐ RULEMAKING
- ☐ CONSTRUCTION OF PUBLIC FACILITIES
- ☐ 384(b)(4) APPROVAL
- ☐ OTHER, explain:
- ☒ FUNDING OF CONSTRUCTION, specify: HPD SARA
- ☐ POLICY OR PLAN, specify:
- ☐ FUNDING OF PROGRAMS, specify:
- ☐ PERMITS, specify:

Other City Approvals Not Subject to CEQR (check all that apply)

- ☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC)
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL
- ☐ OTHER, explain:

State or Federal Actions/Approvals/Funding: ☒ YES ☐ NO If "yes," specify: TBD

6. *Site Description:* *The directly affected area consists of the project site and the area subject to any change in regulatory controls. Except where otherwise indicated, provide the following information with regard to the directly affected area.*

Graphics: *The following graphics must be attached and each box must be checked off before the EAS is complete. Each map must clearly depict the boundaries of the directly affected area or areas and indicate a 400-foot radius drawn from the outer boundaries of the project site. Maps may not exceed 11 x 17 inches in size and, for paper filings, must be folded to 8.5 x 11 inches.*

- ☒ SITE LOCATION MAP
- ☒ ZONING MAP
- ☒ SANBORN OR OTHER LAND USE MAP
- ☒ TAX MAP
- ☐ FOR LARGE AREAS OR MULTIPLE SITES, A GIS SHAPE FILE THAT DEFINES THE PROJECT SITE(S)
- ☒ PHOTOGRAPHS OF THE PROJECT SITE TAKEN WITHIN 6 MONTHS OF EAS SUBMISSION AND KEYED TO THE SITE LOCATION MAP

Physical Setting (both developed and undeveloped areas)

Total directly affected area (sq. ft.): 84,768

Roads, buildings, and other paved surfaces (sq. ft.): 84,768

Waterbody area (sq. ft.) and type:

Other, describe (sq. ft.):

7. *Physical Dimensions and Scale of Project* (if the project affects multiple sites, provide the total development facilitated by the action)

SIZE OF PROJECT TO BE DEVELOPED (gross square feet): 708,465 (Increment of 209,466 gsf)

NUMBER OF BUILDINGS: 3

GROSS FLOOR AREA OF EACH BUILDING (sq. ft.):
FHH: 193,476
NPISA: 87,653
Mixed Use Residential/Medical Office: 395,536

HEIGHT OF EACH BUILDING (ft.):
FHH: 162.5'
NPISA: 85'
Mixed Use Residential/Medical Office: 356'

NUMBER OF STORIES OF EACH BUILDING:
FHH: 12
NPISA: 8
Mixed Use Residential/Medical Office: 32

Does the proposed project involve changes in zoning on one or more sites? ☒ YES ☐ NO

If "yes," specify: The total square feet owned or controlled by the applicant: 54,494

The total square feet not owned or controlled by the applicant: 0

Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? ☒ YES ☐ NO

If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known):

AREA OF TEMPORARY DISTURBANCE: 54,494 sq. ft. (width x length)

VOLUME OF DISTURBANCE: 770,000 cubic ft. (width x length x depth)

AREA OF PERMANENT DISTURBANCE: 54,494 sq. ft. (width x length)

8. *Analysis Year* CEQR Technical Manual Chapter 2

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2025

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 46

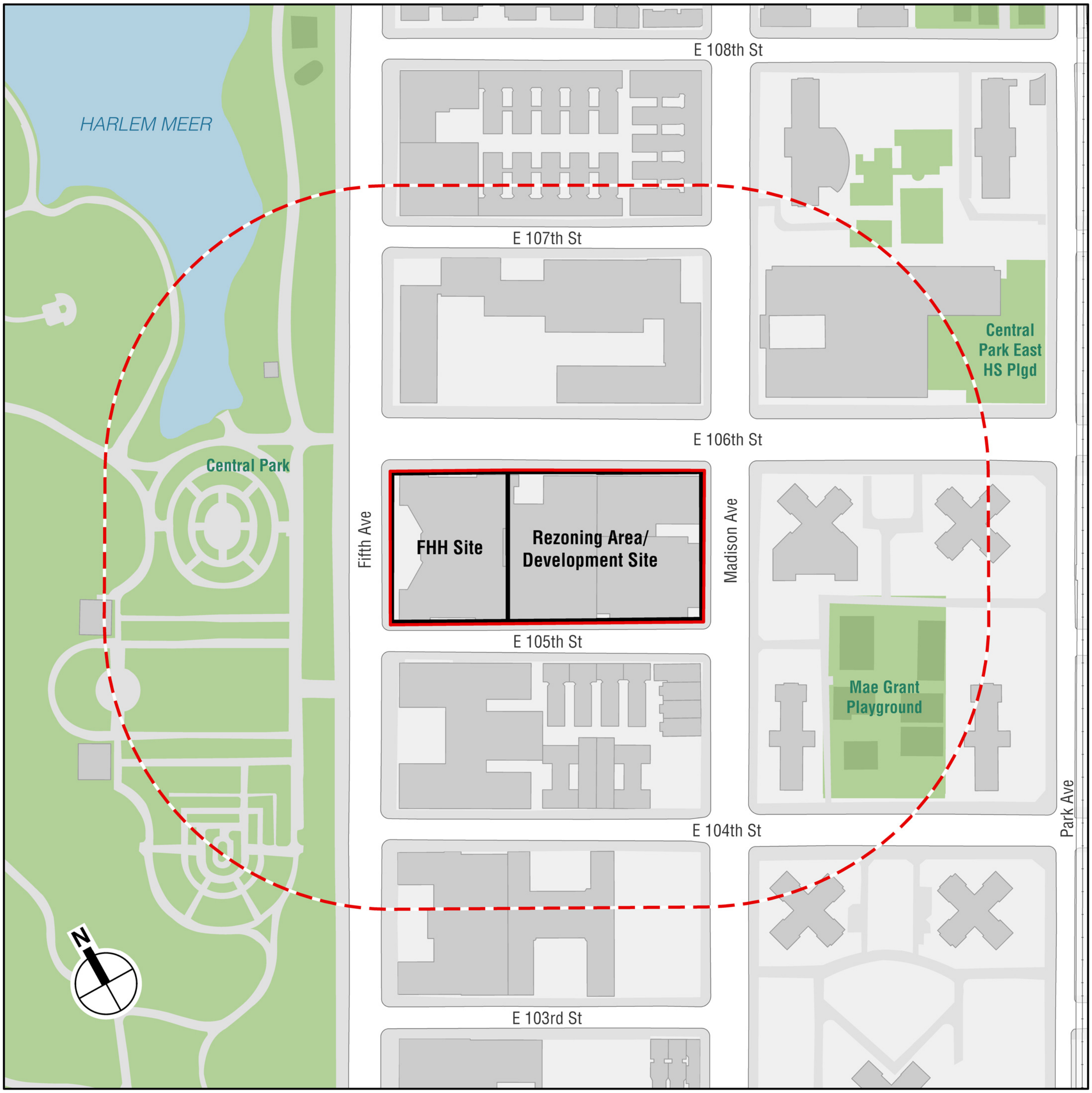
WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? ☐ YES ☒ NO | IF MULTIPLE PHASES, HOW MANY? 2

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: The Annex (12 East 106th Street), the Cohen Building (1578 Madison Avenue), and the parking garage (1560 Madison Avenue) would be demolished and replaced with new buildings. The FHH Building (1240 Fifth Avenue) would be renovated to contain the consolidated TCC Skilled Nursing Facility and Specialty Hospital. The first phase of construction would include the renovation of the FHH Building with the Skilled Nursing and Specialty Hospital, the demolition of the parking garage followed by site clearance, and construction of the nonprofit senior housing development. The second phase of construction would include the demolition of the Annex and Cohen Building followed by site clearance and construction of the mixed-use residential development and the PACE Center.

9. *Predominant Land Use in the Vicinity of the Project* (check all that apply)

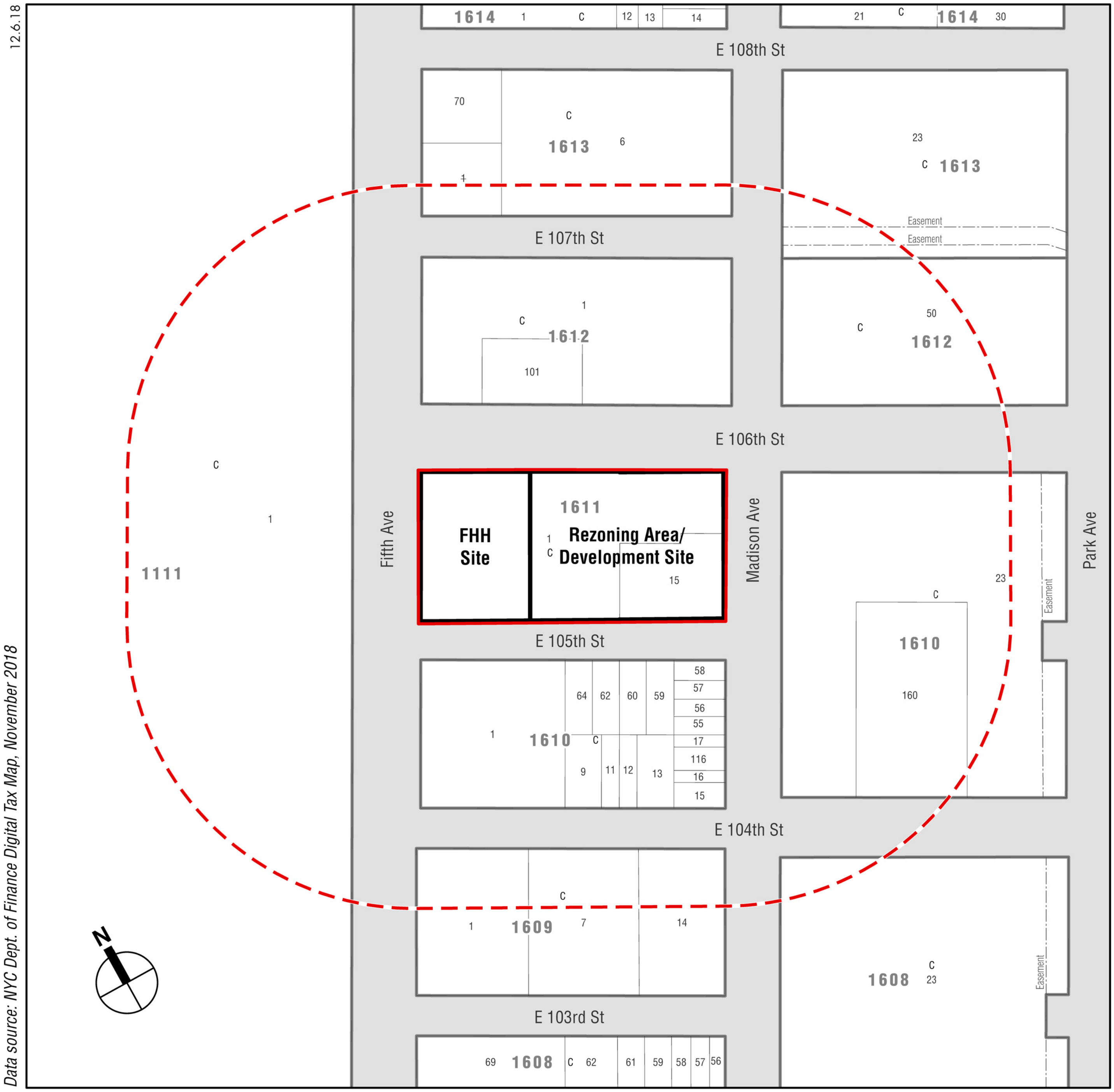
☒ RESIDENTIAL ☐ MANUFACTURING ☐ COMMERCIAL ☒ PARK/FOREST/OPEN SPACE ☒ OTHER, specify: Community Facilities

12.6.18



Project Location
Figure 1

TERENCE CARDINAL COOKE REZONING



Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

1 Tax Lot Boundary

1611 Tax Block Boundary

Easement

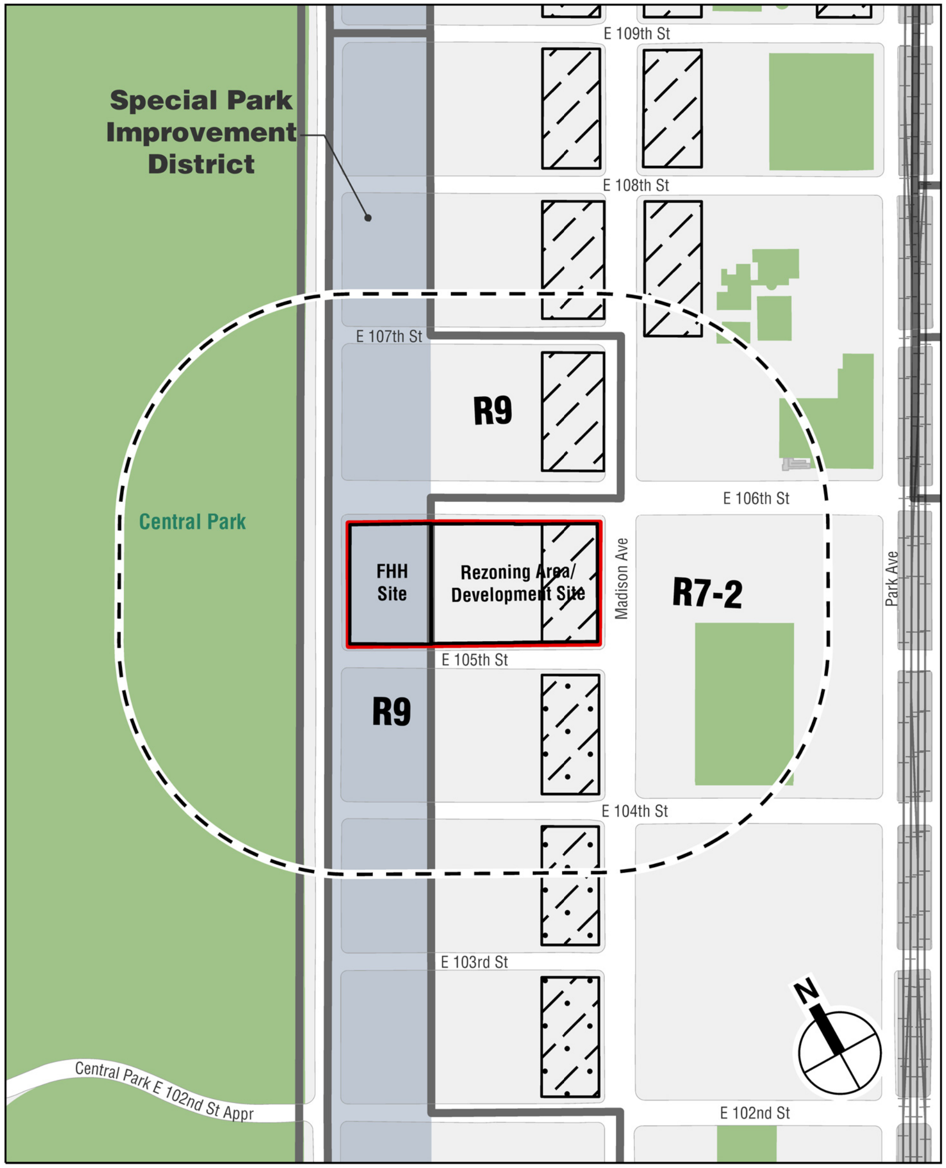
TERENCE CARDINAL COOKE REZONING

Tax Map

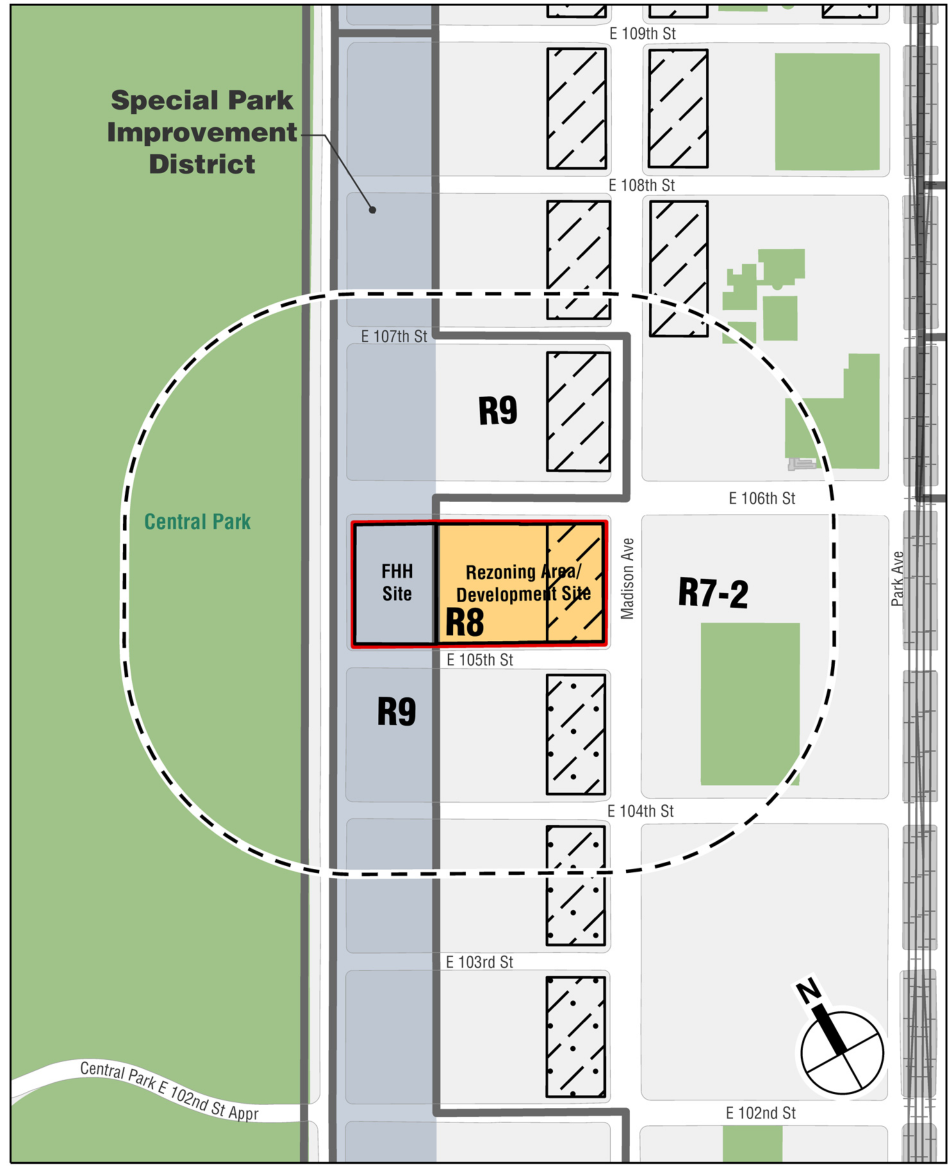
Figure 2

12.6.18

Data source: New York City Department of City Planning, November 2018



Existing Zoning



Proposed Zoning

Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area Boundary (400-foot perimeter)

Rezoning Area

Zoning Districts

Special Park Improvement District

C1-5 Commercial Overlay District

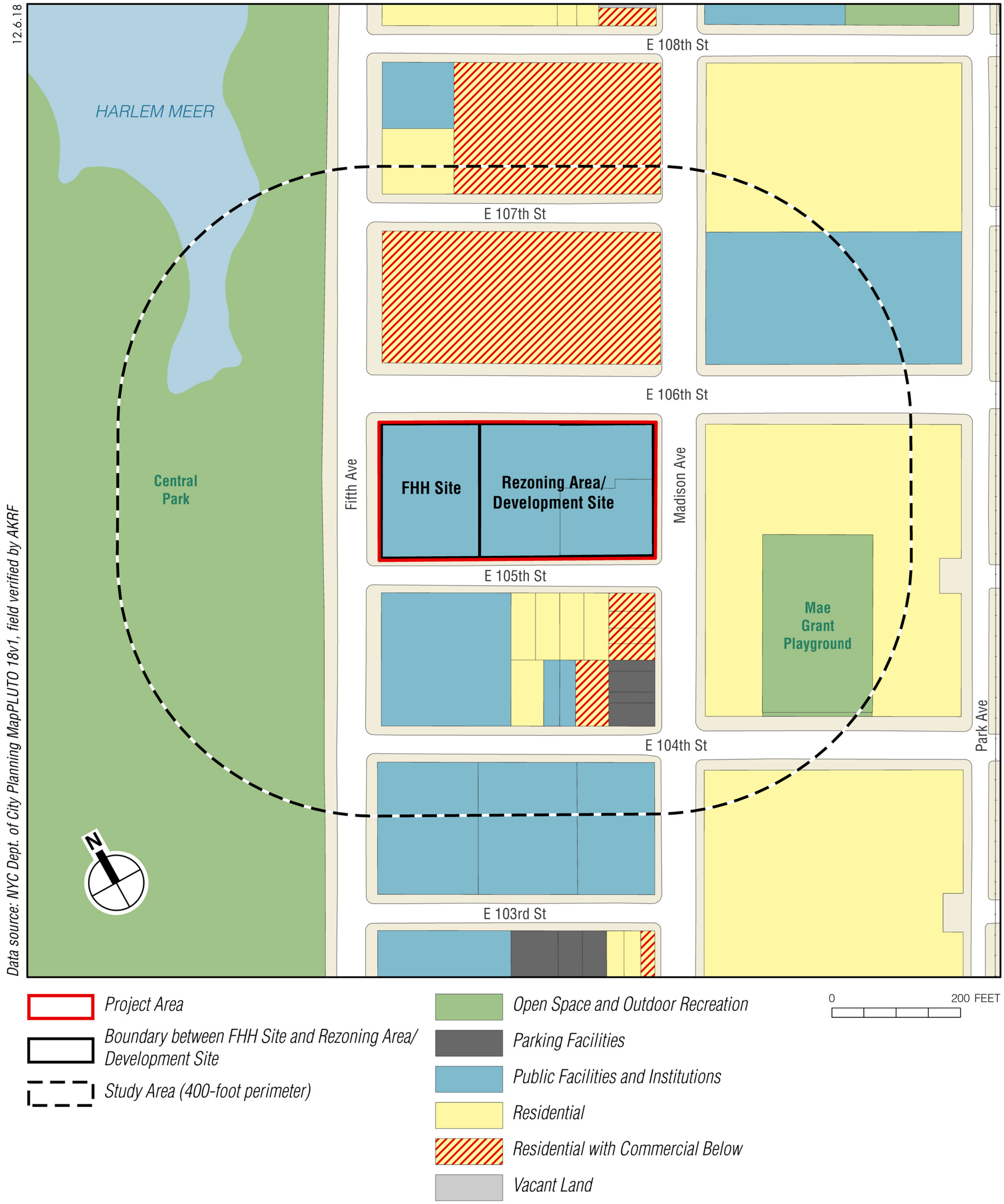
C2-5 Commercial Overlay District

0 200 FEET

TERENCE CARDINAL COOKE REZONING

Existing and Proposed Zoning

Figure 3

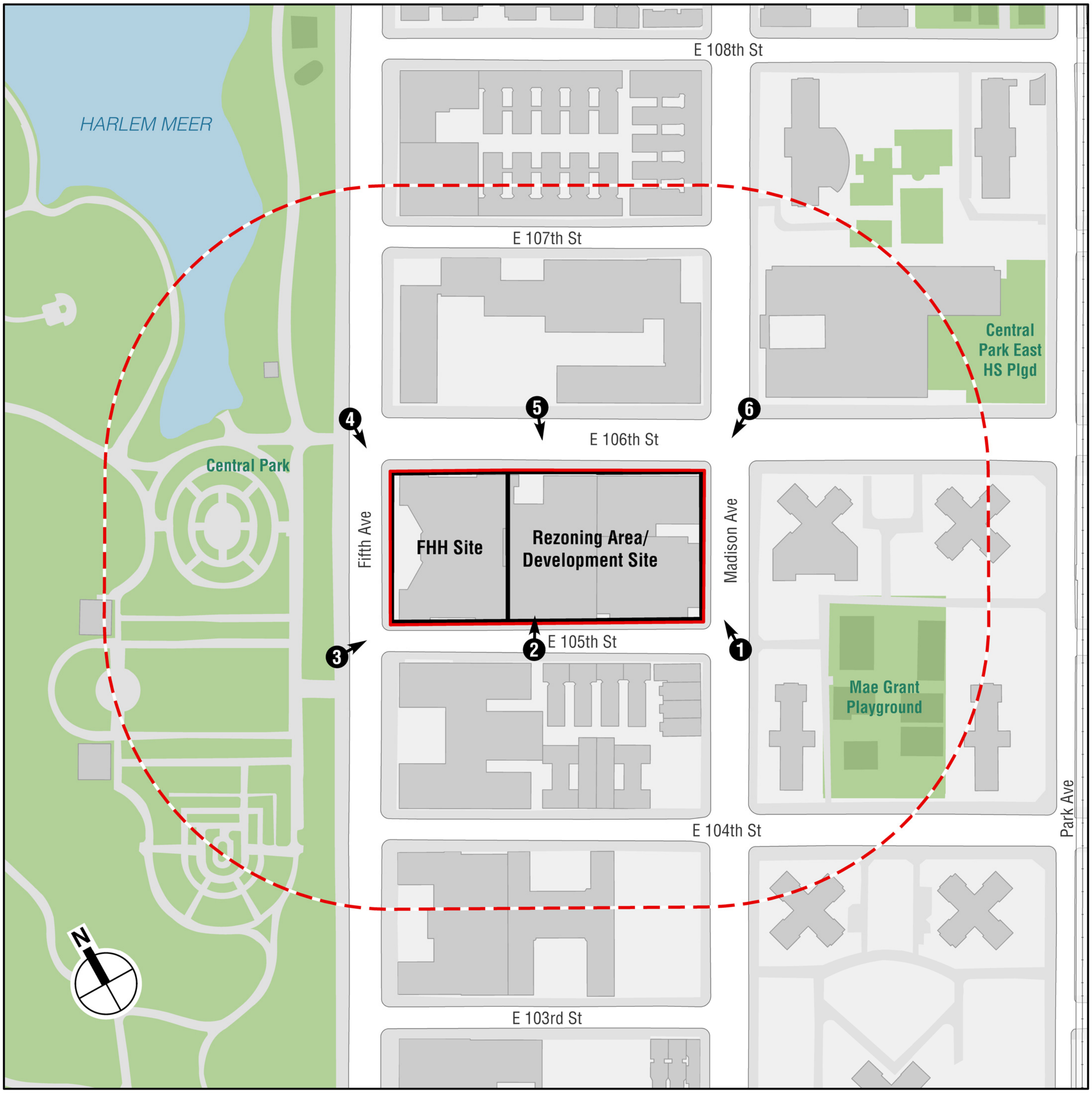


TERENCE CARDINAL COOKE REZONING

Existing Land Use

Figure 4

12.6.18



Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

Photograph View Direction and Reference Number

0 200 FEET

TERENCE CARDINAL COOKE REZONING

Photograph Key

Figure 5

1

2

Photographs
Figure 6a

3

4

Photographs
Figure 6b

5

6

Photographs
Figure 6c

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
Describe type of residential structures	N/A	Renovated Flower Hill Hospital Building (193,476 gsf, 215 DU) and new residential tower (191,590 gsf, 213 DU)	New residential tower (340,930 gsf, 379 DU)	
No. of dwelling units	N/A	428	379	-49
No. of low- to moderate-income units	N/A	64 421-a units	114 (421-a/MIH) units plus 150 NPISA senior units	200 (50 421-a/MIH units, 150 NPISA senior units)
Gross floor area (sq. ft.)	N/A	385,056	340,930	-44,126
Commercial	☐ Yes ☑ No	☑ Yes ☐ No	☐ Yes ☑ No	
If "yes," specify the following:				
Describe type (retail, office, other)	N/A	Neighborhood Retail	N/A	
Gross floor area (sq. ft.)	N/A	20,788	0	-20,788
Manufacturing/Industrial	N/A	N/A	N/A	
If "yes," specify the following:				
Type of Use	N/A		N/A	
Gross floor area (sq. ft.)	N/A		N/A	
Open storage area (sq. ft.)	N/A		N/A	
If any enclosed activities, specify:	N/A		N/A	
Community Facility	☑ Yes ☐ No	☐ Yes ☑ No	☑ Yes ☐ No	
If "yes," specify the following:				

Scenario 1

Part II RWCDS Analysis Framework Table
EAS FULL FORM PAGE 4b

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Type of Use	TCC Facilities	Outpatient Medical Office	Consolidated TCC operations in the Flower Hill Hospital Building (193,476 gsf); non-profit senior housing development/NPISA (150 units of supportive housing and ancillary support services) (87,653 gsf); and medical office space (PACE Center) (54,606 gsf)	
Gross floor area (sq. ft.)	488,783	70,655	335,735	265,080
Vacant Land	☑ Yes ☐ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes", describe:	Unused Parking Garage (85,182 gsf)	N/A	☑ No N/A	
Publicly Accessible Open Space	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes	
If "yes," specify type (mapped City, State, or Federal Parkland, wetland-mapped or otherwise known, other):	N/A	N/A	N/A	
Other Land Uses	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," describe:	N/A	N/A	N/A	
Parking				
Garages	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. of public spaces	N/A			
No. of accessory spaces	N/A	75	106	31
Operating hours	N/A			
Attended or non-attended	N/A			
Lots	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," specify the following:				
No. of public spaces	N/A	N/A	N/A	
No. of accessory spaces	N/A	N/A	N/A	
Operating hours	N/A	N/A	N/A	
Other (includes street parking)	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," describe:	N/A	N/A	N/A	
Population				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Residents	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify number:	N/A	1,031	913 residents; 150 seniors	-118 residents; +150 seniors
Briefly explain how the number of residents was calculated:	2.41 persons per household in Manhattan Community District 11.			
Businesses	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. and type	TCC	5 Neighborhood Retail establishments; 3 Outpatient Medical establishments	Consolidated TCC Facilities	Consolidated TCC Facilities; -5 retail establishments; -3 Outpatient medical establishments
No. and type of workers by business	720 TCC Staff	17 Residential Building Employees; 52 Retail Employees; 157 Outpatient Medical Office Employees	15 Residential Building Employees; 415 Skilled Nursing Facility Staff; 12 Senior Housing Development Staff; 121 PACE Center (Medical Office) Staff	-2 Residential Building Employees; -52 Retail Employees; +415 Skilled Nursing Staff; +12 Senior Housing Development Staff; -36 Medical Office Staff
No. and type of non-residents who are not workers	615 Patients	0	350 Patients	350 Patients
Briefly explain how the number of businesses was calculated:	Residential building employees calculated using 1 employee per 25 units. Retail employees calculated using 1 employee per 400 square foot. Skilled Nursing staff estimates provided by applicant. One floor of senior housing assumed to be for ancillary uses (approximately 12,250 sf) with 1 employee per 1,000 sf. Medical office space employees calculated using 1 employee per 450 sf. Patient numbers provided by the applicant.			
Other (students, visitors, concert-goers, *etc*.)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	
If any, specify type and number:		N/A		
Briefly explain how the number was calculated:	See transportation analysis for visitor counts			

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Zoning				
Zoning classification	R7-2, R7-2/C1-5, and R9 (OSR=21.5)	R7-2, R7-2/C1-5, and R9 (OSR=21.5)	R8, R8/C1-5, and R9 (OSR=10.7)	
Maximum amount of floor area that can be developed	656,957 zsf @ 6.5 FAR (R7-2) and 10 FAR (R9)	656,957 zsf @ 6.5 FAR (R7-2) and 10 FAR (R9)	656,957 zsf @ 6.5 FAR (R8) and 10 FAR (R9)	
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R9, R9/C1-5	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R9, R9/C1-5	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R8, R8/C1-5, R9, R9/C1-5	

Attach any additional information that may be needed to describe the project.

If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
Describe type of residential structures	N/A	Renovated Flower Hill Hospital Building (193,476 gsf, 215 DU) and new residential tower (191,580 gsf, 213 DU)	Renovated Flower Hill Hospital Building (193,476 gsf, 215 DU) and new residential tower (340,930 gsf, 379 DU)	
No. of dwelling units	N/A	428	594	166
No. of low- to moderate-income units	N/A	64 (421-a)	114 (MIH)/421-a	50
Gross floor area (sq. ft.)	N/A	385,056	534,406	149,350
Commercial	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
Describe type (retail, office, other)	N/A	Neighborhood Retail	Neighborhood Retail	
Gross floor area (sq. ft.)	N/A	20,788	20,788	0
Manufacturing/Industrial	N/A	N/A		
If "yes," specify the following:				
Type of Use	N/A			
Gross floor area (sq. ft.)	N/A			
Open storage area (sq. ft.)	N/A			
If any enclosed activities, specify:	N/A			
Community Facility	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
Type of Use	TCC Facilities	Outpatient Medical Office	Outpatient Medical Office	
Gross floor area (sq. ft.)	488,783	70,655	121,471	50,816
Vacant Land	☑ Yes ☐ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes", describe:	Unused Parking Garage (85,182 gsf)	N/A	☑ No N/A	
Publicly Accessible Open Space	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes	
If "yes," specify type (mapped City, State, or Federal Parkland, wetland-mapped or otherwise known, other):	N/A	N/A	N/A	
Other Land Uses	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," describe:	N/A	N/A	N/A	

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Parking				
Garages	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. of public spaces	N/A			
No. of accessory spaces	N/A	75	106	31
Operating hours	N/A			
Attended or non-attended	N/A			
Lots	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," specify the following:				
No. of public spaces	N/A	N/A	N/A	
No. of accessory spaces	N/A	N/A	N/A	
Operating hours	N/A	N/A	N/A	
Other (includes street parking)	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," describe:	N/A	N/A	N/A	
Population				
Residents	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify number:	N/A	1,031	1,432	401
Briefly explain how the number of residents was calculated:	2.41 persons per household in Manhattan Community District 11.			
Businesses	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. and type	TCC	5 Neighborhood Retail establishments; 3 Outpatient Medical establishments	5 Neighborhood Retail establishments; 5 Outpatient Medical establishments	0 retail establishments; 2 Outpatient Medical establishments
No. and type of workers by business	720 TCC Staff	17 Residential Building Employees; 52 Retail Employees; 157 Outpatient Medical Office Employees	24 Residential Building Employees; 52 Retail Employees; 270 Outpatient Medical Office Employees	7 Residential Building Employees; 0 Retail Employees; 113 Medical Office Staff
No. and type of non-residents who are not workers	615 Patients	NA	NA	
Briefly explain how the number of businesses was calculated:	Residential building employees calculated using 1 employee per 25 units. Retail employees calculated using 1 employee per 400 square foot. Medical office space employees calculated using 1 employee per 450 sf.			
Other (students, visitors, concert-goers, *etc*.)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
If any, specify type and number:		N/A		
Briefly explain how the number was calculated:	See transportation analysis for visitor counts			
Zoning				
Zoning classification	R7-2, R7-2/C1-5, and R9 (OSR=21.5)	R7-2, R7-2/C1-5, and R9 (OSR=21.5)	R8, R8/C1-5, and R9 (OSR=10.7)	
Maximum amount of floor area that can be developed	656,957 zsf @ 6.5 FAR (R7-2) and 10 FAR (R9)	656,957 zsf @ 6.5 FAR (R7-2) and 10 FAR (R9)	656,957 zsf @ 6.5 FAR (R8) and 10 FAR (R9)	
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R9, R9/C1-5	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R9, R9/C1-5	Institutional, residential, commercial. R7-2, R7-2/C1-5, R7-2/C2-5, R8, R8/C1-5, R9, R9/C1-5	

Attach any additional information that may be needed to describe the project.

If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.

Part II: TECHNICAL ANALYSIS

INSTRUCTIONS: For each of the analysis categories listed in this section, assess the proposed project's impacts based on the thresholds and criteria presented in the CEQR Technical Manual. Check each box that applies.

- If the proposed project can be demonstrated not to meet or exceed the threshold, check the "no" box.
- If the proposed project will meet or exceed the threshold, or if this cannot be determined, check the "yes" box.
- For each "yes" response, provide additional analyses (and, if needed, attach supporting information) based on guidance in the CEQR Technical Manual to determine whether the potential for significant impacts exists. Please note that a "yes" answer does not mean that an EIS must be prepared—it means that more information may be required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant to provide additional information to support the Full EAS Form. For example, if a question is answered "no," an agency may request a short explanation for this response.

	YES	NO
1. *LAND USE, ZONING, AND PUBLIC POLICY*: CEQR Technical Manual Chapter 4		
(a) Would the proposed project result in a change in land use different from surrounding land uses?	☐	☒
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	☒	☐
(c) Is there the potential to affect an applicable public policy?	☐	☒
(d) If "yes," to (a), (b), and/or (c), complete a preliminary assessment and attach.		
(e) Is the project a large, publicly sponsored project?	☐	☒
o If "yes," complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries?	☐	☒
o If "yes," complete the Consistency Assessment Form.		
2. *SOCIOECONOMIC CONDITIONS*: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
o Generate a net increase of more than 200 residential units *or* 200,000 square feet of commercial space?	☐	☒
▪ If "yes," answer *both* questions 2(b)(ii) and 2(b)(iv) below.		
o Directly displace 500 or more residents?	☐	☒
▪ If "yes," answer questions 2(b)(i), 2(b)(ii), and 2(b)(iv) below.		
o Directly displace more than 100 employees?	☐	☒
▪ If "yes," answer questions under 2(b)(iii) and 2(b)(iv) below.		
o Affect conditions in a specific industry?	☐	☒
▪ If "yes," answer question 2(b)(v) below.		
(b) If "yes" to any of the above, attach supporting information to answer the relevant questions below. If "no" was checked for each category above, the remaining questions in this technical area do not need to be answered.		
i. Direct Residential Displacement		
o If more than 500 residents would be displaced, would these residents represent more than 5% of the primary study area population?	☐	☐
o If "yes," is the average income of the directly displaced population markedly lower than the average income of the rest of the study area population?	☐	☐
ii. Indirect Residential Displacement		
o Would expected average incomes of the new population exceed the average incomes of study area populations?	☐	☐
o If "yes:"		
▪ Would the population of the primary study area increase by more than 10 percent?	☐	☐
▪ Would the population of the primary study area increase by more than 5 percent in an area where there is the potential to accelerate trends toward increasing rents?	☐	☐
o If "yes" to either of the preceding questions, would more than 5 percent of all housing units be renter-occupied and unprotected?	☐	☐
iii. Direct Business Displacement		
o Do any of the displaced businesses provide goods or services that otherwise would not be found within the trade area, either under existing conditions or in the future with the proposed project?	☐	☐

	YES	NO
o Is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it?	☐	☐
iv. Indirect Business Displacement		
o Would the project potentially introduce trends that make it difficult for businesses to remain in the area?	☐	☐
o Would the project capture retail sales in a particular category of goods to the extent that the market for such goods would become saturated, potentially resulting in vacancies and disinvestment on neighborhood commercial streets?	☐	☐
v. Effects on Industry		
o Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?	☐	☐
o Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?	☐	☐
3. *COMMUNITY FACILITIES*: CEQR Technical Manual Chapter 6		
(a) Direct Effects		
o Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, health care facilities, day care centers, police stations, or fire stations?	☒	☐
(b) Indirect Effects		
i. Child Care Centers		
o Would the project result in 20 or more eligible children under age 6, based on the number of low or low/moderate income residential units? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," would the project result in a collective utilization rate of the group child care/Head Start centers in the study area that is greater than 100 percent?	☐	☐
o If "yes," would the project increase the collective utilization rate by 5 percent or more from the No-Action scenario?	☐	☐
ii. Libraries		
o Would the project result in a 5 percent or more increase in the ratio of residential units to library branches? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," would the project increase the study area population by 5 percent or more from the No-Action levels?	☐	☐
o If "yes," would the additional population impair the delivery of library services in the study area?	☐	☐
iii. Public Schools		
o Would the project result in 50 or more elementary or middle school students, or 150 or more high school students based on number of residential units? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," would the project result in a collective utilization rate of the elementary and/or intermediate schools in the study area that is equal to or greater than 100 percent?	☐	☐
o If "yes," would the project increase this collective utilization rate by 5 percent or more from the No-Action scenario?	☐	☐
iv. Health Care Facilities		
o Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
o If "yes," would the project affect the operation of health care facilities in the area?	☐	☐
v. Fire and Police Protection		
o Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
o If "yes," would the project affect the operation of fire or police protection in the area?	☐	☐
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the project change or eliminate existing open space?	☐	☒
(b) Is the project located within an under-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
(c) If "yes," would the project generate more than 50 additional residents or 125 additional employees?	☐	☐
(d) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☒	☐
(e) If "yes," would the project generate more than 350 additional residents or 750 additional employees?	☒	☐
(f) If the project is located in an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	☐	☐
(g) If "yes" to questions (c), (e), or (f) above, attach supporting information to answer the following:		
o If in an under-served area, would the project result in a decrease in the open space ratio by more than 1 percent?	☐	☐

	YES	NO
o If in an area that is not under-served, would the project result in a decrease in the open space ratio by more than 5 percent?	☐	☒
o If "yes," are there qualitative considerations, such as the quality of open space, that need to be considered? Please specify:	☐	☐
5. *SHADOWS*: CEQR Technical Manual Chapter 8		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?	☒	☐
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	☒	☐
(c) If "yes" to either of the above questions, attach supporting information explaining whether the project's shadow would reach any sunlight-sensitive resource at any time of the year.		
6. *HISTORIC AND CULTURAL RESOURCES*: CEQR Technical Manual Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	☒	☐
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	☐	☒
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources.		
7. *URBAN DESIGN AND VISUAL RESOURCES*: CEQR Technical Manual Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	☒	☐
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	☐	☒
(c) If "yes" to either of the above, please provide the information requested in Chapter 10.		
8. *NATURAL RESOURCES*: CEQR Technical Manual Chapter 11		
(a) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11?	☐	☒
o If "yes," list the resources and attach supporting information on whether the project would affect any of these resources.		
(b) Is any part of the directly affected area within the Jamaica Bay Watershed?	☐	☒
o If "yes," complete the Jamaica Bay Watershed Form and submit according to its instructions.		
9. *HAZARDOUS MATERIALS*: CEQR Technical Manual Chapter 12		
(a) Would the proposed project allow commercial or residential uses in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?	☐	☒
(b) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?	☐	☒
(c) Would the project require soil disturbance in a manufacturing area or any development on or near a manufacturing area or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	☒	☐
(d) Would the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?	☒	☐
(e) Would the project result in development on or near a site that has or had underground and/or aboveground storage tanks (*e.g.*, gas stations, oil storage facilities, heating oil storage)?	☒	☐
(f) Would the project result in renovation of interior existing space on a site with the potential for compromised air quality; vapor intrusion from either on-site or off-site sources; or the presence of asbestos, PCBs, mercury or lead-based paint?	☒	☐
(g) Would the project result in development on or near a site with potential hazardous materials issues such as government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, coal gasification or gas storage sites, railroad tracks or rights-of-way, or municipal incinerators?	☐	☒
(h) Has a Phase I Environmental Site Assessment been performed for the site?	☒	☐
o If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: The Site has several closed and in-service diesel and fuel oil tanks and was listed in the NY Spills database (#0403835) with documented soil/groundwater contamination from leaking fuel oil tanks. Additionally, historic chemical handling associated with former laboratories and/or photo processing/development of x-rays from former hospital uses may have affected the Site subsurface., as might nearby dry cleaning, automotive facilities and printers.	☒	☐
(i) Based on the Phase I Assessment, is a Phase II Investigation needed?	☒	☐

	YES	NO
10. *WATER AND SEWER INFRASTRUCTURE*: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	☐	☒
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	☐	☒
(c) If the proposed project located in a separately sewered area, would it result in the same or greater development than that listed in Table 13-1 in Chapter 13?	☐	☒
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	☐	☒
(e) If the project is located within the Jamaica Bay Watershed or in certain specific drainage areas, including Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	☐	☒
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	☐	☒
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or contribute contaminated stormwater to a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
(i) If "yes" to any of the above, conduct the appropriate preliminary analyses and attach supporting documentation.		
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): 51,957		
o Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	☐	☒
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	☐	☒
o If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	☐	☐
12. *ENERGY*: CEQR Technical Manual Chapter 15		
(a) Using energy modeling or Table 15-1 in Chapter 15, the project's projected energy use is estimated to be (annual BTUs): 250,700		
(b) Would the proposed project affect the transmission or generation of energy?	☐	☒
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☒	☐
(b) If "yes," conduct the appropriate screening analyses, attach back up data as needed for each stage, and answer the following questions:		
o Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	☒	☐
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.*	☐	☒
o Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	☐	☒
If "yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway/rail trips per station or line?	☐	☐
o Would the proposed project result in more than 200 pedestrian trips per project peak hour?	☒	☐
If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	☒	☐
14. *AIR QUALITY*: CEQR Technical Manual Chapter 17		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☐	☐
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☒	☐
o If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed)	☐	☐
(c) Does the proposed project involve multiple buildings on the project site?	☒	☐
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	☐	☒
(e) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	☐	☒
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation.		

	YES	NO
15. *GREENHOUSE GAS EMISSIONS*: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	☐	☒
(b) Would the proposed project fundamentally change the City's solid waste management system?	☐	☒
(c) Would the proposed project result in the development of 350,000 square feet or more?	☐	☒
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18?	☐	☐
o If "yes," would the project result in inconsistencies with the City's GHG reduction goal? (See Local Law 22 of 2008; § 24-803 of the Administrative Code of the City of New York). Please attach supporting documentation.	☐	☐
16. *NOISE*: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	☒	☐
(b) Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?	☒	☐
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	☐	☒
(d) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	☐	☒
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation.		
17. *PUBLIC HEALTH*: CEQR Technical Manual Chapter 20		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☐	☒
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach a preliminary analysis, if necessary.		
18. *NEIGHBORHOOD CHARACTER*: CEQR Technical Manual Chapter 21		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; Transportation; Noise?	☒	☐
(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary.		
19. *CONSTRUCTION*: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
o Construction activities lasting longer than two years?	☒	☐
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	☐	☒
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, *etc.*)?	☒	☐
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	☒	☐
o The operation of several pieces of diesel equipment in a single location at peak construction?	☒	☐
o Closure of a community facility or disruption in its services?	☐	☒
o Activities within 400 feet of a historic or cultural resource?	☒	☐
o Disturbance of a site containing or adjacent to a site containing natural resources?	☐	☒
o Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	☒	☐
(b) If any boxes are checked "yes," explain why a preliminary construction assessment is or is not warranted based on the guidance in Chapter 22, "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination.		

20. ***APPLICANT'S CERTIFICATION***		
I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of the pertinent books and records and/or after inquiry of persons who have personal knowledge of such information or who have examined pertinent books and records. Still under oath, I further swear or affirm that I make this statement in my capacity as the applicant or representative of the entity that seeks the permits, approvals, funding, or other governmental action(s) described in this EAS.		
APPLICANT/REPRESENTATIVE NAME Patrick Blanchfield, AKRF, Inc.	SIGNATURE	DATE April 5, 2019

PLEASE NOTE THAT APPLICANTS MAY BE REQUIRED TO SUBSTANTIATE RESPONSES IN THIS FORM AT THE DISCRETION OF THE LEAD AGENCY SO THAT IT MAY SUPPORT ITS DETERMINATION OF SIGNIFICANCE.

Part III: DETERMINATION OF SIGNIFICANCE (To Be Completed by Lead Agency)

INSTRUCTIONS: In completing Part III, the lead agency should consult 6 NYCRR 617.7 and 43 RCNY § 6-06 (Executive Order 91 or 1977, as amended), which contain the State and City criteria for determining significance.

1. For each of the impact categories listed below, consider whether the project may have a significant adverse effect on the environment, taking into account its (a) location; (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude.

IMPACT CATEGORY	Potentially Significant Adverse Impact: YES	Potentially Significant Adverse Impact: NO
Land Use, Zoning, and Public Policy	☐	☒
Socioeconomic Conditions	☐	☒
Community Facilities and Services	☐	☒
Open Space	☐	☒
Shadows	☐	☒
Historic and Cultural Resources	☐	☒
Urban Design/Visual Resources	☐	☒
Natural Resources	☐	☒
Hazardous Materials	☐	☒
Water and Sewer Infrastructure	☐	☒
Solid Waste and Sanitation Services	☐	☒
Energy	☐	☒
Transportation	☐	☒
Air Quality	☐	☒
Greenhouse Gas Emissions	☐	☒
Noise	☐	☒
Public Health	☐	☒
Neighborhood Character	☐	☒
Construction	☐	☒

	YES	NO
2. Are there any aspects of the project relevant to the determination of whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials? If there are such impacts, attach an explanation stating whether, as a result of them, the project may have a significant impact on the environment.	☐	☒

3. Check determination to be issued by the lead agency:

☐ **Positive Declaration**: If the lead agency has determined that the project may have a significant impact on the environment, and if a Conditional Negative Declaration is not appropriate, then the lead agency issues a *Positive Declaration* and prepares a draft Scope of Work for the Environmental Impact Statement (EIS).

☐ **Conditional Negative Declaration:** A *Conditional Negative Declaration* (CND) may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. The CND is prepared as a separate document and is subject to the requirements of 6 NYCRR Part 617.

☒ **Negative Declaration:** If the lead agency has determined that the project would not result in potentially significant adverse environmental impacts, then the lead agency issues a *Negative Declaration*. The *Negative Declaration* may be prepared as a separate document (see template) or using the embedded Negative Declaration on the next page.

4. ***LEAD AGENCY'S CERTIFICATION***

TITLE	LEAD AGENCY
Acting Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME: Olga Abinader	DATE: 4/5/2019
SIGNATURE: Olga Abinader	

NEGATIVE DECLARATION

Statement of No Significant Effect

Pursuant to Executive Order 91 of 1977, as amended, and the Rules of Procedure for City Environmental Quality Review, found at Title 62, Chapter 5 of the Rules of the City of New York and 6 NYCRR, Part 617, State Environmental Quality Review, the Department of City Planning, acting on behalf of the City Planning Commission assumed the role of lead agency for the environmental review of the proposed project. Based on a review of information about the project contained in this environmental assessment statement and any attachments hereto, which are incorporated by reference herein, the lead agency has determined that the proposed project would not have a significant adverse impact on the environment.

Reasons Supporting this Determination

The above determination is based on information contained in this EAS, which finds the proposed actions sought before the City Planning Commission would have no significant effect on the quality of the environment. Reasons supporting this determination are noted below.

Hazardous Materials, Air Quality, and Noise

An (E) designation (E-531) for hazardous materials, air quality and noise has been incorporated into the proposed actions. Refer to "Determination of Significance Appendix: (E) Designation" for a list of the sites affected by the proposed (E) designation and applicable (E) designation requirements. With these measures in place, the proposed actions would not result in significant adverse impacts to hazardous materials, air quality or noise.

Shadows

This EAS conducted a detailed Shadows analysis which found that incremental shadows would be cast on four publicly accessible sunlight-sensitive open space resources and one private open space resource associated with a NYCHA residential campus (i.e., Carver Houses, an eligible historic resource). The shadows cast on these sunlight-sensitive resources as a result of the proposed actions would not be significant enough in size or duration to effect public utilization of the open spaces or the growth of vegetation. As such, the proposed actions would not affect the vitality or usage of the sunlight-sensitive resources identified in the study area, and significant adverse impacts from shadows would not result from the proposed actions.

Historic and Cultural Resources

This application is classified as Type I under SEQRA regulations, due to the project area's proximity to historic resources. An assessment of historic resources was conducted and found that the proposed actions would not result in any types of visual or contextual impacts to the known historic resources within the study area, as all of the new buildings that could be developed under the proposed actions would be of height and bulk consistent with those within the surrounding area, nor would the proposed actions introduce any incompatible visual, audible, or atmospheric elements to the settings of known or eligible historic resources located in the area.

Activities associated with the construction of the proposed project could have potential significant adverse impacts on the Flower Hill Hospital Building, an eligible historic resource located within the project area. The implementation of a Construction Protection Plan in compliance with the Department of Building's Technical Policy and Procedure Notice (TPPN) #10/88 would avoid this potential impact. To ensure compliance with TPPN #10/88, the applicant will enter into a restrictive declaration that will specify all necessary project components related to the environment (PCREs) such as TPPN #10/88 is implemented by the applicant.

Transportation

A detailed transportation analysis was included in the EAS for traffic, pedestrians, and parking. The traffic analysis identified the need for a 3 second signal timing change at the intersection of Madison Avenue and East 106th Street to avoid a significant adverse impact at that location. The applicant shall make a request to DOT upon completion of the proposed project and coordinate with DOT at that time to implement the signal timing change. Therefore, with the incorporation of this PCRE into the above referenced restrictive declaration, no significant adverse traffic impacts are projected to occur as a result of the proposed actions.

The pedestrian analyses found that no significant adverse pedestrian impacts are projected to occur at any pedestrian element as a result of the proposed action. The parking analysis found that, while some drivers traveling to the project area would potentially have to find on-street parking or travel a greater distance to find available off-street public parking, the shortfall would not be considered a significant adverse parking impact.

Construction

The EAS conducted a detailed analysis of construction air quality and construction noise that incorporated a number of best management practices as part of the analyses. The restrictive declaration that will be imposed upon the applicant will specify these practices as PCREs. In addition, the restrictive declaration will require the appointment of an independent environmental monitor to ensure that these and other construction-related PCREs are implemented during the development of the applicant's proposed project. With the incorporation of these measures, the proposed actions would not result in significant adverse impacts related to construction activities.

TITLE	LEAD AGENCY
Deputy Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME Olga Abinader	DATE 4/5/2019
SIGNATURE Olga Abinader	

TITLE	
Chair, City Planning Commission	
NAME Marisa Lago	DATE 4/8/2019
SIGNATURE	

Project Name: Terence Cardinal Cooke Rezoning
CEQR #: 19DCP070M
SEQRA Classification: Type I

Determination of Significance Appendix: (E) Designation (E-531)

Hazardous Materials

To ensure that there would be no significant adverse hazardous materials impacts associated with the proposed project, an E designation (E-531) will be placed on the project site as follows:

Block 1611, Lots 1 and 15:

Task 1 - Sampling Protocol

The applicant submits to OER, for review and approval, a Phase 1A of the site along with a soil and groundwater testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2 - Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER. If remediation is indicated from the test results, a proposed remediation plan must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation that the work has been satisfactorily completed. An OER-approved construction-related health and safety plan would be implemented during evacuation and construction and activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

Project Name: Terence Cardinal Cooke Rezoning
CEQR #: 19DCP070M
SEQRA Classification: Type I

Air Quality

To ensure that there would be no significant adverse hazardous materials impacts associated with the proposed project, an E designation (E-531) will be placed on the project site as follows:

Block 1611, p/o Lot 1 (FHH Building):

Any new fossil fuel fired heating and hot water systems on the portion of Block 1611, Lot 1 within 150 feet of Fifth Avenue, must utilize only natural gas, be fitted with low NOx (30 ppm) burners with the maximum capacity of 10.04 MMBtu/hr, and ensure that fossil fuel-fired heating and heating and hot water equipment exhaust stack(s) are located at least 181 feet above grade, and located no greater than 66 feet away from the lot line facing Fifth Avenue, to avoid any potential significant air quality impacts.

Noise

To ensure that there would be no significant adverse hazardous materials impacts associated with the proposed project, an E designation (E-531) will be placed on the project site as follows:

Block 1611, p/o Lots 1 and 15:

To ensure an acceptable interior noise environment, future development at Block 1611, Lot 15 and the portion of Lot 1 beyond 150 feet east of Fifth Avenue (e.g., the area that is being rezoned under the Proposed Actions) must provide a closed-window condition with a minimum attenuation as shown in Table J-7 to ensure an interior L10 noise level not greater than 45 dBA or lower for residential and community facility uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

Attachment A: Project Description

A. INTRODUCTION

The Applicant, ArchCare, is seeking a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a related zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area in Appendix F of the Zoning Resolution (ZR) (the "Proposed Actions"). The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), an existing skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area") in Manhattan, Community District 11.

The Proposed Actions would facilitate the consolidation and modernization of TCC facilities at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Proposed Actions would allow for the construction of a nonprofit senior supportive housing development (the "Senior Building"), a new center for TCC's Program of All-Inclusive Care for the Elderly ("PACE Center"), and a new residential tower on the Development Site, which would facilitate the Applicant's modernization of TCC (see **Figure A-1**). The Development Site would be redeveloped with a new PACE Center containing 54,606 gross square feet (gsf) of medical office space, the Senior Building containing 87,653 gsf (approximately 150 supportive housing [SH] units) of nonprofit institution with sleeping accommodations ("NPISA") use, and a 340,930-gsf residential tower containing 379 dwelling units (DUs), including 114 affordable DUs (collectively, the "Proposed Project"). The Project Area, Rezoning Area/Development Site, and FHH Site are shown in Figure 1.

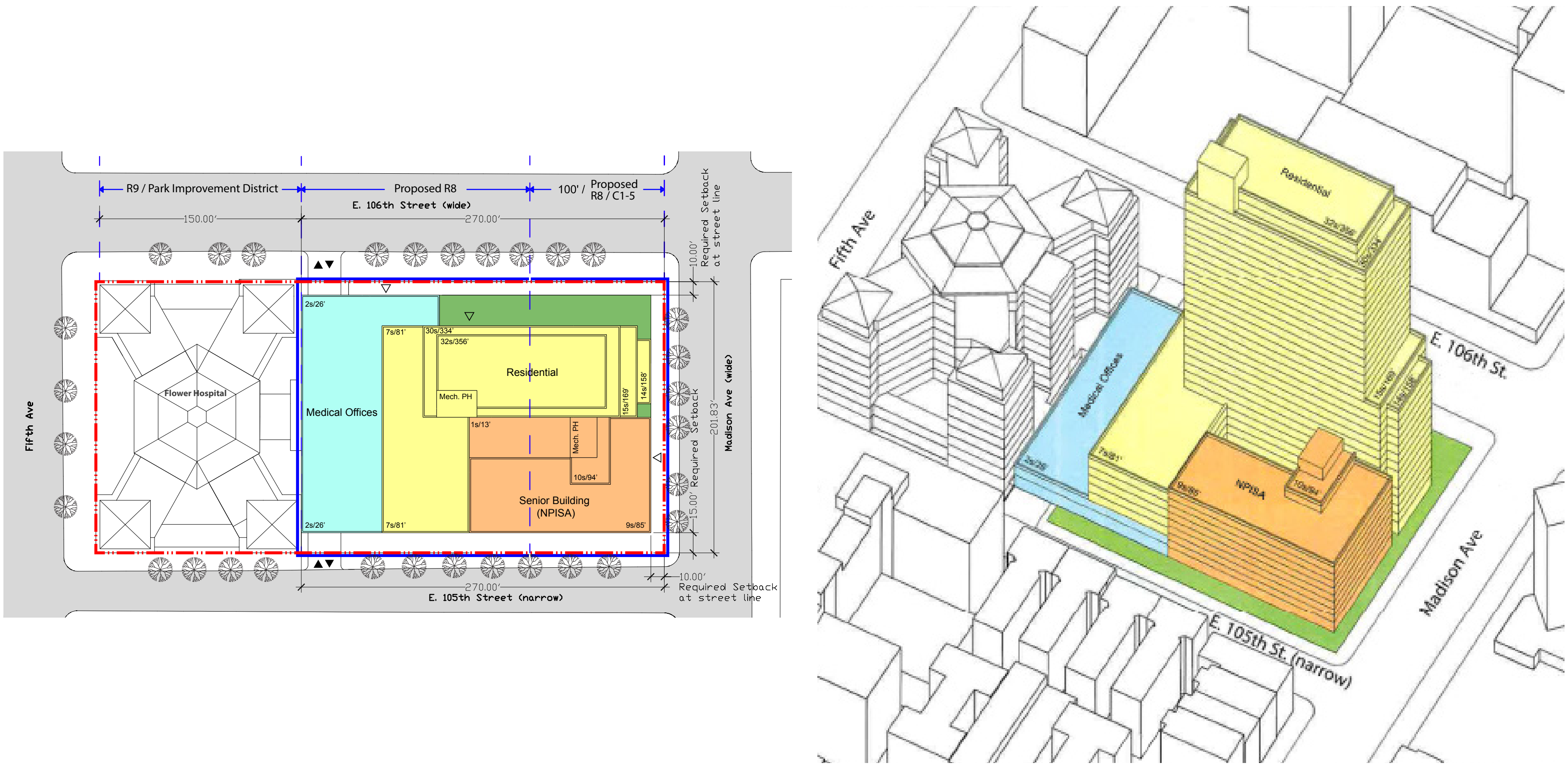
B. PROJECT DESCRIPTION

ACTIONS NECESSARY TO FACILITATE THE PROPOSED PROJECT

The Proposed Actions include the following discretionary land use approvals described below.

ZONING MAP AMENDMENT

The Proposed Actions include a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts. The Development Site is located within an R7-2 district. A C1-5 commercial overlay is mapped along Madison Avenue to a depth of 100 feet. The existing R7-2 district allows residential development to a floor area ratio (FAR) of 3.44 and community facility development to an FAR of 6.5. The C1-5 overlay allows local retail uses to an FAR of 2. The proposed R8 district allows residential development to an FAR of 6.02 and community facility development to an FAR of 6.5. The allowable commercial uses and density under the C1-5 commercial overlay would remain unchanged when mapped within an R8 district. The adjacent FHH Site, which would not be rezoned, is located within an R9 district and within the Special Park Improvement (PI) District.



Source: Michael Kwartler and Associates

Scenario 1 Site Plan & Axonometric View Looking North

Figure A-1

ZONING TEXT AMENDMENT

The Proposed Actions include a zoning text amendment to Appendix F of the New York City ZR to designate the Rezoning Area as an MIH Area.

DESCRIPTION OF THE PROJECT AREA

The Project Area is composed of the entirety of Block 1611, Lots 1 and 15 (see Figure 1), and contains various TCC facilities as well as a parking garage as described in the sections below. TCC's 559-bed skilled nursing facility (the "Skilled Nursing Facility") provides services such as short-term rehabilitation for patients transitioning out of the hospital after serious illnesses, injuries, or surgeries; long-term residential care; and specialized treatment for neurodegenerative disorders, HIV/AIDS, end-stage renal disease, and Alzheimer's disease. TCC's 50-bed specialty hospital (the "Specialty Hospital") provides comprehensive medical care to people (primarily young adults) with profound developmental disabilities and other complex medical conditions. The Skilled Nursing Facility is licensed by the U.S. Centers for Medicare & Medicaid Services and the New York State Department of Health. The Specialty Hospital is licensed by the New York State Office for People with Developmental Disabilities.

REZONING AREA/DEVELOPMENT SITE

The Rezoning Area/Development Site occupies p/o Lot 1 and Lot 15 on Block 1611 and includes the Annex, the Cohen Building, and a parking garage. The Annex (Block 1611, p/o Lot 1) which is located in the midblock, contains approximately 192,080 gsf of floor area, which includes 78 skilled nursing facility beds, dialysis facilities, occupational and physical therapy offices, a chapel, and the Specialty Hospital. The Cohen Building (Block 1611, p/o Lot 1), which is located at the corner of Madison Avenue and East 106th Street, contains approximately 108,862 gsf of floor area, which includes 134 skilled nursing facility beds and the Specialty Hospital. The parking garage (Block 1611, Lot 15), is located at the corner of Madison Avenue and East 105th Street, and contains approximately 85,182 gsf of floor area.

FHH BUILDING/FHH SITE

The western portion of the Project Area includes the FHH Building located along Fifth Avenue (Block 1611, p/o Lot 1). The FHH Building was constructed in 1921 and contains approximately 193,476 gsf of floor area, which includes 347 skilled nursing facility beds and kitchen and laundry facilities.

DESCRIPTION OF THE PROPOSED PROJECT

The Applicant seeks to rehabilitate the FHH Building to accommodate TCC's Skilled Nursing Facility and Specialty Hospital (together, the "Joint Long-Term Care and Hospital Facility"). The Development Site would be programmed with a 10-story, 87,653-gsf Senior Building containing approximately 150 SH units, on the corner of East 105th Street and Madison Avenue. The remainder of the Development Site would be programmed with TCC's PACE Center, in a two-story building located mid-block, containing 54,606 gsf of medical office space. The PACE Center would be combined with a 32-story residential tower, rising above the two-story base, which would contain 340,930 gsf of residential space (379 DUs, including 114 affordable DUs), located on the corner of East 106th Street and Madison Avenue (see **Figure A-1**).

C. PURPOSE AND NEED

The existing TCC buildings are antiquated and do not meet current health care needs. The Skilled Nursing Facility and Specialty Hospital, with various TCC functions and facilities distributed throughout three buildings, are in need of significant upgrade and modernization. Further, federal and state health policies increasingly provide incentives for lower-cost home- and community-based health care and discourage long-term inpatient care where it is unnecessary, but the current campus does not include space for a lower acuity care alternative. After extensive consideration, it was determined that the only financially viable option for modernization of the Skilled Nursing Facility and Specialty Hospital was to consolidate them as the Joint Long-Term Care and Hospital Facility in a renovated FHH Building. The development of a residential tower with market-rate DUs would allow for the Applicant's investment in TCC, including renovations to the FHH Building and construction of the Senior Building and PACE Center.

The Proposed Actions would facilitate the consolidation and modernization of the TCC by allowing the development of a residential tower of sufficient size to allow for the Applicant's investment in TCC. Under existing zoning, the amount of residential floor area that could be constructed on the Development Site is limited due to the open space requirements of height factor zoning in R7-2 zoning districts. It was determined that a new residential building would be limited to 186,000 zsf under R7-2 height factor zoning; above that floor area, the amount of open space required under the applicable open space ratio (OSR) would exceed the amount of open space available on the lot. Under the proposed R8 zoning, a new residential building of up to 331,000 zsf could be developed while satisfying open space requirements because the applicable OSR is substantially lower in R8 districts. The Proposed Actions would not increase the overall floor area that could be developed in the Project Area because the maximum FAR (6.5 FAR for community facility uses) remains the same in R7-2 and R8 zoning districts.

D. FRAMEWORK FOR ANALYSIS

This document has been prepared in accordance with the guidance of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*. The Proposed Project is expected to be completed and fully operational by 2025, which is the build year for environmental analysis purposes. For each technical area, the analysis includes a description of existing conditions and an assessment of conditions in the Future with the Proposed Actions (the "With Action" condition) and the Future without the Proposed Actions (the "No Action" condition). Because the Proposed Actions are necessary for TCC to continue operations at its current location, the No Action condition assumes that TCC discontinues its operations.

The Proposed Actions would only apply to the Development Site and would not affect the zoning regulations for the FHH Building. New construction facilitated by the Proposed Actions would only occur on the Development Site. It is expected that the FHH Building would remain in place under both the No Action and With Action conditions. In particular, the FHH Building, which was constructed circa 1922, is similar in size and height to what could be developed on the FHH Site under current zoning regulations (the Special PI District imposes a height limit of 210 feet).

The Applicant's objective is to modernize its facilities. However, for purposes of a conservative analysis, the Environmental Assessment Statement (EAS) analyzes the Applicant's Proposed Project (With Action Scenario 1) as well as a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use (With Action Scenario 2). As the proposed zoning map amendment would allow for community facility or residential development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential and community facility space. The EAS considers both With Action scenarios for most areas of technical assessment; however, the Open Space and Transportation analyses only consider With Action Scenario 2, as this is the more conservative scenario for analysis purposes. Both With Action scenarios are described below under "Future with the Proposed Actions."

Under both With Action scenarios, 30 percent of the DUs in a new residential building would be affordable under MIH and one of the Affordable New York Housing Program (421-a) affordability options. The area affected by the Proposed Actions does not contain any projected or potential development other than TCC associated development. It is assumed that DUs (market-rate and affordable) would have an average size of 900 gsf in all scenarios. Senior SH units classified as NPISA units would have an average size of 325 gsf (applicable to With Action Scenario 1 only).

EXISTING CONDITIONS

The analysis framework begins with an assessment of existing conditions on the Development Site and surrounding neighborhood because these can be most directly measured and observed. The assessment of existing conditions does not represent the condition against which a proposed project is measured, but generally serves as a starting point for the projection of With Action and No Action conditions and the analysis of project impacts.

As noted in the description above, the Project Area consists of three buildings that are part of the TCC—the FHH Building, Annex Building, and Cohen Building (Block 1611, Lot 1)—and the parking garage (Block 1611, Lot 15).

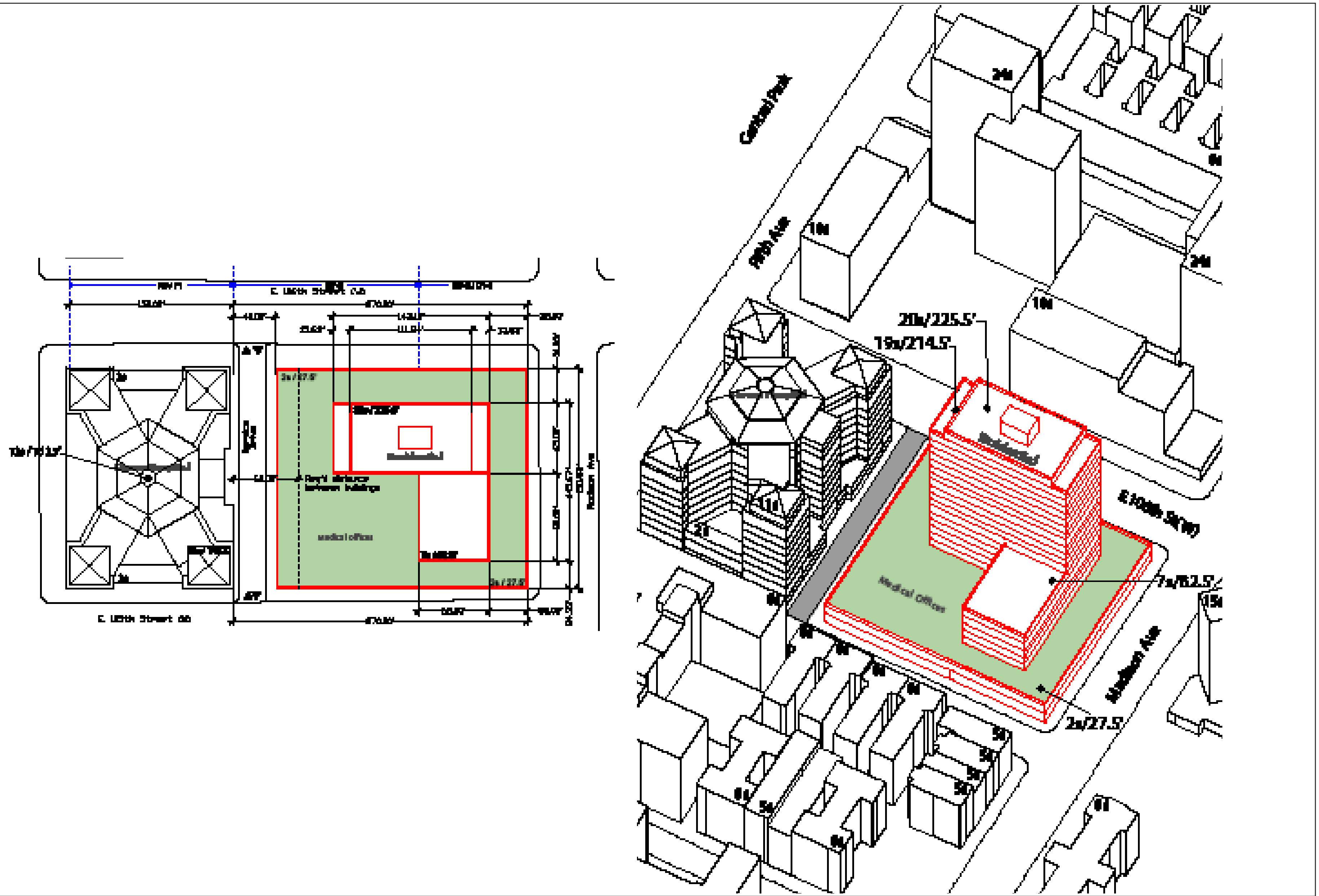
FUTURE WITHOUT THE PROPOSED ACTIONS

Absent the Proposed Actions, it is assumed that the Applicant will discontinue operations at the TCC campus and sell the FHH and Development Sites (see **Figure A-2**). It is assumed that the FHH Building will remain and will be adaptively reused for residential use, accommodating 215 DUs. The Development Site will be programmed with an L-shaped 20-story, 225.5 foot-tall mixed-use building with frontage along East 106th Street and Madison Avenue. It is assumed that approximately 30 percent of the 213 total DUs (64 DUs) will be affordable through the Affordable New York Program, and that 20,788 gsf of retail space would be provided along Madison Avenue. Given the prevalence of medical institutions in the area, the No Action condition is expected to include some medical office space in the midblock. For conservative analysis purposes, the No Action condition assumes approximately 70,655 gsf of medical office space will be developed on the Development Site.

FUTURE WITH THE PROPOSED ACTIONS

WITH ACTION SCENARIO 1

Under With Action Scenario 1 (the Applicant's Proposed Project, or the preferred scenario), the Applicant would redevelop the Project Area with new medical facilities, the Senior Building (NPISA), and residential space and modernize and consolidate TCC's functions within the existing FHH Building. Construction would occur in two phases. In Phase 1, the FHH Building would be rehabilitated to accommodate the Joint Long-Term Care and Hospital Facility. The existing garage would then be demolished, and the Development Site would be developed with a 10-story, 94 foot-tall, 87,653-gsf Senior Building containing approximately 150 SH units, on the corner of East 105th Street and Madison Avenue. In Phase 2, the Annex and Cohen Building would be demolished so that the remainder of the Development Site would be developed with the PACE Center, in a two-story



Source: Michael Kwartler and Associates

No Action Site Plan & Axonometric View Looking North

TERENCE CARDINAL COOKE REZONING

Figure A-2

building located midblock, containing 54,606 gsf of medical office space. The PACE Center would be combined with a 32-story, 356 foot-tall residential tower, rising above the two-story base and containing 340,930 gsf of residential space (379 DUs, including 114 affordable DUs), on the corner of East 106th Street and Madison Avenue (see **Figure A-1**). The massing shown in **Figure A-1** represents the reasonable worst case development scenario because it maximizes residential floor area, which is limited due to the open space requirements of height factor zoning, while providing an efficient 10,000 sf floor plate at most stories. In theory, it would be possible to increase the height of the residential tower by a few additional stories; however, the floor plates of the lower stories would need to be reduced accordingly. Adding setbacks is inefficient and increases construction costs, and it is not reasonable to assume that a developer would pursue that option for a rental building at this location. Therefore, the massing and 32-story tower height shown in **Figure A-1** represents a reasonable worst-case assumption for analysis purposes.

As shown in **Table A-1**, the incremental development expected as a result of the Proposed Actions is 209,466 gsf, with 49 fewer DUs under With Action Scenario 1.

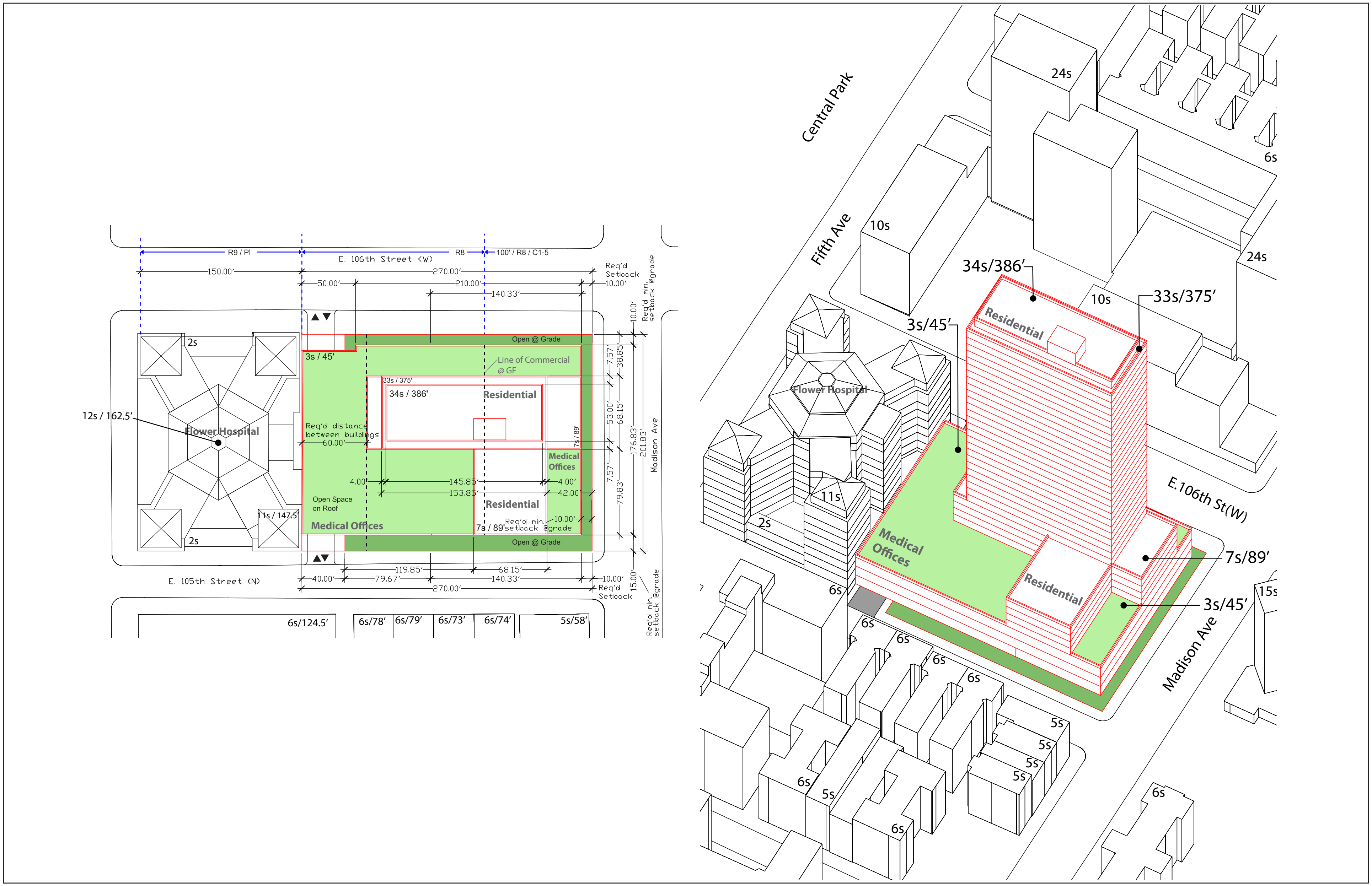
Table A-1
Reasonable Worst Case Development Scenario for Analysis
With Action Scenario 1

Program	No Action Condition	With Action Condition	Increment
Residential (gsf)	385,056	340,930	-44,126
DUs	428 DU (64 affordable)	379 DU (114 affordable) *150 NPISA*	-49 DU *+150 (NPISA)*
Retail (gsf)	20,788	0	-20,788
CF Skilled Nursing (gsf)	0	193,476	+193,476
CF Medical Office (gsf)	70,655	54,606	-16,049
CF NPISA (gsf)	0	87,653	+87,653
Parking	22,500	31,800	+9,300
Total	**498,999**	**708,465**	**+209,466**

Note:
150 Senior NPISA units in the With Action condition are excluded from the total DU count.
Source:
RWCDS Memorandum dated May 2018 and information provided by the Applicant.

WITH ACTION SCENARIO 2

Under With Action Scenario 2, the Development Site would be developed with new residential, medical office, and retail space and the FHH Building would be converted to residential use. As stated above, TCC's objective is to modernize its facilities. However, in order to ensure a conservative analysis, the EAS analyzes a scenario in which TCC discontinues it operations in the Project Area and the FHH Building is converted to residential use. Construction would occur in a single phase. The FHH Building would accommodate 215 market-rate DUs and the parking garage would be demolished. The Annex and Cohen Building would be demolished and replaced with a large mixed-use development containing 121,471 gsf of outpatient medical office space, a 34-story, 386 foot-tall, 340,930-gsf residential tower containing 379 DUs (including 114 affordable DUs) along East 106th Street, and 20,788 gsf of ground-floor retail space along Madison Avenue (see **Figure A-3**). As shown in **Table A-2**, the incremental development expected as a result of the Proposed Actions is 209,466 gsf with 166 DUs.



Source: Michael Kwartler and Associates

Scenario 2 Site Plan & Axonometric View Looking North

Figure A-3

Table A-2
Reasonable Worst Case Development Scenario for Analysis
With Action Scenario 2

Program	No Action Condition	With Action Condition	Increment
Residential (gsf)	385,056	534,406	+149,350
DUs	428 DU (64 affordable)	594 DU (114 affordable)	+166 DU
Retail (gsf)	20,788	20,788	—
CF Medical Office (gsf)	70,655	121,471	+50,816
Parking	22,500	31,800	9,300
Total (gsf)	**498,999**	**708,465**	**+209,466**
Source: RWCDS Memorandum dated May 2018 and information provided by the Applicant.			

E. SCREENING ANALYSES

All analyses were performed in accordance with the guidance contained in the *CEQR Technical Manual*.

LAND USE, ZONING, AND PUBLIC POLICY

See Attachment B, "Land Use, Zoning, and Public Policy."

COMMUNITY FACILITIES

Under CEQR, a community facilities analysis may be warranted if the Proposed Actions would directly eliminate, displace, or alter public or publicly funded community facilities, such as health care facilities, as compared to the No Action condition. If a project would physically alter a community facility, whether by displacement of the facility or other physical change, this "direct" effect triggers the need to assess the service delivery of the facility and the potential effect of the physical change on that service delivery. Temporary direct effects should also be considered (for example, the temporary closing of a facility during a phase of construction).

TCC is a publicly funded health care facility. Absent the Proposed Actions, the Applicant will discontinue TCC operations at the campus and sell the FHH and Development Sites; therefore, TCC would be displaced in the No Action condition.

Under With Action Scenario 1, the Proposed Actions would physically alter TCC. However, modifications to the existing TCC facilities would be conducted in phases to ensure that TCC health care facilities and services are not disrupted throughout construction. The FHH Building would be upgraded and modernized to house TCC's Joint Long-Term Care and Hospital Facility. During the renovation of the FHH Building, all patients and TCC functions would continue to operate using swing space that is available in the FHH Building, the Annex, and the Cohen Building. Concurrently, the Senior Building would be constructed at the corner of Madison Avenue and East 105th Street (the current location of the parking garage). Once this work is completed, TCC can appropriately rebalance the provision of health care services based on the need for higher or lower-acuity care settings. Some patients with low-acuity conditions would be relocated into the Senior Building. In the second phase, the balance of the Development Site would be available for development of the residential tower and PACE Center. Thus, the Proposed Actions would substantially benefit a publicly funded health care facility. A detailed analysis of direct effects is not warranted because the physical changes to TCC facilities would not affect service delivery.

Under With Action Scenario 2, similar to the No Action condition, it is assumed that TCC would no longer occupy the Project Area. In this scenario, which is being considered only for purposes of ensuring a conservative analysis, it is assumed that the Applicant would sell the Development Site, which would be redeveloped with residential, community facility/medical office, and retail space. A detailed analysis of direct effects is not warranted for With Action Scenario 2 because there is no change to TCC facilities as compared to the No Action condition.

An analysis of direct effects is not warranted under either With Action scenario. The Proposed Actions would not have any indirect effects on community facilities since the Proposed Actions would not result in a sufficiently large incremental population to increase the demand for existing services. Therefore, no significant adverse impact to community facilities is anticipated.

OPEN SPACE

See Attachment C, "Open Space."

SHADOWS

See Attachment D, "Shadows."

HISTORIC AND CULTURAL RESOURCES

See Attachment E, "Historic and Cultural Resources."

URBAN DESIGN AND VISUAL RESOURCES

See Attachment F, "Urban Design and Visual Resources."

HAZARDOUS MATERIALS

See Attachment G, "Hazardous Materials."

TRANSPORTATION

See Attachment H, "Transportation."

AIR QUALITY

See Attachment I, "Air Quality."

NOISE

See Attachment J, "Noise."

PUBLIC HEALTH

Under CEQR, public health is the organized effort of society to protect and improve the health and well-being of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability, and premature death; and reducing inequalities in health status. The goal of CEQR with respect to public health is to determine whether adverse impacts on human health may occur as a result of a proposed project and, if so, to identify measures to mitigate such effects.

According to the *CEQR Technical Manual*, for most proposed projects, a public health analysis is not necessary. Where no significant unmitigated adverse impact is found in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, a public health analysis is not warranted. If an unmitigated significant adverse impact is identified in one of these analysis areas, the lead agency may determine that a public health assessment is warranted for that specific technical area. This assessment represents a distinct layer of inquiry; as its criteria are informed by public health considerations and are therefore different from the criteria that trigger the need to conduct a public health assessment.

Although the *CEQR Technical Manual* thresholds for significant adverse construction noise impacts are predicted to be exceeded at certain locations during construction, these exceedances would not constitute a significant adverse public health impact. The *CEQR Technical Manual* thresholds for construction noise are based on quality of life considerations and not on public health considerations. An impact found pursuant to a quality of life framework (i.e., significant adverse construction noise impact) does not definitively imply that an impact will exist when the analysis area is evaluated in terms of public health (i.e., significant adverse public health impact).

The predicted noise impacts identified would not constitute chronic exposure to high levels of noise because of the short term and intermittent nature of construction noise as described in Attachment K, “Construction.” The maximum predicted construction noise levels (up to the low 80s dBA) would occur over a limited duration during the construction period based on the amount and type of construction work occurring in the construction work areas. Furthermore, construction activity would be limited to a single shift during the day, leaving the remainder of the day and the evening unaffected by construction noise. Since the construction noise would fluctuate in level and would not occur constantly throughout the construction period, which itself is limited in duration, it would not be described as “chronic.” Consequently, construction of the Proposed Project would not have the potential to result in chronic exposure to high levels of noise.

The predicted absolute noise levels would be below the threshold for potential hearing loss of 85 dBA at all analyzed receptors. The maximum predicted levels of noise resulting from construction of the Proposed Project would be in the low 80s dBA.

Based on the predicted noise levels described in Attachment K, “Construction,” it is also not expected that construction of the Proposed Project would result in unpredictable exposure to short-term impacts of noise at high decibel levels. The maximum short-term noise impact resulting from construction of the Proposed Project would be in the low 80s dBA. Because of the limited magnitude by which interior noise levels would exceed the acceptable threshold at residential and in-patient medical receptors and construction noise would not occur during the nighttime when residences are most sensitive to noise, predicted noise levels due to construction of the Proposed Project would not constitute unpredictable exposure to short-term impacts of noise at high decibel levels.

NEIGHBORHOOD CHARACTER

Under CEQR, a neighborhood character assessment considers how elements of the environment combine to create the context and feeling of a neighborhood and how a project may affect that context and feeling. In order to determine a project’s effects on neighborhood character, the elements that contribute to a neighborhood’s context and feeling are considered together. These elements include land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; and noise. According to the *CEQR Technical Manual*, an assessment of neighborhood character is generally needed when a project has the potential to result in significant adverse impacts in any of the technical areas presented above or when a project may have moderate effects on several of the elements that define a neighborhood's character. Although a detailed analysis is required for some of the technical areas above, the Proposed Actions would not result in significant adverse impacts in any of these technical areas; therefore, the Proposed Actions would not result in significant adverse impacts on neighborhood character.

CONSTRUCTION

See Attachment K, "Construction." *

A. INTRODUCTION

This attachment assesses the potential impacts of the Proposed Actions on land use, zoning, and public policy. As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

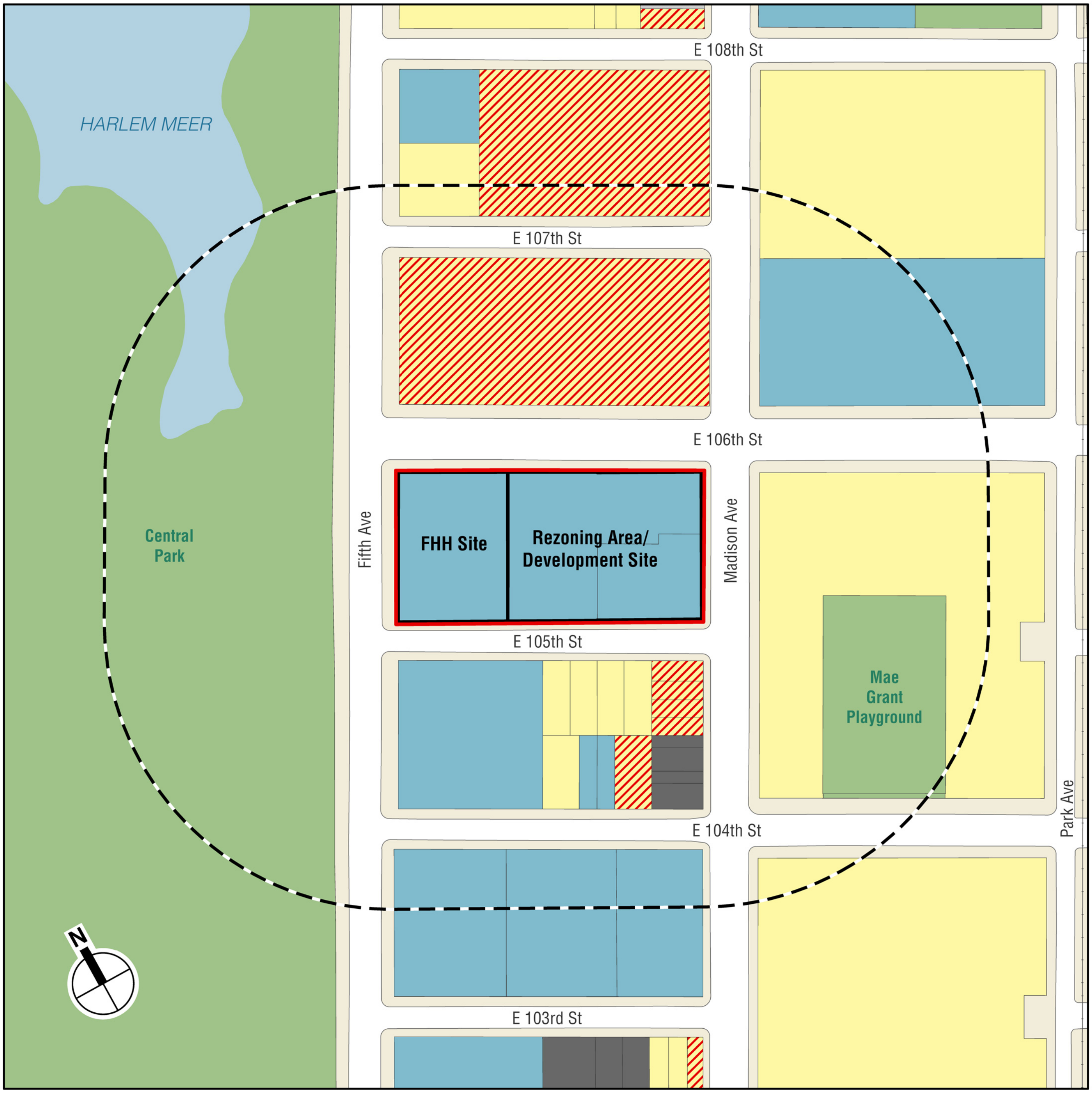
The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

B. METHODOLOGY

According to the 2014 *City Environmental Quality Review* (*CEQR) Technical Manual*, a preliminary land use assessment, which includes a description of existing and future land uses, zoning, and public policies, should be provided for all projects that would affect land use or would change the zoning on a site, regardless of a project's anticipated effects. Accordingly, a preliminary analysis has been prepared that describes existing and anticipated future conditions for the 2025 analysis year, assesses the nature of any changes on these conditions that would be created by the Proposed Actions, and identifies those changes, if any, that could be significant or adverse.

The study area for this analysis of land use, zoning, and public policy encompasses the area within 400 feet of the Project Area. As shown in **Figure B-1**, the study area roughly extends north to East 107th Street, south to East 104th Street, west to Fifth Avenue, and east to Park Avenue.



Project Area
Boundary between FHH Site and Rezoning Area/ Development Site
Study Area (400-foot perimeter)
Open Space and Outdoor Recreation
Parking Facilities
Public Facilities and Institutions
Residential
Residential with Commercial Below
Vacant Land

TERENCE CARDINAL COOKE REZONING

Existing Land Use
Figure B-1

C. EXISTING CONDITIONS

LAND USE

PROJECT AREA

The Project Area is composed of the entirety of Block 1611, Lots 1 and 15, and includes the FHH Site and the Rezoning Area/Development Site. The Rezoning Area/Development Site occupies most of Block 1611 and includes the Annex, the Cohen Building, and a parking garage.[1] The Annex (Block 1611, p/o Lot 1) is located in the mid-block and contains approximately 192,080 gsf of floor area, which includes 78 skilled nursing facility beds, dialysis facilities, occupational and physical therapy offices, a chapel, and the Specialty Hospital. The Cohen Building (Block 1611, p/o Lot 1) is located at the corner of Madison Avenue and East 106th Street and contains approximately 108,862 gsf of floor area, which includes 134 skilled nursing facility beds and the Specialty Hospital. A parking garage (Block 1611, Lot 15) is located at the corner of Madison Avenue and East 105th Street, and contains approximately 85,182 gsf of floor area.

The western portion of the Project Area includes the FHH Building located along Fifth Avenue (Block 1611, p/o Lot 1). The FHH Building was constructed in 1921 and contains approximately 193,476 gsf of floor area, which includes 347 skilled nursing facility beds and kitchen and laundry facilities.

STUDY AREA

As shown in **Figure B-1**, the study area roughly extends north to East 107th Street, south to East 104th Street, west to Fifth Avenue, and east to Park Avenue. The study area is characterized primarily by residential and institutional uses.

The northern portion of the study area, between East 106th Street and East 107th Street, contains a large mid-rise residential apartment complex with ground-floor retail and medical office space. Farther north, there are several additional mid-rise apartment buildings. To the northeast, there is a school campus—the Jackie Robinson Educational Complex—and a New York City Housing Authority (NYCHA) development, Lehman Village. The eastern portion of the study area contains a NYCHA complex, Carver Houses, and the Mae Grant Playground. The southern portion of the study area contains El Museo del Barrio, a museum devoted to Latin American culture, and five- to six-story residential buildings with ground-floor retail space. The corner of East 104th Street and Madison Avenue is occupied by a parking facility. Farther south, the study area encompasses the Museum of the City of New York, and an adjacent school (P.S./I.S. 171 Patrick Henry School). The western edge of the study area is occupied by Central Park's Vanderbilt Gate along with the Conservatory Garden.

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[1] The Applicant is exploring temporary reuse options for the existing parking garage located at the northwest corner of East 105th Street and Madison Avenue. The garage has been unused for several years. Should plans to re-occupy the garage move forward, the Applicant would make repairs to the building and enter into an operating agreement with a parking garage operator for a period not to exceed 5 years, with early termination provisions. The temporary garage would be used as accessory parking. In the event the Proposed Actions are not approved and the Applicant sells the FHH and Development Sites, it is assumed that the parking garage would be demolished to allow for an as-of-right development. Should the Proposed Actions be approved and the Applicant move forward with redevelopment plans, early termination of the operating agreement would allow for site preparation and the commencement of construction of the proposed Senior Building.

ZONING

PROJECT AREA

As shown in **Figure B-2**, the Development Site is located within an R7-2 zoning district and a C1-5 commercial overlay is mapped along Madison Avenue for a depth of 100 feet. The FHH Site, located directly to the west of the Development Site, is located within an R9 district and is also located within the Special Park Improvement (PI) District.

R7-2 zoning districts are medium-density apartment house districts mapped primarily in Upper Manhattan with height factor (HF) regulations and low parking requirements. The HF regulations for R7 districts encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. HF buildings are often set back from the street and surrounded by open space and on-site parking. The maximum residential floor area ratio (FAR) is 3.44 while a community facility FAR of up to 6.5 is permitted. Under HF zoning, the open space ratio (OSR) ranges from 15.5 to 25.5. As in other non-contextual districts, a taller building may be developed by providing more open space.

Alternatively, buildings in R7-2 zoning districts may be developed pursuant to *Quality Housing* regulations, which utilize height limits to produce lower, high lot coverage buildings set at or near the street line. Buildings on wide streets are permitted at an FAR of 4.0 with a maximum building height of 80 feet, or 85 feet if providing a qualifying ground floor. The maximum FAR on narrow streets is 3.44, with a maximum building height of 75 feet. Under MIH, higher maximum FAR and heights are allowed in R7-2 districts. For sites within 100 feet of a wide street, the R7-2 district allows a maximum FAR of 4.6 (3.6 is allowed beyond 100 feet of a wide street). A maximum height of 13 stories (or 135 feet) is allowed for buildings developed under MIH or that provide certain senior facilities.

Off-street parking is generally required for 50 percent of a building's dwelling units (DUs), but no parking is required for income-restricted housing units (IRHU) in the Project Area because it is located within the Transit Zone. Off-street parking requirements can be waived if 15 or fewer parking spaces are required or if the zoning lot is 10,000 sf or less. When mapped within an R7-2 district, the C1-5 commercial overlay has a commercial FAR of 2.0 and permits local retail uses such as grocery stores, restaurants, and beauty parlors. Parking is not required.

R9 zoning districts are higher-density districts designed in part for institutional purposes (mainly hospitals). Buildings in R9 districts can be developed under HF regulations or the optional *Quality Housing* regulations. Under HF zoning, residential FAR may reach 7.52 while a community facility FAR of up to 10.0 is permitted. R9 zoning districts may also be developed pursuant to *Quality Housing* regulations. Buildings are permitted an FAR of 7.52 with a maximum building height of 145 feet on wide streets and 135 feet on narrow streets. Under MIH, the maximum permitted FAR is 8.0 with a maximum building height of 170 feet on a wide street (160 feet on a narrow street).

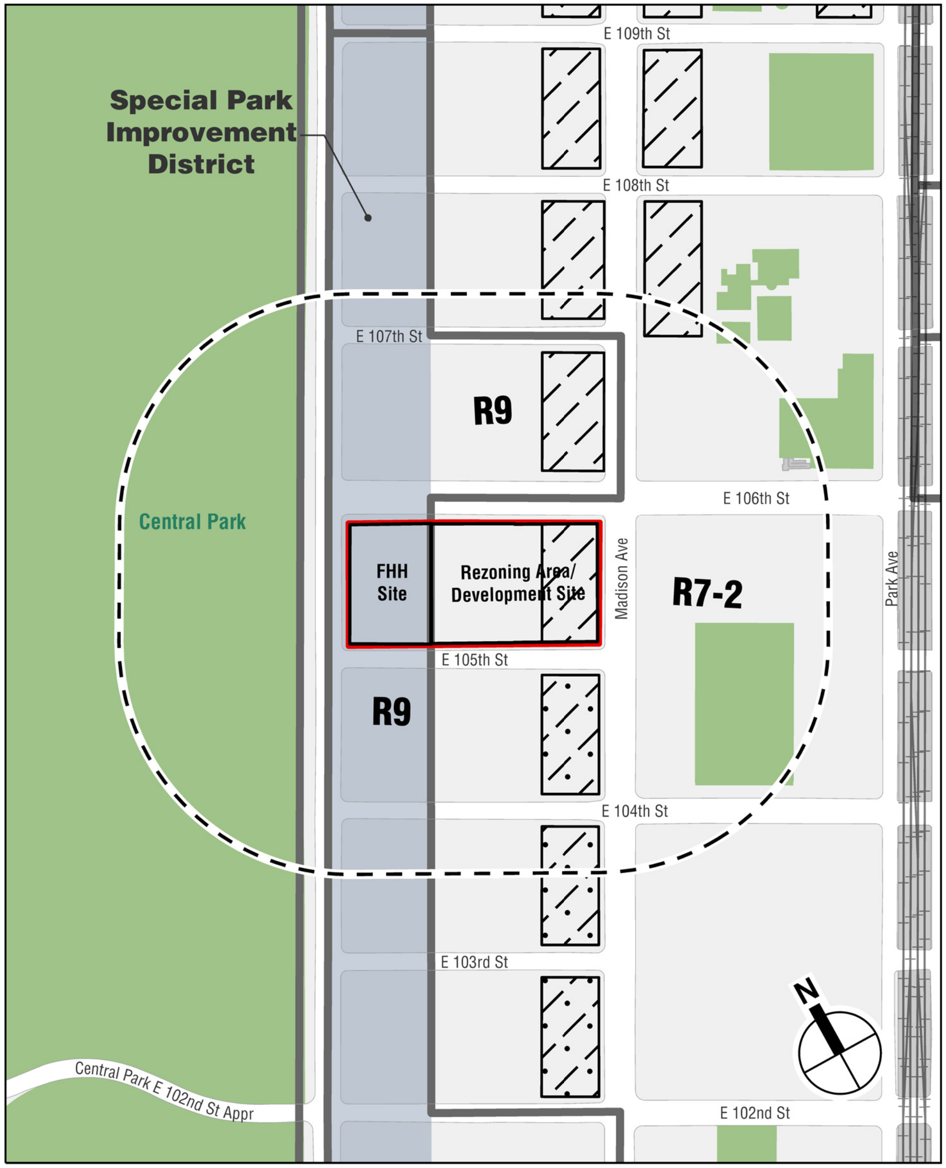
The Special PI District preserves the residential character and architectural features found along Fifth and Park Avenues from East 59th Street to East 111th Street. This district limits the height of new buildings to 210 feet or 19 stories, whichever is less, and also requires street wall continuity. Floor area bonuses are not permitted.

STUDY AREA

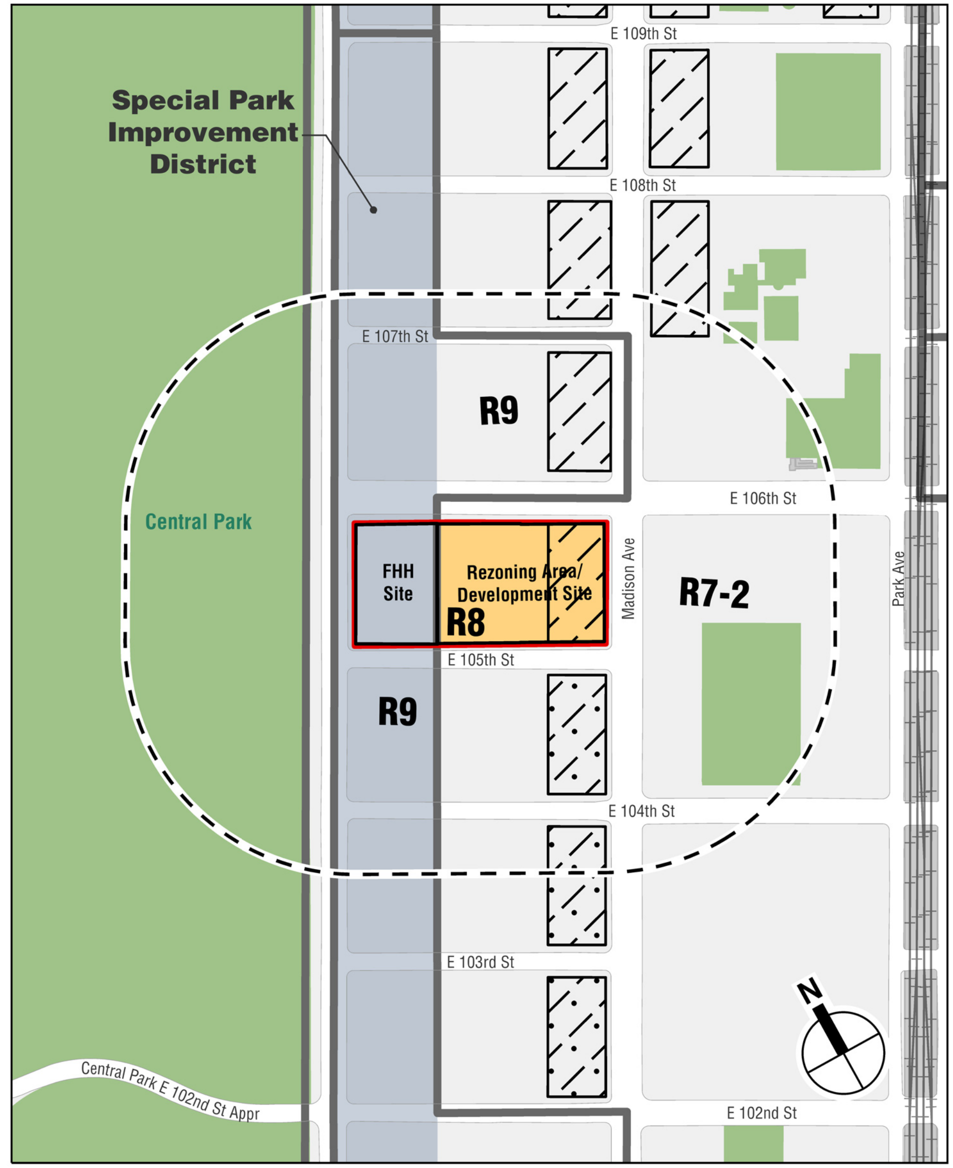
The study area is primarily mapped with the same zoning districts as the Project Area with the exception of a C2-5 commercial overlay mapped along the west side of Madison Avenue south of the Development Site. C2-5 commercial overlays, when mapped within a residential district,

12.6.18

Data source: New York City Department of City Planning, November 2018



Existing Zoning



Proposed Zoning

Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area Boundary (400-foot perimeter)

Rezoning Area

Zoning Districts

Special Park Improvement District

C1-5 Commercial Overlay District

C2-5 Commercial Overlay District

0 200 FEET

TERENCE CARDINAL COOKE REZONING

Existing and Proposed Zoning

Figure B-2

permit an expanded range of retail uses, such as funeral homes and repair services, as compared to C1-5 commercial overlays.

Most of the study area is mapped within an R7-2 district. The western portion of the study area within 150 feet of Fifth Avenue is located within an R9 district and the Special PI District; the block to the north of the Project Area is also mapped as an R9 district. There are C1-5 and C2-5 commercial overlays on the west side of Madison Avenue mapped to a depth of 100 feet (see **Figure B-2** and **Table B-1)**.

Table B-1
Existing Zoning Districts in the Study Area

Zoning District	Maximum FAR	Uses/Zone Type
C1-5	2.0 commercial uses Follows bulk residential and community facility regulations of mapped residential district	Local retail
C2-5	2.0 commercial uses Follows bulk residential and community facility regulations of mapped residential district	Expanded local retail
R7-2	3.44 residential uses 6.5 community facility uses	Medium-density apartment house district
R9	7.52 residential uses 10.0 community facility uses	High-density institutional uses with tower regulations
Special PI District	N/A	Height limit of 210 feet or 19 stories with street wall continuity requirements
Source: *New York City Zoning Resolution.*		

The study area also intersects with the southwestern boundary of the neighborhood study area for the East Harlem Neighborhood Rezoning, which was approved by the NYC City Council in 2018. Facilitated by a community-based planning process, the East Harlem Neighborhood Rezoning included a variety of zoning text and map amendments to address the preservation and creation of affordable housing through the Mandatory Inclusionary Housing program (MIH), effectively promoting economic development, investment in open space, and the preservation of the vibrant cultural heritage of El Barrio/East Harlem, all while including moderate height and density provisions as part of the rezoning.

PUBLIC POLICY

The public policy initiatives applicable to the Project Area and the surrounding study area are described below.

PROJECT AREA

Food Retail Expansion to Support Health Program

The eastern portion of the Project Area as well as the eastern portion of the study area (primarily affecting lots along Madison Avenue) are located in an area eligible to participate in the New York City Food Retail Expansion to Support Health (FRESH) program. The FRESH program provides discretionary tax incentives to promote the establishment and retention of neighborhood grocery stores in communities that lack full-line grocery stores. The FRESH program is open to grocery store operators renovating existing retail space or developers seeking to construct or renovate retail space that will be leased by full-line grocery store operators. Financial incentives are available to eligible grocery store operators and developers to facilitate and encourage FRESH grocery stores in the designated area. These incentives include real estate tax abatements, sales tax exemptions, and mortgage recording tax abatements.

Housing New York 2.0

On May 5, 2014, the de Blasio administration released *Housing New York: A Five-Borough, Ten-Year Plan* (*Housing New York)*, a plan intended to build and preserve 200,000 affordable DUs over the coming decade to support New Yorkers with a range of incomes. The plan details the key policies and programs for implementation, including developing affordable housing on underused public and private sites. *Housing New York* calls for community engagement at the early stages of the planning process, so that community input informs land use and zoning changes intended to generate new affordable housing. Lastly, *Housing New York* calls for providing high-quality affordable housing to the most vulnerable residents of New York City. Investing in quality affordable housing for the City's special needs, homeless, and senior households, as well as for people with disabilities will reduce the demand for social expenditures in the long term and provide a more cost-efficient strategy for addressing a critical housing need. In Fiscal Year 2017, under *Housing New York*, the City financed the creation and preservation of more than 24,000 affordable DUs across the five boroughs, exceeding projections by more than 4,000 DUs. In the third full fiscal year of the mayor's 10-year plan to build or preserve 200,000 affordable DUs, the City financed approximately 7,700 new construction DUs and approximately 16,600 preservation DUs. The Fiscal 2017 affordable housing production figure is the second highest in New York City history. In October of 2017, the City announced plans to expand and update its housing plan with a new goal of preserving and/or creating 300,000 affordable DUs by 2026.

One New York: The Plan for a Strong and Just City

In April 2007, the Mayor's Office of Long Term Planning and Sustainability released *PlaNYC: A Greener, Greater New York (PlaNYC)*. Since that time, updates to *PlaNYC* have been issued that build upon the goals set forth in 2007 and provide new objectives and strategies. In 2015, *One New York: The Plan for a Strong and Just City (OneNYC)* was released by the Mayor's Office of Sustainability and the Mayor's Office of Recovery and Resiliency. *OneNYC* builds upon the sustainability goals established by *PlaNYC* and focuses on growth, equity, sustainability, and resiliency. Goals outlined in the report include those related to housing (ensuring access to affordable, high-quality housing) and thriving neighborhoods (ensuring that neighborhoods will be well-served by transit, affordable housing, retail, and City services).

D. FUTURE WITHOUT THE PROPOSED ACTIONS

This section considers land use, zoning, and public policy conditions in the Future without the Proposed Actions (the "No Action" condition). These conditions are projected by considering changes that are likely or expected to occur within the Project Area and within the study area.

LAND USE

PROJECT AREA

Absent the Proposed Actions, it is assumed that the Applicant will move TCC out of New York City and sell the FHH and Development Sites. It is assumed that the FHH Building will remain and will be adaptively reused for residential use, accommodating 215 DUs. The Development Site will be programmed with an L-shaped 20-story, 225.5 foot-tall mixed-use building with frontage along East

106th Street and Madison Avenue. It is assumed that approximately 30 percent of the 213 total DUs (64 DUs) will be affordable through the Affordable New York Housing Program. Given the prevalence of medical institutions in the area, the No Action condition is expected to include some medical office space in the mid-block. For conservative analysis purposes, the No Action condition assumes that approximately 70,655 gsf of medical office space will be developed on the Development Site.

In addition to medical office space, 20,788 gsf of retail would be provided, along with 191,580 gsf of residential floor area for a total of 305,452 gsf on the Development Site. The FHH Building would be converted to residential floor area, containing 193,476 gsf. The Project Area is projected to contain a total of 498,899 gsf of development.

STUDY AREA

Within the study area, there are no new projects expected to be completed and in operation by the 2025 analysis year, with the exception of two residential rehabilitations (no changes to use or occupancy).

ZONING

In the No Action condition, no changes to zoning are currently anticipated that would affect the Project Area or the study area. In accordance with existing zoning, the Development Site would be developed with a 20-story mixed-use building with a residential FAR of 2.19, a commercial FAR of 0.24, and a community facility FAR of .81. The FHH Site would be converted so that the existing 12-story community facility building would contain a residential FAR of 2.22. In all, an FAR of 5.46 would be provided across the Development and FHH Sites (compared to a maximum of 7.75 FAR permitted pursuant to the zoning regulations for zoning lots divided by district boundaries).

PUBLIC POLICY

There are no changes to public policy expected in the study area in the No Action condition. Existing public policies are expected to remain in effect.

E. FUTURE WITH THE PROPOSED ACTIONS

LAND USE

PROJECT AREA

With Action Scenario 1

In the Future with the Proposed Actions (the “With Action” condition), under With Action Scenario 1, the Applicant would redevelop the Project Area with new medical facilities, senior supportive housing, and residential space and modernize and consolidate TCC’s functions within the existing FHH Building. Construction would occur in two phases. In Phase 1, the FHH Building would be rehabilitated to accommodate the Joint Long-Term Care and Hospital Facility. The existing parking garage would then be demolished, and the Development Site would be developed with a 10-story, 94 foot-tall, 87,653-gsf nonprofit senior housing development (the “Senior Building”) containing approximately 150 supportive housing (SH) units, on the corner of East 105th Street and Madison Avenue. In Phase 2, the Annex and Cohen Building would be demolished so that the remainder of the Development Site would be developed with TCC’s Program of All-Inclusive Care for the Elderly (“PACE Center”), in a two-story building located mid-block, containing 54,606 gsf of medical office space. The PACE Center would be combined with a 32-story, 356 foot-tall residential tower, rising above the two-story base and containing 340,930 gsf of residential space (379 DUs, including 114 affordable DUs), on the corner of East 106th Street and Madison Avenue.

With Action Scenario 2

As stated above, TCC's objective is to modernize its facilities. However, in order to ensure a conservative analysis, the EAS analyzes a scenario in which TCC discontinues it operations in the Project Area and the FHH Building is converted to residential use. In With Action Scenario 2, the FHH Building would accommodate 215 market-rate DUs and the parking garage would be demolished. The Annex and Cohen Building would be demolished and replaced with a large mixed-use development, containing 121,471 gsf of outpatient medical office space, a 34-story, 386 foot-tall, 340,930-gsf residential tower containing 379 DUs (including 114 affordable DUs) along East 106th Street, and 20,788 gsf of ground-floor retail space along Madison Avenue.

STUDY AREA

The Proposed Actions would result in development that would be consistent with land uses in the study area. The study area would continue to have a mix of predominantly residential and institutional uses, and the anticipated community facility, residential, and institutional uses would be consistent with those uses. The Proposed Actions would enhance and modernize existing health care facilities while also providing new residential uses, including senior and affordable housing. Overall, the Proposed Actions would result in development that would be compatible with and supportive of land uses in the surrounding area and would not result in significant adverse land use impacts.

ZONING

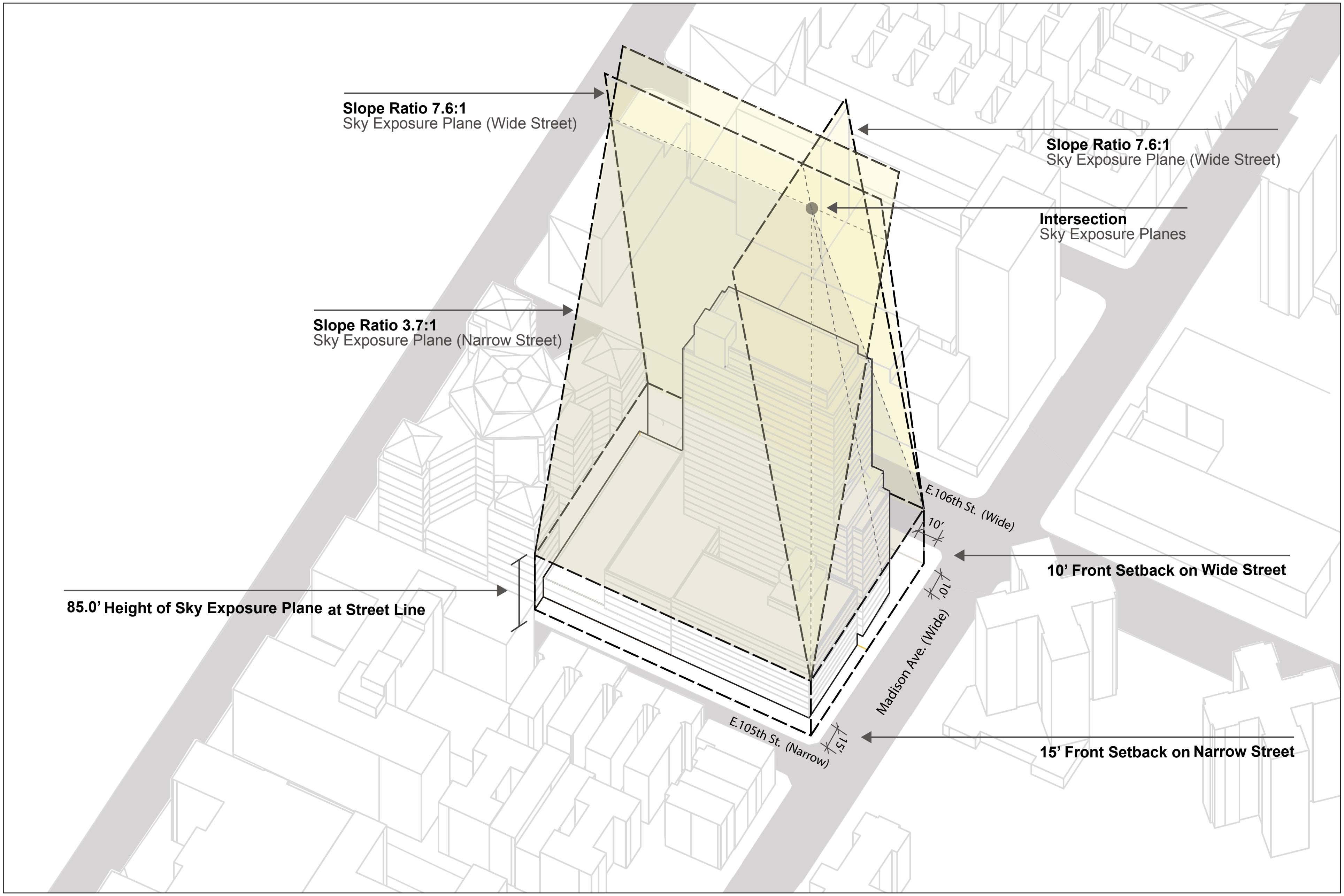
PROJECT AREA

As described in Attachment A, "Project Description," the Proposed Actions would rezone the Development Site to R8 and R8/C1-5 districts. R8 districts are high-density residential districts that follow HF regulations or optional *Quality Housing* regulations. The illustrative With Action scenarios assume development under HF zoning. The total FAR ranges from 0.94 to 6.02, while the OSR ranges from 5.9 to 11.9. The sky exposure plane is at a height of 85 feet or nine stories. The proposed R8 zoning would permit the same total floor area as the existing zoning, although it would permit an increase in residential square footage as well as a reduction in open space requirements.

With Action Scenario 1

With Action Scenario 1 would maximize total community facility square footage. Under this scenario, the new buildings on the Development Site would reach a maximum height of 356 feet (32 stories), containing 142,259 gsf of community facility floor area (medical office, and Senior Building) within the two proposed buildings, along with 340,930 gsf of residential floor area, resulting in a community facility FAR of 1.63 and a residential FAR of 3.90. The FHH Building would remain at a height of 163 feet (12 stories), containing 193,476 gsf of additional community facility floor area (Long-Term Care and Hospital Facility) and resulting in a community facility FAR of 2.2. The Development Site and FHH Site would be developed to 7.75 FAR, which is the maximum FAR permitted pursuant to the zoning regulations for zoning lots divided by district boundaries.

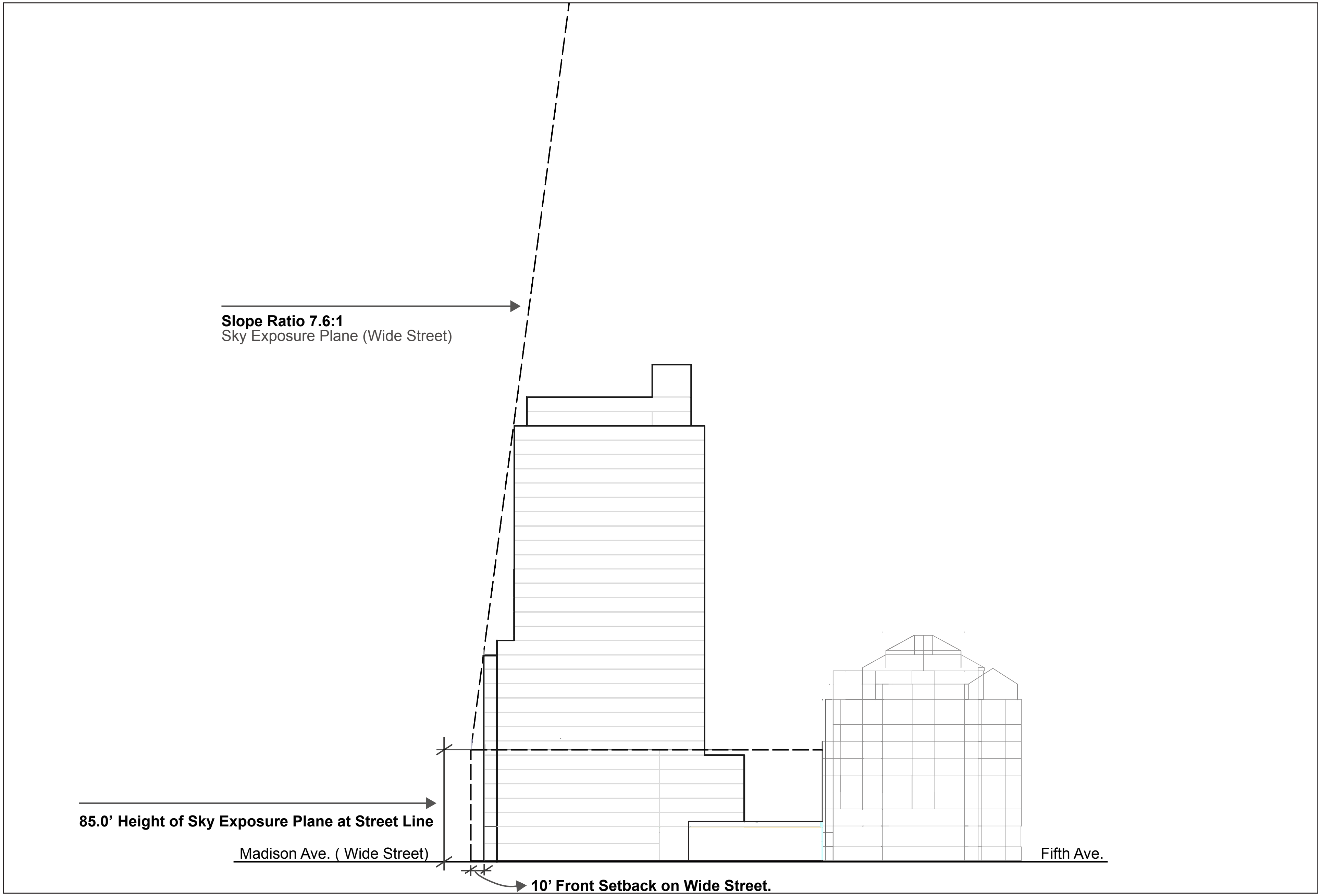
For illustrative purposes, axonometric and elevation diagrams depicting the sky exposure plane and zoning envelope under the proposed R8 height factor regulations are provided in **Figures B-3 through B-5**. The massing shown in **Figures B-3 through B-5** represents the



Source: Michael Kwartier and Associates

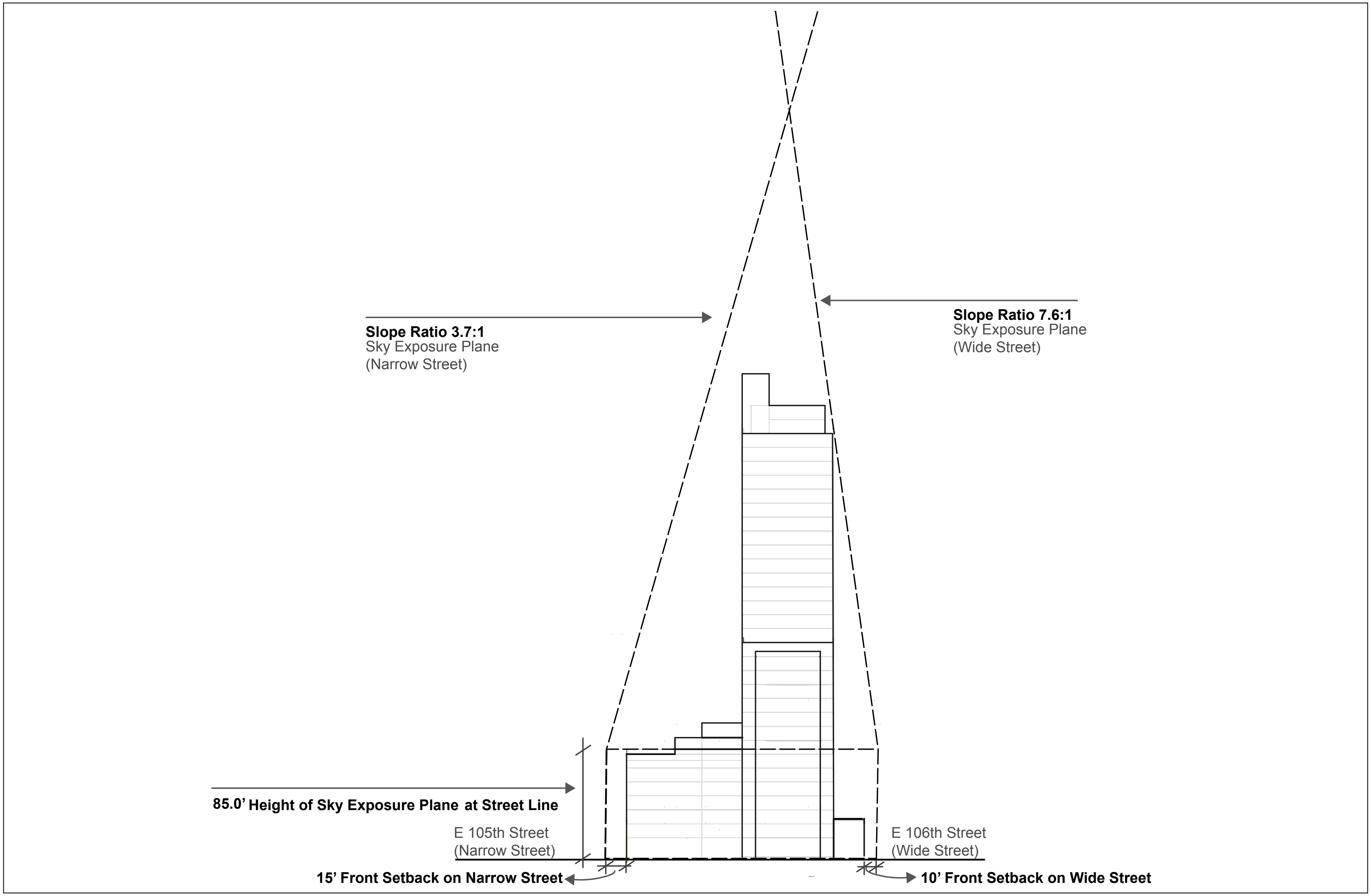
Sky Exposure Plane Diagrams

Figure B-3



Source: Michael Kwartier and Associates

Sky Exposure Plane Diagrams
Figure B-4



Source: Michael Kwartier and Associates

Sky Exposure Plane Diagrams
Figure B-5

reasonable worst case development scenario because it maximizes residential floor area, which is limited due to the open space requirements of height factor zoning, while providing an efficient 10,000-sf floor plate at most stories. In theory, it would be possible to increase the height of the residential tower by a few additional stories; however, the floor plates of the lower stories would need to be reduced accordingly. Adding setbacks is inefficient and increases construction costs, and it is not reasonable to assume that a developer would pursue that option for a rental building at this location. Therefore, the massing and 32-story tower height shown in **Figures B-3 through B-5** represents a reasonable worst-case assumption for analysis purposes.

With Action Scenario 2

With Action Scenario 2 would maximize total residential square footage. Under this scenario, the new buildings on the Development Site would reach a maximum height of 386 feet (34 stories), containing a combined 340,930 gsf of residential floor area, 20,788 gsf of retail floor area, and 121,471 gsf of outpatient medical office space, resulting in a residential FAR of 3.90, commercial FAR of 0.24, and community facility FAR of 1.39, on the Development Site. The FHH Building would remain at a height of 163 feet (12 stories), containing 193,476 gsf of residential floor area and resulting in an FAR of 2.22. The Development Site and FHH Site would be developed to 7.75 FAR, which is the maximum FAR permitted pursuant to the zoning regulations for zoning lots divided by district boundaries.

The Proposed Actions include a zoning text amendment to Appendix F of the New York City ZR to designate the Rezoning Area as an MIH Area. Under the MIH program, when new housing capacity is approved through land use actions, the New York City Planning Commission (CPC) and the New York City Council can choose to impose either one or both of the two basic options regarding affordable housing set-asides, income bands, and maximum income requirements. Option 1 requires that 25 percent of the residential floor area be set aside for DUs affordable to households earning an average of 60 percent of area median income (AMI), including 10 percent of the residential floor area that must be affordable to households earning 40 percent of AMI. Option 2 requires that 30 percent of the residential floor area be set aside for households earning an average of 80 percent AMI.

The Applicant is seeking to map MIH Option 2. For purposes of analysis, it is conservatively assumed that 30 percent of the proposed DUs (114) would be offered at or below 80 percent AMI in With Action Scenarios 1 and 2.

STUDY AREA

The Proposed Actions would not result in significant adverse impacts associated with zoning. The study area is mapped with R7-2 and R9 zoning districts, which allow for considerable variability in residential FAR—ranging from a maximum of 3.44 within an R7 district to a maximum of 7.52 under an R9 district. The proposed R8 district has a maximum FAR of 6.02. The Development Site may be developed pursuant to HF regulations in both districts, although the maximum height of the front wall is higher in the R8 district than the R7-2 district. The height and density of project-generated development would be somewhat greater than that of other developments in the study area, such as the 25-story residential tower on the block immediately to the north of the Project Area. The Proposed Actions would increase the allowable residential density on the Development Site (3.44 to 6.02 FAR), however, the Development Site is not expected to be developed solely with residential buildings, and there is no density increase for community facility developments under the proposed R8 district (6.5 FAR) as compared to the existing R7-2 district. Overall, the Proposed Actions would be compatible with zoning in the surrounding area and would not result in significant adverse impacts.

PUBLIC POLICY

The development anticipated with the Proposed Actions would be consistent with and supportive of the public policies that currently apply to the Project Area and the surrounding study area.

PROJECT AREA

Food Retail Expansion to Support Health Program

The Proposed Actions would facilitate the creation of new ground-floor commercial spaces under With Action Scenario 2 and would create an opportunity for new neighborhood grocery stores to be located within the Development Site. Therefore, the Proposed Actions are consistent with the FRESH Program and would not conflict with this policy.

Housing New York 2.0

The Proposed Actions directly support the goals and principles outlined in *Housing New York 2.0.* The Proposed Actions would foster a diverse and livable neighborhood and build new affordable housing for New Yorkers. The Proposed Actions would advance New York City's ambitious housing plan by creating up to 379 DUs (114 affordable) and development of the Senior Building under With Action Scenario 1. Up to 594 DUs (114 affordable) would be created under With Action Scenario 2, without a Senior Building component.

One New York: The Plan for a Strong and Just City

The Proposed Actions are consistent with the goals of *OneNYC* as they would help create and preserve affordable housing and support the development of a vibrant neighborhood, make streets safer, improve commercial services, and provide access to jobs, all of which are key goals of *OneNYC*. In particular, the Proposed Actions would support *OneNYC*'s land use goals of creating substantial new housing opportunities at a range of incomes. The Proposed Actions would support *OneNYC*'s goals for equity by serving the medical needs of low-income populations and finally, they would promote accessibility by focusing development in areas that are served by mass transit.

F. CONCLUSION

Overall, the Proposed Actions would not result in significant adverse impacts to land use, zoning, or public policy within the study area. ✴

A. INTRODUCTION

This attachment assesses the potential impacts of the Proposed Actions on open space resources. Open space is defined in the *2014 City Environmental Quality Review (CEQR) Technical Manual* as publicly accessible, publicly or privately owned land that is available for leisure, play, sport, or serves to protect and enhance the natural environment. An open space assessment should be conducted if a project would have a direct effect on open space, such as eliminating or altering a public open space, or an indirect effect, such as when an increase in population could overtax the capacity of an area's open spaces.

As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

An open space assessment was not conducted for With Action Scenario 1 because the Proposed Actions would result in a decrease in residential population in this scenario compared to the No Action condition.

The Proposed Actions would result in a substantial new residential population in With Action Scenario 2 (an increment of 401 residents compared to the No Action condition), which would create new demands for open space in the area. Therefore, in accordance with *CEQR Technical Manual* guidelines, an open space assessment was conducted to determine whether the Proposed Actions would result in significant adverse open space impacts. The analysis inventories the condition and use of open spaces within a ½-mile radius of the Development Site and addresses potential impacts on open space facilities quantitatively. As described below, the analysis concludes that the Proposed Actions would not result in any significant open space impacts in With Action Scenario 2.

B. METHODOLOGY

DIRECT EFFECTS

According to the *CEQR Technical Manual*, a proposed action would have a direct effect on an open space if it causes the physical loss of public open space because of encroachment onto the space or displacement of the space; changes the use of an open space so that it no longer serves the same user population; limits public access to an open space; or results in increased noise or air pollutant emissions, odor, or shadows that would affect the usefulness of a public open space, whether on a permanent or temporary basis. The Proposed Actions would not displace any open space, cause a change in open space use, nor would it result in shadows or increased air emissions on an open space. As a result, a direct effects analysis is not warranted and is not discussed further.

INDIRECT EFFECTS

Following the methodology of the *CEQR Technical Manual*, indirect open space effects may occur when a proposed action would add enough population, either residents or non-residents, to noticeably diminish the ability of an area's open space to serve the future population.

Typically, an assessment of indirect effects is conducted when a project would introduce 200 or more residents or 500 or more workers to an area; however, the thresholds for assessment are slightly different for areas of the City that have been identified as either underserved or well-served by open space. Since the Development Site is in an area identified as well-served, the threshold of 350 residents and 750 workers was applied in this analysis.

The Proposed Actions would result in an increment of 166 DUs on the Development Site and FHH Site and introduce an estimated 401 residents to the surrounding area in With Action Scenario 2.[1] The Proposed Actions would introduce fewer than 750 workers to the area. Therefore, this assessment focuses on the anticipated residential population's effect on open space ratios. The purpose of a preliminary assessment is to clarify the degree to which an action would affect open space and the need for further analysis. If the assessment indicates the need for further analysis, a detailed analysis of open space should be performed.

The open space assessment analyzes how a project would change the open space ratios in the study area. According to the *CEQR Technical Manual*, if a proposed project would reduce an open space ratio and consequently result in overburdening existing facilities, or if it would substantially exacerbate an existing deficiency in open space, it may result in a significant impact on open space resources. In general, if the assessment shows that a study area's open space ratio falls below the City guidelines of 2.0 acres of active open space and 0.5 acres of passive open space per 1,000 residents; and a proposed action would result in a decrease in the ratio of more than 5 percent, it could be considered a substantial change warranting a more detailed analysis. However, in areas where the ratio is closer to 2.5 acres per 1,000 residents, a greater percentage of change (more than

[1] Based on the American Community Survey (ACS) 2016 data, an average household size of 2.41 persons per household for Manhattan Community District 11 was applied to the analyzed number of units for the Proposed Actions.

5 percent) may be tolerated. Conversely, in areas that are extremely lacking in open space, a reduction as small as 1 percent may be considered significant.

In addition to the quantitative factors cited above, the *CEQR Technical Manual* also recommends consideration of qualitative factors in assessing the potential for open space impacts, when warranted. These include the availability of nearby destination resources and the beneficial effects of new open space resources provided by the project.

STUDY AREA

The *CEQR Technical Manual* recommends establishing study area boundaries as the first step in an open space analysis. Residents are assumed to travel up to ½-mile to use open space and recreation areas. Therefore, as recommended in the *CEQR Technical Manual*, a ½-mile residential study area is used to analyze the project's effects on open space.

Consistent with CEQR methodologies, the study area was adjusted to include all census tracts that fall at least 50 percent within a ½-mile radius around the Development Site. **Figure C-1** shows all census tracts included in the residential study area.

OPEN SPACE USER POPULATIONS

Existing Conditions

Data were compiled from the 2016 ACS 5-Year Estimates for the census tracts in the residential study area to determine the number of residents within the study area—71,243 residents.

Future without the Proposed Actions

There are 33 new developments anticipated to be completed in the open space study area by 2025. The residential population in the No Action condition was estimated by applying the average household size of 2.41 persons per household for Manhattan Community District 11 to the number of new DUs added by the expected developments in the study area. These development projects, when combined with the No Action development on the Development Site, will result in an estimated total of 6,446 new residents in the study area.

Future with the Proposed Actions

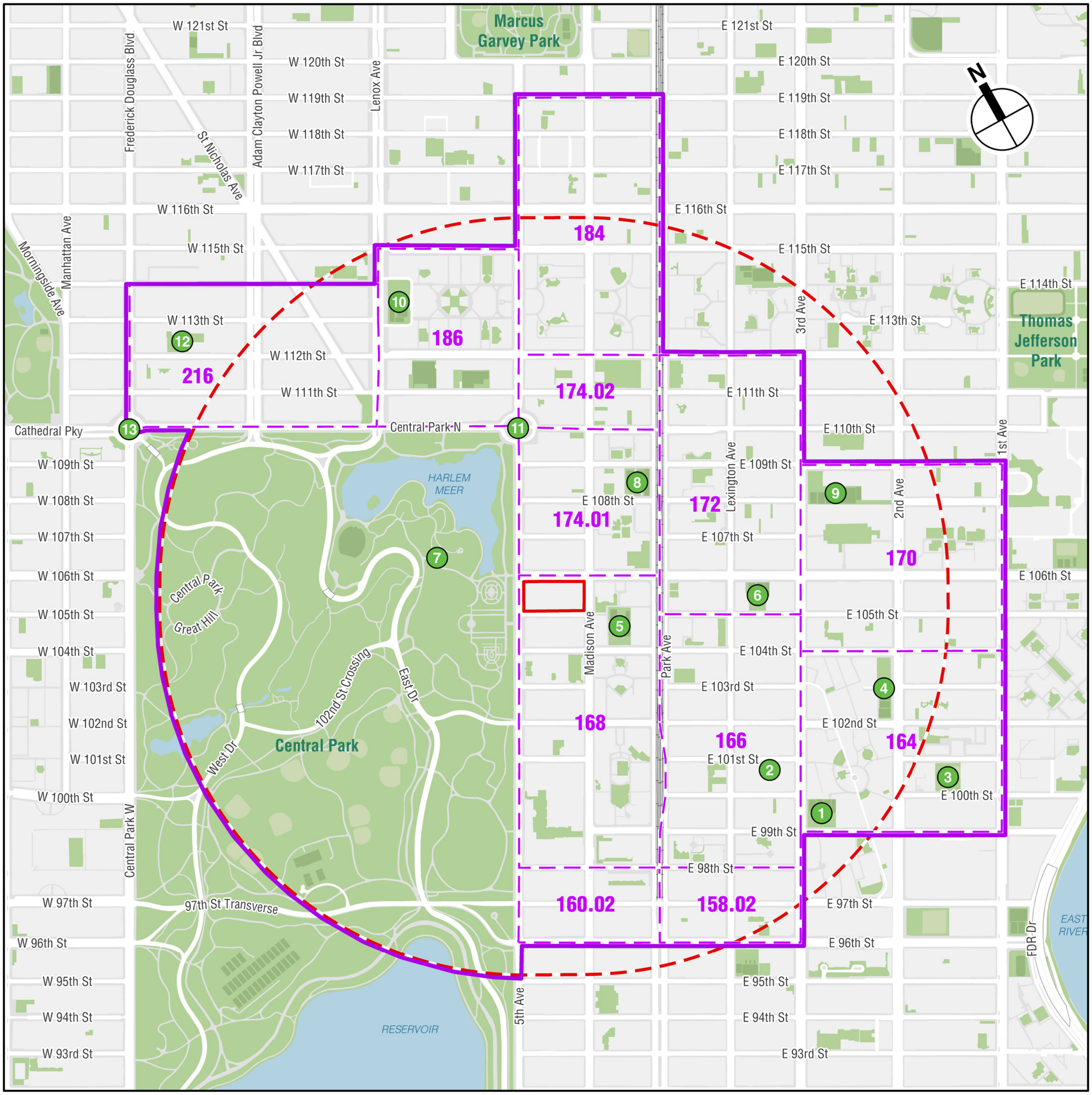
In With Action Scenario 2, the Proposed Actions would introduce an increment of approximately 166 DUs in the Project Area. Therefore, using the average household size of 2.41, the Proposed Actions would be expected to introduce approximately 401 residents to the Project Area and study area.

INVENTORY OF OPEN SPACE RESOURCES

All publicly accessible open spaces and recreational facilities located within the study area were inventoried using information from the New York City Department of Parks and Recreation (NYC Parks) and field visits conducted in June 2018.

The *CEQR Technical Manual* defines public open space as open space that is regularly open to the public during designated daily periods. Open spaces that do not fit this definition because they are not available to the public on a regular basis or are available only to a limited set of users are considered private open space and are not included in the quantitative open space analysis.

The character, condition, and use of the publicly accessible open spaces and recreational facilities within the study area were recorded during field visits. Active and passive amenities were noted



Project Area

Half-mile Boundary

168 Census Tracts

Open Space Study Area

1 Open Space Resources

Open Space Resources

1. Cherry Tree Park
2. Sunshine Playground
3. Harlem RBI
4. Blake Hobbs Playground
5. Mae Grant Playground
6. White Playground
7. Central Park
8. P.S. 108 Peter Minuit Playground
9. Poor Richard's Playground
10. Martin Luther King Jr., Playground
11. Duke Ellington Circle
12. P.S. 241 Playground
13. Frederick Douglass Circle

Open Space Study Area and Resources

TERENCE CARDINAL COOKE REZONING

Figure C-1

at each open space. Active facilities are intended for vigorous activities, such as jogging, field sports, and children's active play. Such facilities might include basketball and handball courts, jogging paths, ball fields, and playground equipment. Passive facilities encourage such activities as strolling, reading, sunbathing, and people watching. Passive open spaces are characterized by picnic areas, walking paths, or gardens. Certain areas, such as lawns or public esplanades, can serve as both active and passive open spaces.

The analysis also accounts for new open space within the study area that will be created in the No Action condition.

ADEQUACY OF OPEN SPACE RESOURCES

The following guidelines for residential populations are used for the open space analysis:

- A citywide median open space ratio of 1.500 acres per 1,000 residents. In New York City, local open space ratios vary widely, and the median ratio at the Community District level is 1.5 acres of open space per 1,000 residents.
- An open space planning goal established for the City of 2.500 acres per 1,000 residents—2.000 acres of active and 0.500 acres of passive open space per 1,000 residents—for large scale plans and proposals.

However, these goals are often not feasible for many areas of the City, and they are not considered an impact threshold. Rather, they are used as benchmarks to represent how well an area is served by its open space resources.

C. OPEN SPACE ASSESSMENT

An assessment of open space consists of calculating total population, tallying the open space acreage within the area, and comparing the OSRs for the No Action and With Action conditions.

EXISTING CONDITIONS

STUDY AREA POPULATION

Based on 2016 ACS 5-Year data, the ½-mile open space study area has a population of approximately 71,243 residents (see **Table C-1**).

Table C-1
Existing Residential Population—2016 ACS 5-Year

Census Tract	Residential Population
158.02	4,830
160.02	3,599
164	7,260
166	7,555
168	4,681
170	7,477
172	5,644
174.01	4,508
174.02	2,340
184	7,286
186	7,774
216	8,289
Total	**71,243**
Source: U.S. Census Bureau, 2016 ACS 5-Year	

STUDY AREA OPEN SPACE INVENTORY

There are 13 publicly accessible open spaces located within the study area (see **Figure C-1**). Eight of the open spaces are playgrounds, two of which are public school playgrounds (P.S. 108 and P.S. 241), primarily featuring basketball courts, handball courts, and playground space. Two open spaces consist of traffic circles that frame the northwestern and northeastern edges of Central Park (Frederick Douglass Circle and Duke Ellington Circle), which primarily contain passive seating areas. Additional open spaces include Harlem RBI, which contains baseball fields, and Cherry Tree Park, which contains greenery and benches, along with basketball, handball, and playground facilities. Finally, a significant portion of Central Park, a major destination park and open space resource (approximately 172 acres), is located within the study area and primarily contains passive open spaces such as the Conservatory Garden, The Ravine, The Loch, North Woods, Harlem Meer (lake), and Fort Clinton and Nutter's Battery lookouts (elevated locations above the Harlem Meer with viewing areas). Active open spaces include the Lasker Rink, North Meadow Recreation Center, four playgrounds, and sports fields (see **Table C-2**).

Most open space resources within the study area are in fair to good condition, with moderate use. The Martin Luther King, Jr. Playground is the only open space resource currently under rehabilitation.

Table C-2
Study Area Open Space Inventory

Map No.[1]	Name	Location	Owner	Total Acres	Active	Passive	Amenities	Condition/ Utilization
1	Cherry Tree Park	E. 99th St. to E. 100th St., Third Ave.	NYC Parks	0.95	0.85	0.10	Trees, plantings, benches, sculpture, basketball, handball, playground, and spray showers	Good/ Moderate
2	Sunshine Playground	E. 101st St between Lexington and Third Aves.	NYC Parks	0.24	0.05	0.19	Playground, seating areas	Poor/Low
3	Harlem RBI	E. 100th St between Second and First Aves.	NYC Parks	0.90	0.90	0.00	Baseball field	Good/ Moderate
4	Blake Hobbs Playground	E. 102nd St. to E. 104th St. and Second Ave.	NYC Parks	1.00	1.00	0.00	Basketball courts, handball courts, playgrounds	Fair/ Moderate
5	Mae Grant Playground	E. 104th St., Madison Ave. and Park Ave.	NYC Parks	0.97	0.87	0.10	Basketball courts, handball courts, playgrounds	Fair/Low
6	White Playground	E. 105th St. to E. 106th St. bet. Lexington Ave. and Third Ave.	NYC Parks	0.68	0.61	0.07	Basketball courts, handball courts, playgrounds	Excellent/ Moderate (New)
7	Central Park	Between 95th St. and 110th St., bet. Fifth Ave and Central Park West	NYC Parks	172.00	8.50	163.50	East Meadow, Robert Bendheim Playground, North Meadow/North Meadow Recreation Center, Conservatory Garden, Lasker Rink, Bernard Family Playground, West/East 110th Street Playground, Charles A. Dana Discovery Center, The Ravine, The Loch, North Woods, Harlem Meer, Fort Clinton, and Nutter's Battery	Excellent/ High
8	P.S. 108 Peter Minuit Playground	Park Ave. bet. E. 108th St. and E. 109th St.	NYC Parks/ DOE	0.94	0.94	0.00	Basketball courts, handball courts, playgrounds	Fair/ Moderate
9	Poor Richard's Playground	E. 109th St. bet. Second Ave. and Third Ave.	NYC Parks/ DOE	1.58	1.42	0.16	Basketball courts, bathrooms, handball courts, playgrounds, spray showers	Fair/ Moderate
10	Martin Luther King, Jr. Playground	Lenox Ave, W. 113th St. to W. 114th St.	NYC Parks	1.00	0.90	0.10	Basketball courts, bathrooms, handball courts, playgrounds, spray showers	Under Rehabilitation
11	Duke Ellington Circle	110th St and Fifth Ave.	NYC Parks	0.27	0.00	0.27	Statue, stairs/seating area	Good/Low
12	P.S. 241 Playground	240 West 113th St. bet. Frederick Douglass Blvd. and Seventh Ave.	DOE	0.66	0.55	0.11	Basketball court, running track, seating areas	Good/ Moderate
13	Frederick Douglass Circle	110th St. and Central Park West	NYC Parks	0.54	0.00	0.54	Seating areas, water feature	Good/Low
	Study Area Total			**181.73**	**16.59**	**165.14**		

Note:
See **Figure C-1** for open space resources.
DOE = Department of Education
Sources:
NYC Parks; AKRF Field Surveys, June 2018

ADEQUACY OF OPEN SPACES

Quantitative Considerations

The residential study area has a total of approximately 181.73 acres of open space (primarily passive). With an estimated population of 71,243 residents, the residential study area has a total open space ratio of 2.55 acres per 1,000 residents (see **Table C-3**). This is slightly higher than the City's goal of 2.5 total acres of open space per 1,000 residents and substantially higher than the citywide community district median of 1.5 acres per 1,000 residents.

Table C-3
Adequacy of Open Space Resources: Existing Conditions

Residential Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
71,243	181.73	16.59	165.14	2.55	0.23	2.32	2.50	2.00	0.50

The study area's active open space ratio is 0.23 acres per 1,000 residents, which is below the City's planning guideline of 2.0 acres per 1,000 residents. The study area's current residential passive open space ratio is 2.31 acres per 1,000 residents, which is above the City's benchmark of 0.5 acres of passive space per 1,000 residents.

FUTURE WITHOUT THE PROPOSED ACTIONS

STUDY AREA POPULATION

In the No Action condition, the study area will continue to experience residential and commercial development. There are 33 projects within the ½-mile residential study area that are expected to be completed by 2025. These 33 known development projects will add an estimated total of 2,247 DUs resulting in approximately 5,415 new residents in the study area. Altogether, when combined with the 1,031 residents introduced under the No Action condition on the Development Site, the study area population is expected to increase to 77,689 in the No Action condition.

STUDY AREA OPEN SPACES

In the No Action condition, no changes to the open space resources within the ½-mile study area are expected to be completed by 2025. Overall, the total open space acreage will remain 181.73 acres.

ADEQUACY OF OPEN SPACES

Quantitative Analysis

In the No Action condition, the increase in residents will slightly decrease the total open space ratio from 2.55 acres per 1,000 residents under existing conditions to 2.34 acres per 1,000 residents. The open space ratio will fall slightly below the City's goal of 2.5 total acres per 1,000 residents but above the City's median of 1.5 acres per 1,000 residents (see **Table C-4**). The active open space ratio will remain below the City's benchmark of 2.0 acres of active open space and above the benchmark of 0.5 acres of passive open space per 1,000 residents.

Table C-4
Adequacy of Open Space Resources: No Action Condition

Residential Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
77,689	181.73	16.59	165.14	2.34	0.21	2.13	2.50	2.00	0.50

FUTURE WITH THE PROPOSED ACTIONS

STUDY AREA POPULATION

The Proposed Actions would result in an incremental increase of approximately 166 DUs in With Action Scenario 2, resulting in an addition of 401 residents to the study area for a total residential population of 78,090.

STUDY AREA OPEN SPACES

The Proposed Actions would not result in any changes to the amount of open space within the ½-mile study area. The total open space acreage would remain 181.73 acres of active and passive space.

ADEQUACY OF OPEN SPACES

In With Action Scenario 2, the total and active ratios in the study area would remain below City guideline levels. The passive ratio would remain substantially above City guideline levels. As shown in **Table C-5**, the total open space ratio would be 2.33 acres per 1,000 residents, which is substantially above the citywide median open space ratio of 1.5 and slightly below the City's planning goal of 2.5 acres per 1,000 residents. The active open space ratio would continue to be 0.21 acres per 1,000 residents, below the City's guideline of 2.0 acres of active open space per 1,000 residents. The passive open space ratio would decrease to 2.11 acres per 1,000 residents, remaining substantially above the City's guideline of 0.5 acres of passive open space per 1,000 residents.

Table C-5
Adequacy of Open Space Resources:
No Action to With Action Scenario 2

Residential Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
78,090	181.73	16.59	165.14	2.33	0.21	2.11	2.50	2.00	0.50

IMPACT SIGNIFICANCE

As noted above and summarized in **Table C-6**, the total and active open space ratios in the study area would continue to fall short of the City's guidelines in With Action Scenario 2. The passive open space ratio would remain substantially above the City's guidelines. The total open space ratio would decrease by 0.43 percent (to 2.33 acres per 1,000 residents), the active open space ratio would remain the same, and the passive open space ratio would decrease by 0.94 percent (to 2.11 acres per 1,000 residents). Although the Proposed Actions would result in a slight decrease in the total and passive open space ratios from the No Action condition, these decreases would not approach or exceed the 5 percent threshold for a decrease in open space that would warrant a detailed open space analysis.

Table C-6
Open Space Ratios Summary:
With Action Scenario 2

Ratio	City Guideline	Open Space Ratios			Percent Change (No Action Condition to With Action Scenario 2)
		Existing Conditions	No Action Condition	With Action Scenario 2	
Residential (½-Mile) Study Area					
Total/Residents	2.50	2.55	2.34	2.33	-0.43%
Active/Residents	2.00	0.23	0.21	0.21	-0.00%
Passive/Residents	0.50	2.32	2.13	2.11	-0.94%
Note: Open space ratios in acres per 1,000 residents.					

D. CONCLUSION

Overall, the Proposed Actions would not result in significant adverse impacts on open space resources in the study area. ✷

A. INTRODUCTION

This attachment examines whether the Proposed Actions would result in a potential significant adverse shadow impact on any sunlight-sensitive resources. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, sunlight-sensitive resources of concern include publicly accessible open space, sunlight-dependent features of historic architectural resources, and natural resources that depend on sunlight. A shadow assessment is required for actions that would result in new structures or additions to existing structures at least 50 feet in height or when the structure or addition is located adjacent to a sunlight-sensitive resource.

As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").Under both scenarios, it is assumed that the FHH Building would remain as either a residential or community facility building. Scenario 1, which represents the Applicant's preferred scenario, would include the development of a 32-story residential building with a tower rising to 356 feet, including rooftop mechanical. Scenario 2 would include the development of a 34-story residential building with a tower rising to 396 feet, including rooftop mechanical, which would be positioned approximately 20 feet to the northwest of the tower built in Scenario 1.

This analysis assumes a scenario that combines both With Action scenarios and maximizes building heights and lot coverage throughout the Development Site (the "Shadow Assessment

Scenario”). The Shadow Assessment Scenario combines the larger bulk that would result from the hypothetical positioning of the two towers together (even though one tower is proposed in each scenario). The shadow cast by this scenario will have a greater expanse than either Scenario 1 or Scenario 2, considered individually, and ensures a conservative analysis. In the No Action condition, the Development Site would be developed with an L-shaped 20-story building with frontage along East 106th Street and Madison Avenue and an approximately 223-foot tower.

As discussed below, the detailed shadow analysis determined that the Shadow Assessment Scenario would result in incremental shadows on five sunlight-sensitive resources: 110th Street Block Association Garden, New York City Housing Authority’s (NYCHA) Carver Houses, Central Park, P.S. 108 Peter Minuit Playground, and Pueblo Unido Community Garden. With the exception of Central Park, none of the resources would be cast in more than 1 hour of incremental shadow. The limited incremental shadow would not significantly alter the usability or the public enjoyment of these resources and would not threaten the vitality of the vegetation they support. Central Park would experience longer durations of incremental shadow that would fall on many of the park’s sunlight-sensitive features located in its northeast corner. One of these features, the Conservatory Garden, supports a collection of plant species, many of which are not found anywhere else in Central Park. However, the incremental shadow on Central Park and the Conservatory Garden would be cast early in the morning when shadows move quickly from west to east, and all park area affected by incremental shadow would be in direct sunlight for the overwhelming majority of the afternoon. Because of this, the detailed analysis found that the usability of the park’s sunlight-sensitive features would not be significantly altered by incremental shadow cast in the Shadow Assessment Scenario and all vegetation, including vegetation located in the Conservatory Garden, would receive enough direct sunlight to sustain healthy growth.

The Shadow Assessment Scenario would cast incremental shadow on portions of the Carver Houses and its landscaped grounds, a historic resource. Incremental shadows cast on the Carver Houses are assessed because of the sunlight-sensitive features of this eligible historic resource. In addition, incremental shadow would be cast on portions of the recreational areas and playgrounds located within NYCHA’s Lehman Village. Open spaces within Lehman Village are specifically for use by NYCHA tenants and are not accessible to the public on a constant or regular basis; therefore, they are not considered publicly accessible open space resources in this analysis. Potential shadow effects on Lehman Village recreational areas are discussed below qualitatively, for informational purposes.

As detailed below, the Proposed Actions would not result in significant adverse shadow impacts to any sunlight-sensitive open space resources. In addition, no historic sunlight-sensitive resources would be affected by project-generated shadows.

B. DEFINITIONS AND METHODOLOGY

This analysis has been prepared in accordance with CEQR procedures and follows the guidelines of the *CEQR Technical Manual*.

DEFINITIONS

Incremental shadow is the additional, or new, shadow that a structure resulting from a proposed project would cast on a sunlight-sensitive resource.

Sunlight-sensitive resources are those resources that depend on sunlight or for which direct sunlight is necessary to maintain the resource’s usability or architectural integrity. Such resources generally include the following:

- *Public open space* such as parks, beaches, playgrounds, plazas, schoolyards (if open to the public during non-school hours), greenways, and landscaped medians with seating. Planted areas within unused portions of roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources.
- *Features of architectural resources that depend on sunlight for their enjoyment by the public.* Only the sunlight-sensitive features need be considered, as opposed to the entire resource. Such sunlight-sensitive features might include design elements that depend on the contrast between light and dark (e.g., recessed balconies, arcades, deep window reveals); elaborate, highly carved ornamentation; stained glass windows; historic landscapes and scenic landmarks; and features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as a historic landmark.
- *Natural resources* where the introduction of shadows could alter the resource's condition or microclimate. Such resources could include surface waterbodies, wetlands, or designated resources such as coastal fish and wildlife habitats.

Non-sunlight-sensitive resources include, for the purposes of CEQR:

- *City streets and sidewalks* (except Greenstreets);
- *Private open space* (e.g., front and back yards, stoops, vacant lots, and any private, non-publicly accessible open space);
- *Project-generated open space* cannot experience a significant adverse shadow impact from the project, according to the *CEQR Technical Manual*, because without the project the open space would not exist.

A significant adverse shadow impact occurs when the incremental shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources. Each case must be considered on its own merits based on the extent and duration of incremental shadow and an analysis of the resource's sensitivity to reduced sunlight.

METHODOLOGY

As discussed above, to ensure a conservative analysis, the maximum development bulk that could be developed on the Development Site as a result of the Proposed Actions was assessed. The Shadow Assessment Scenario combines the bulk of both With Action scenarios, maximizing building height, lot coverage, and tower lot coverage, and represents a worst-case for shadow analysis purposes, which would cast more expansive shadows than with Scenario 1 or Scenario 2, considered alone.

Following the guidelines of the *CEQR Technical Manual*, a preliminary screening assessment is first conducted to ascertain whether a project's shadow could reach any sunlight-sensitive resources at any time of year. The preliminary screening assessment consists of three tiers of analysis. The first tier determines the longest shadow that could be cast throughout the year by a project. If there are sunlight-sensitive resources within this area, the analysis proceeds to the second tier, which reduces the area that could be affected by project-generated shadow by accounting for the fact that shadows can never be cast between a certain range of angles south of the development site due to the path of the sun through the sky at the latitude of New York City.

If the second tier of analysis does not eliminate the possibility of incremental shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by project-generated shadow by looking at specific representative days in each season and determining the maximum extent of shadow over the course of each representative day.

If the third tier of analysis does not eliminate the possibility of incremental shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow resulting from the Shadow Assessment Scenario. The detailed analysis provides the data needed to assess the shadow impacts. The effects of the incremental shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The results of the analysis are documented with graphics, a table of incremental shadow durations, and narrative text.

C. PRELIMINARY SCREENING ASSESSMENT

A base map was developed using Geographic Information Systems (GIS)[1] showing the location of the structures developed under the Shadow Assessment Scenario and the surrounding street layout (see **Figure D-1**). In coordination with the land use and historic and cultural resources assessments presented in other attachments of this EAS, potential sunlight-sensitive resources were identified and shown on the map.

TIER 1 SCREENING ASSESSMENT

For the Tier 1 assessment, the longest shadow that could be cast was calculated, to establish the maximum shadow study area, which represents the area within which possible shadows could be cast under the Shadow Assessment Scenario and, using this length as a buffer, an oval was drawn around the Development Site. According to the *CEQR Technical Manual*, the longest shadow that a structure can cast at the latitude of New York City occurs on December 21, the winter solstice, and is equal to 4.3 times the height of the structure. The structures developed under the Shadow Assessment Scenario would rise to a maximum height of 396 feet (including mechanical space) above street level and would produce shadows up to 1,703 feet long (see **Figure D-1**). Several sunlight-sensitive open space and architectural resources are located within the longest shadow study area. Therefore, a Tier 2 assessment is required.

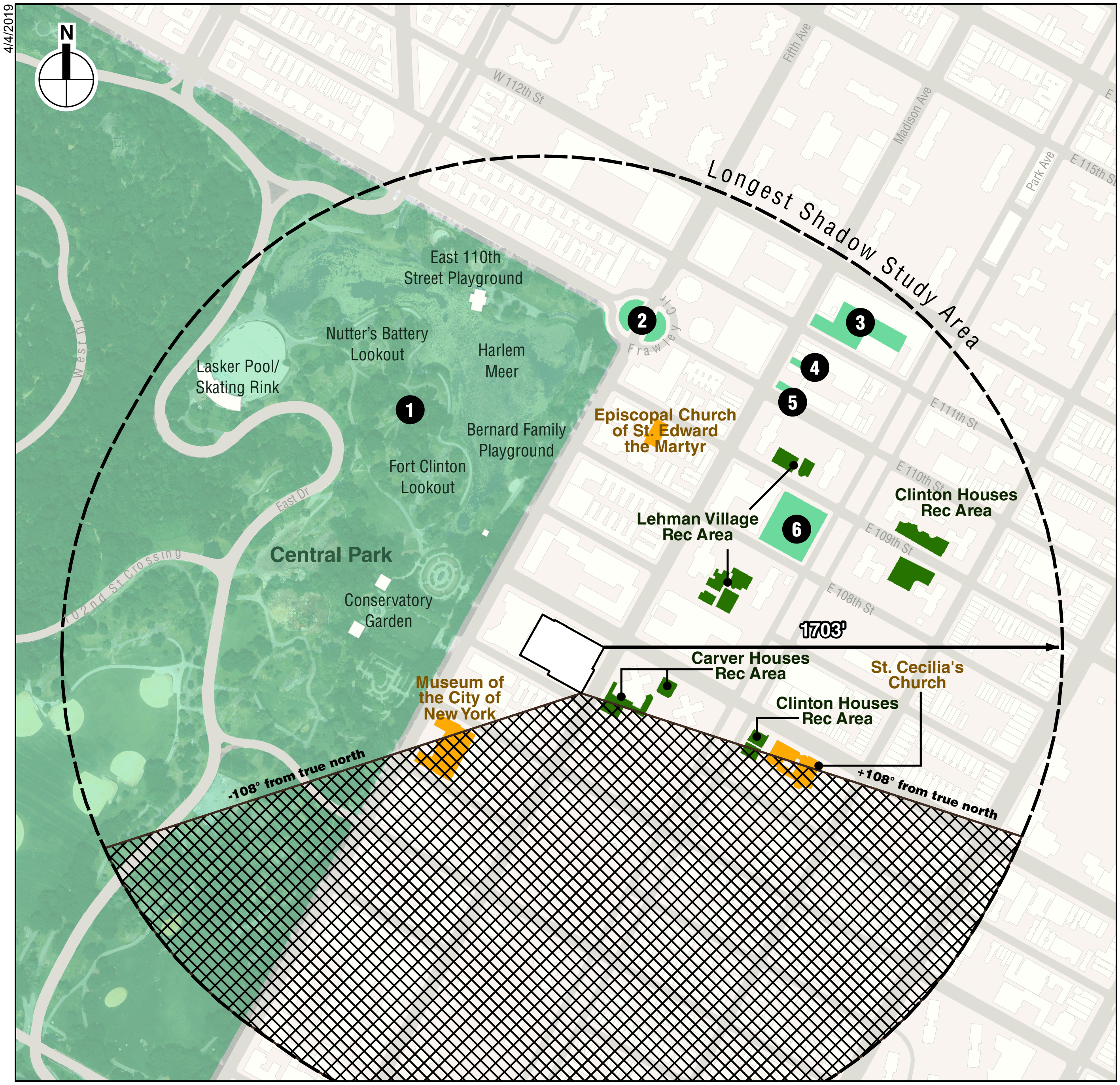
TIER 2 SCREENING ASSESSMENT

Because of the path that the sun travels across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given project site. In New York City, this area lies between -108 and +108 degrees from true north. **Figure D-1** illustrates this triangular area south of the Development Site. The complementing area to the north within the longest shadow study areas represents the remaining area that could potentially experience incremental shadow from the structures analyzed under the Shadows Assessment Scenario. As illustrated in **Figure D-1,** several sunlight-sensitive open space and architectural resources are located within the Tier 2 study area. Therefore, a Tier 3 assessment was required to model shadows on these resources on specific representative days of the year.

TIER 3 SCREENING ASSESSMENT

The direction and length of shadows vary throughout the course of the day and differ depending on the season. In order to determine whether project-generated shadow could fall on a sunlight-

[1] Software: Esri ArcGIS 10.3; Data: New York City Department of Information Technology and Telecommunications (DoITT) and other City agencies, and AKRF site visits.



1. Central Park
2. Duke Ellington Circle
3. Sendero Verde Future Open Space
4. Pueblo Unido Community Garden
5. 110th Street Block Association Garden
6. PS 108 Peter Minuit Playground

- Development Site
- Tier 1: Shadow Assessment Scenario longest shadow study area
- Tier 2: Area south of site that could never be shaded by proposed building
- Historic Resource with Sunlight-Sensitive Features
- Sunlight-Sensitive Public Open Space Resource
- Other Open Space Resource

0 500 FEET

TERENCE CARDINAL COOKE REZONING

Tier 1 and Tier 2 Assessments

Figure D-1

sensitive resource, three-dimensional computer mapping software is used in the Tier 3 assessment to calculate and display the path of potential shadow cast under the Shadow Assessment Scenario. A computer model was developed containing three-dimensional representations of the elements in the base map used in the preceding assessments, the topographic information of the study area, and the massing of the building developed under the Shadow Assessment Scenario.

REPRESENTATIVE DAYS FOR ANALYSIS

Following the guidance of the *CEQR Technical Manual*, shadows on the summer solstice (June 21), winter solstice (December 21), and spring and fall equinoxes (March 21 and September 21, which are approximately the same in terms of shadow patterns) are modeled, to represent the range of shadows over the course of the year. An additional representative day during the growing season is also modeled, the day halfway between the summer solstice and the equinoxes, i.e., May 6 or August 6, which have approximately the same shadow patterns.

TIMEFRAME WINDOW OF ANALYSIS

The shadow assessment considers shadows occurring between 90 minutes after sunrise and 90 minutes before sunset. Within the 90 minutes after sunrise and the 90 minutes before sunset, the sun is low on the horizon, and its rays reach the vicinity of the Development Site at low angles, producing shadows that are very long, move fast, and generally blend with shadows from existing structures until the sun reaches the horizon and sets. Consequently, shadows occurring in these two 90-minute periods are not considered significant under CEQR, and their assessment is not required.

TIER 3 SCREENING ASSESSMENT RESULTS

Figures D-2 and D-3 illustrate the range of shadows that would occur (in the absence of intervening buildings), from the Shadow Assessment Scenario on the 4 representative analysis days. The extent of shadow is shown between the start of the analysis day (90 minutes after sunrise) and the end of the analysis day (90 minutes before sunset). The Tier 3 assessment finds the shadows cast in the Shadow Assessment Scenario, and in the absence of intervening buildings, would be long enough to reach at least one sunlight-sensitive resource on each analysis day. Therefore, a detailed shadow analysis was required.

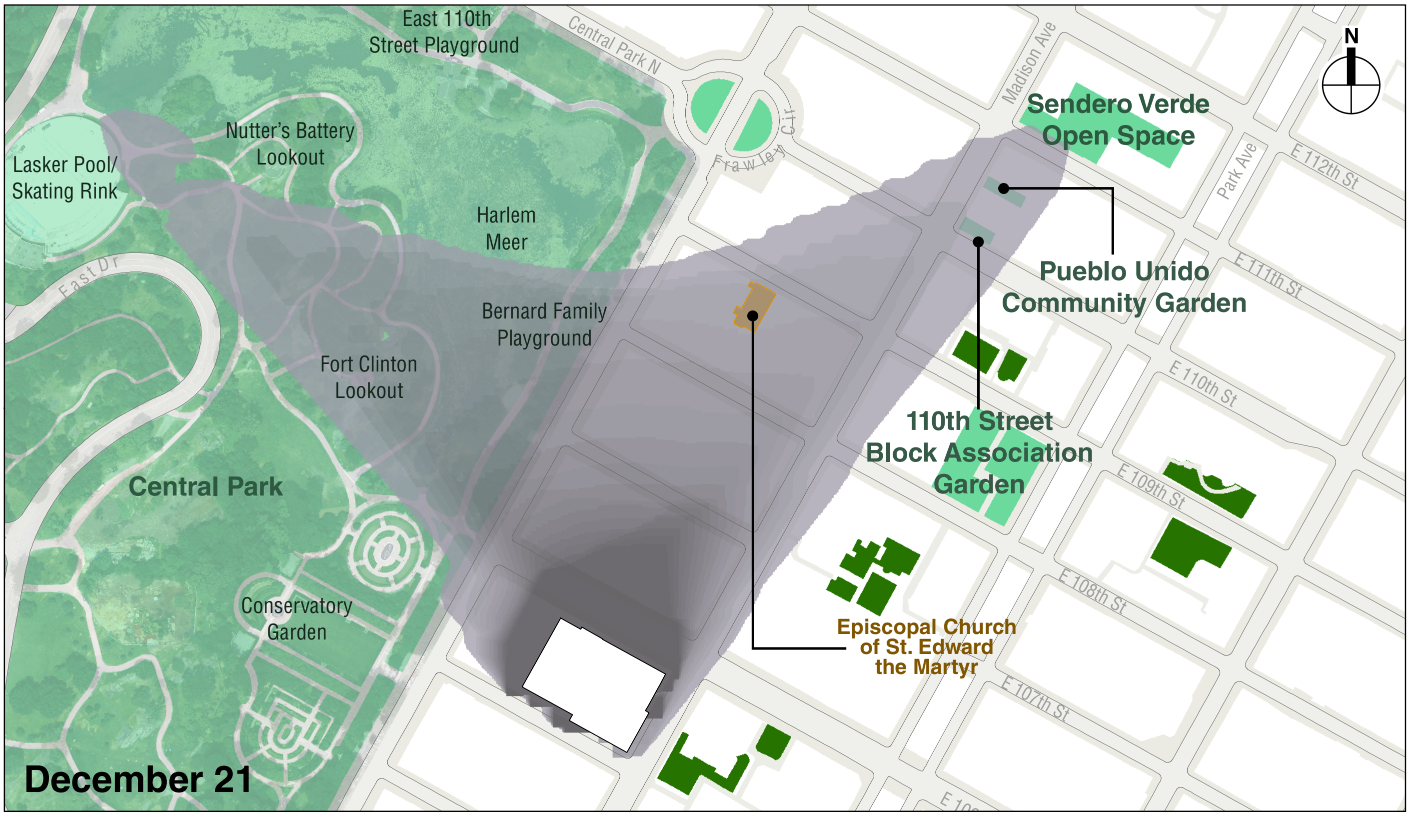
D. DETAILED ANALYSIS

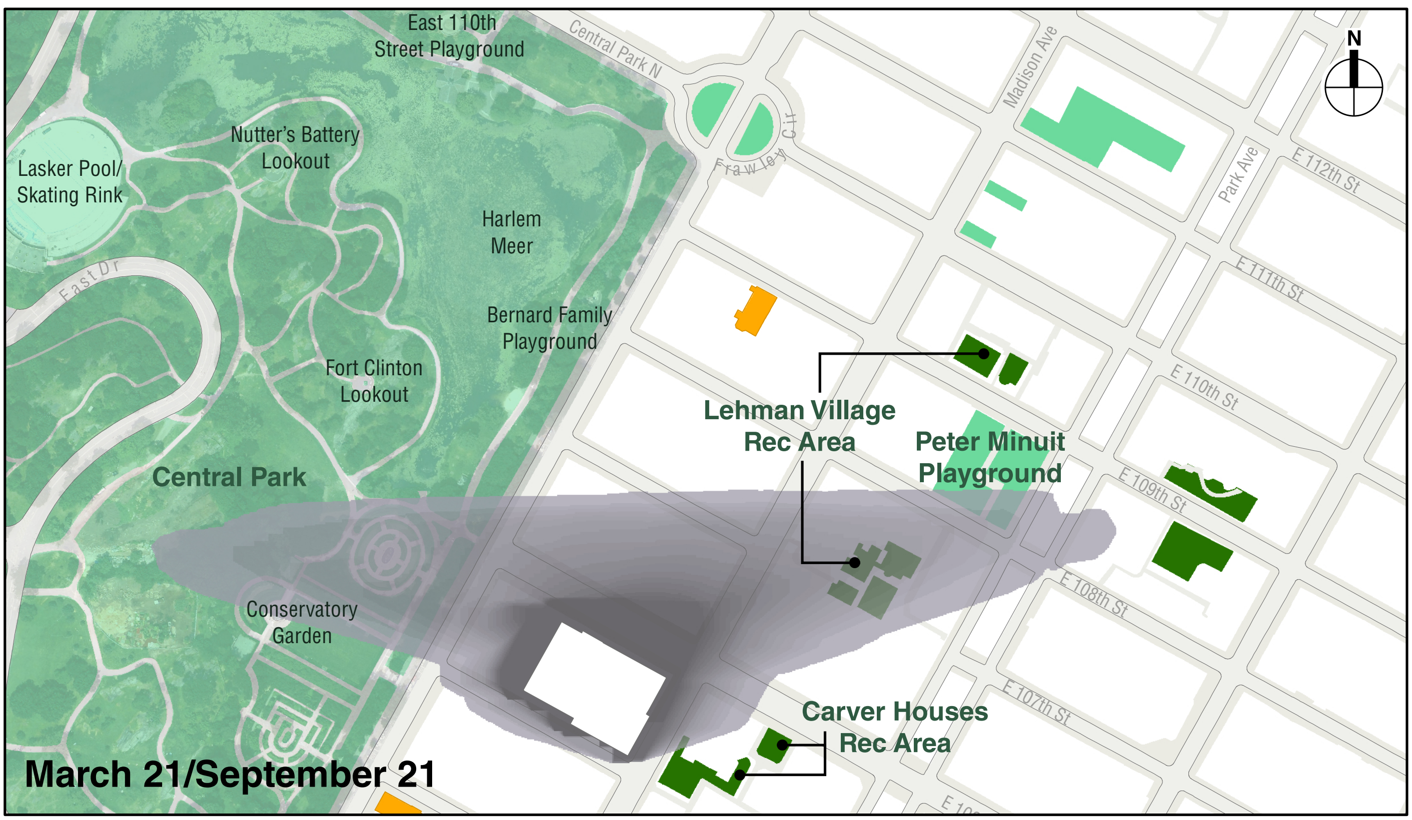
The purpose of the detailed shadow analysis is to determine the extent and duration of incremental shadows that would fall on the sunlight-sensitive resources identified in the Tier 3 assessment. To complete the analysis, three-dimensional representations of the existing buildings, relative planned future developments, and the anticipated structure occupying the Development Site in the No Action condition are appended to the Tier 3 assessment model. The shadows cast in the No Action condition can then be compared with those cast in the Shadow Assessment Scenario.

Absent the Proposed Actions, it is assumed that the Development Site will be programmed with an L-shaped 20-story building with frontage along East 106th Street and Madison Avenue.

ANALYSIS RESULTS

The detailed shadow analysis finds that the Shadow Assessment Scenario would result in incremental shadow on Central Park, P.S. 108 Peter Minuit Playground, the Pueblo Unido Community Garden, and the 110th Street Block Association Garden—all publicly accessible





Daily Shadow Extent

Development Site

Sunlight-Sensitive Public Open Space Resource

Other Open Space Resource

Historic Resource with Sunlight-Sensitive Features

Notes:
1. Daylight Saving Time not used.
2. Shadows are shown occurring at approximately one hour intervals from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed project's shadow across the landscape, without accounting for any existing buildings and their shadows.

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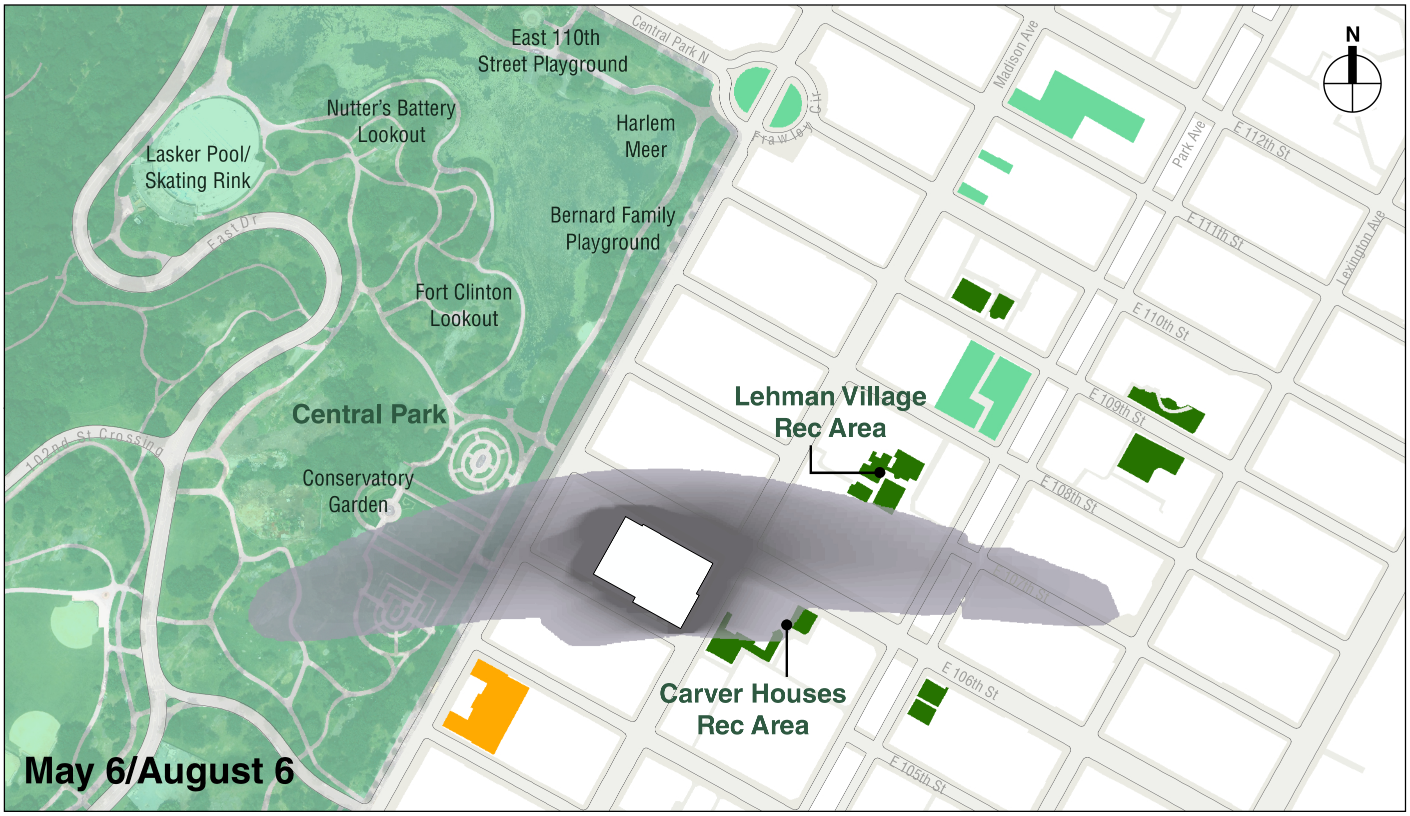
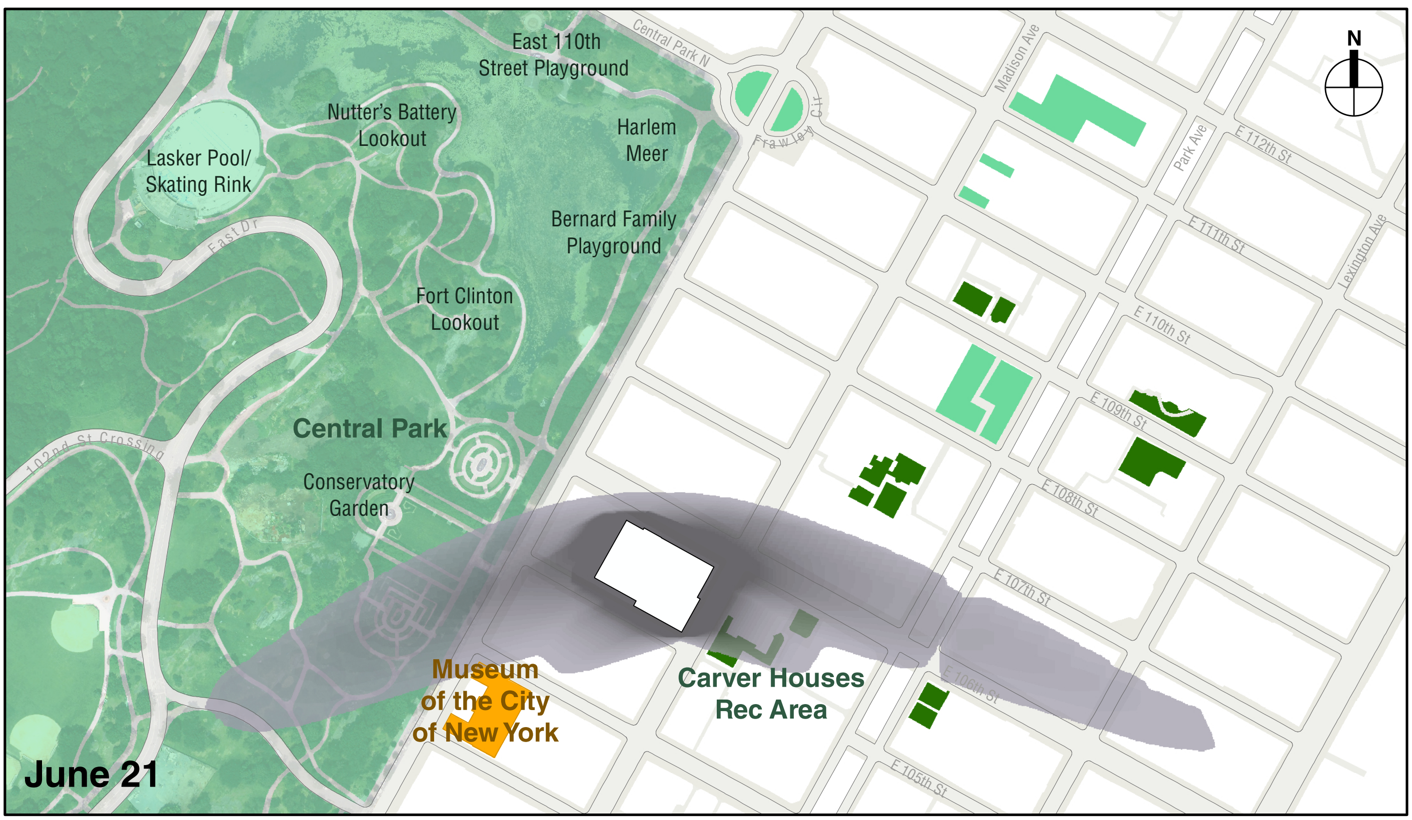
Tier 3 Assessment

Figure D-2





Daily Shadow Extent

Development Site

Sunlight-Sensitive Public Open Space Resource

Other Open Space Resource

Historic Resource with Sunlight-Sensitive Features

Notes:
1. Daylight Saving Time not used.
2. Shadows are shown occurring at approximately one hour intervals from the start of the analysis day (one and a half hours after sunrise) to the end of the analysis day (one and a half hours before sunset). The Tier 3 assessment serves to illustrate the daily path or "sweep" of the proposed project's shadow across the landscape, without accounting for any existing buildings and their shadows.

0 500 FEET

TERENCE CARDINAL COOKE REZONING

Tier 3 Assessment
Figure D-3

sunlight-sensitive open space resources, and NYCHA's Carver Houses and associated open space, an eligible historic resource. Landscaped grounds associated with NYCHA developments are not considered publicly accessible open spaces. However, as discussed in more detail below, the Carver Houses open space is assessed because NYCHA's Carver Houses complex, including its landscaped grounds, is eligible for listing on the State and National Registers of Historic Places (S/NR).

SUNLIGHT-SENSITIVE PUBLIC OPEN SPACE RESOURCES

Table D-1 shows the entry and exit times and total duration of incremental shadow originating from the Shadow Assessment Scenario on the affected resources.

Table D-1
Incremental Shadow Durations (Shadow Assessment Scenario)

Analysis Day and Timeframe Window	December 21 8:51 AM–2:53 PM	March 21 / Sept. 21 7:36 AM–4:29 PM	May 6 / August 6 6:27 AM–5:18 PM	June 21 5:57 AM–6:01 PM
Parks				
Central Park	8:51 AM–12:00 PM Total: 3 hr 9 min	7:36 AM–10:30 AM Total: 2 hr 59 min	6:27 AM–8:50 AM Total: 2 hr 23 min	5:57 AM–8:05 AM Total: 2 hr 8 min
P.S. 108 Peter Minuit Playground	—	3:55 PM–4:25 PM Total: 30 min	—	—
Community Gardens and NYCHA Grounds				
110th Street Block Association Garden	2:20 PM–2:53 PM Total: 33 min	—	—	—
Pueblo Unido Community Garden	2:30 PM–2:53 PM Total: 23 min	—	—	—
Carver Houses[1]	—	3:30 PM–4:29 PM Total: 59 min	3:25 PM–5:18 PM Total: 1 hr 53 min	3:30 PM–6:01 Total: 2 hr 31 min

Notes:
Table indicates entry and exit times and total duration of incremental shadow for each sunlight-sensitive resource. Daylight savings time is not used—times are Eastern Standard Time (EDT), per *CEQR Technical Manual* guidelines. However, as EDT is in effect for the March/September, May/August, and June analysis periods, add 1 hour to the given times to determine the actual clock time.
[1] The Carver Houses open space is being assessed in this EAS because of its historic significance and not because it is considered a publicly accessible open space.

Figures D-4 through D-21 illustrate the placement of incremental and No Action condition shadow on the affected resources at representative times of each analysis day. If the total duration of incremental shadow on a resource is less than 10 minutes a day, a figure is not included, as these shadows are considered too short to result in a significant shadow impact on the resource. The area of the resource affected by incremental shadow is illustrated in red. Resources that are cast in a total duration for more than 2 hours of incremental shadow are accompanied by an additional figure illustrating the placement of incremental shadow on the resource over the course of an entire day and the total duration of sunlight received by the resource in the With Action and No Action conditions. Below is a description of each of the resources and the duration and extent of incremental shadow.

CENTRAL PARK

Central Park is a large, 840-acre publicly accessible destination park operated by the New York City Department of Parks and Recreation (NYC Parks) in the center of Manhattan. The northeastern section of the park nearest to the Development Site, a section located approximately within the boundaries of Fifth Avenue, Central Park's East Drive, West 102nd Street, and West 110th Street, contains several sunlight-sensitive park open space features. These sunlight-sensitive features include open grassy areas used for passive recreational uses, benches and landscaping found along pathways, and the Harlem Meer, a small lake. Individual sunlight-sensitive locations within the park include the Conservatory Garden, a 6-acre formal garden arranged in English, French, and Italian styles containing numerous flowers and other plants; the Fort Clinton and Nutter's Battery lookouts, elevated locations above the Harlem Meer with viewing areas; the recently renovated East 110th Street Playground to the north of the Harlem Meer, containing spray showers, benches, and playground equipment; the Bernard Family Playground just west of Fifth Avenue, containing benches and playground equipment; and the Lasker Pool and Rink, which provides for ice-skating in the winter and swimming in the summer.

In the Shadow Assessment Scenario, this northeastern section of Central Park would be cast in incremental shadow on each of the 4 analysis days.

*December 21 (see **Figures D-4 and D-5**)*

At the beginning of the analysis day (8:51 AM), a band of incremental shadow would be cast on the area of Central Park containing the Fort Clinton lookout extending west to the northern edge of the Lasker Pool and Rink. As the morning progresses, incremental shadow would shorten in length and move slightly to the northeast as the day continues, passing over the Harlem Meer before exiting the eastern border of the park near the Bernard Family Playground at 12:00 PM. During this approximately 3-hour timeframe, incremental shadow would remain longest on the Harlem Meer, which would experience approximately 60 minutes of incremental shadow.

*March 21/September 21 (see **Figures D-6 and D-7**)*

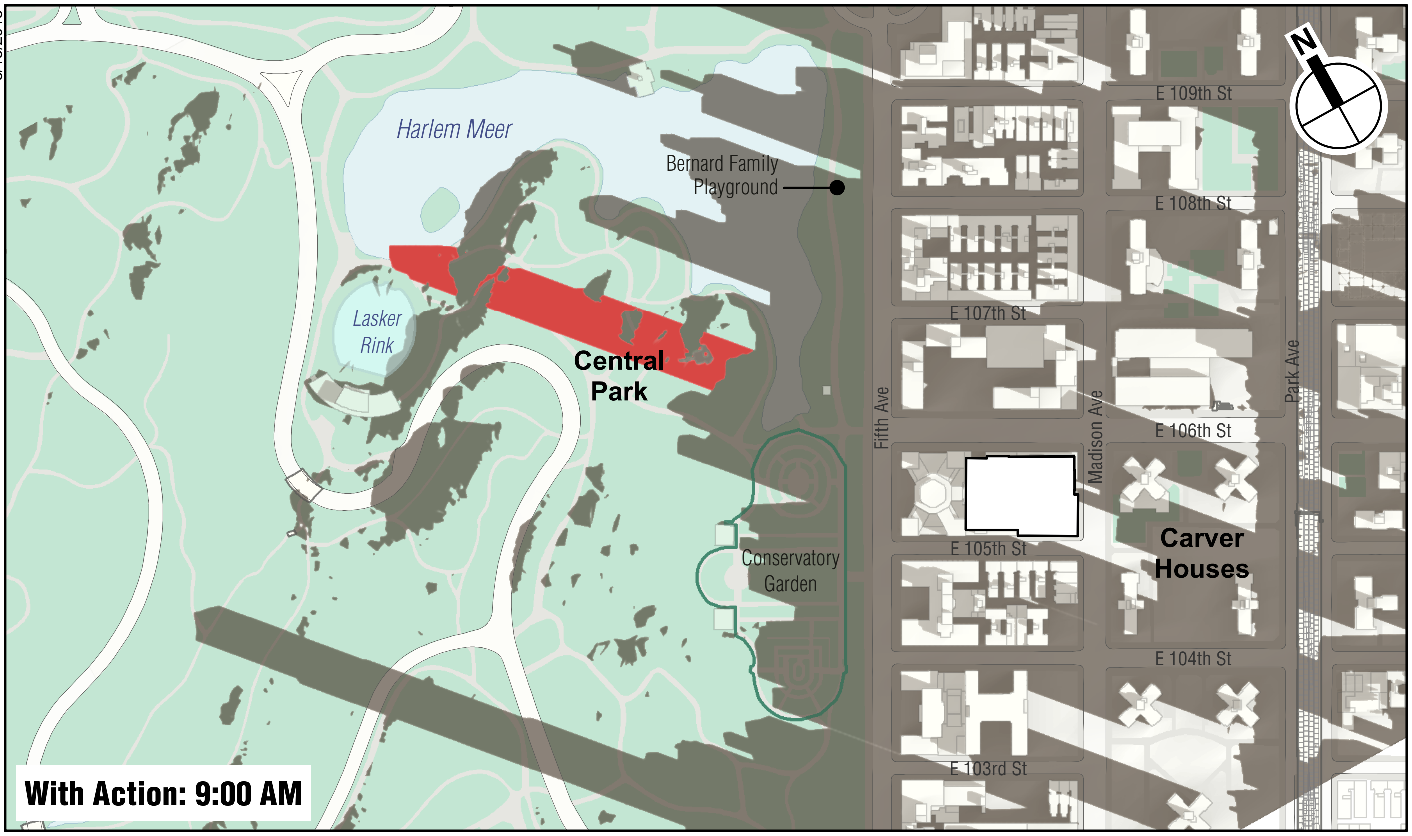
Beginning at the start of the analysis day (7:36 AM), incremental shadow would be cast on the westernmost section of the Conservatory Garden and the forested area to its west. The extent of the incremental shadow would gradually decrease over time as it moves to the northeast, passing over the northern section of the Conservatory Garden, before exiting the park to the northeast at 10:30 AM. During this approximately 3-hour timeframe the shadow would move steadily across the park and would not cast shadow on any one area of the park or garden for more than 45 minutes.

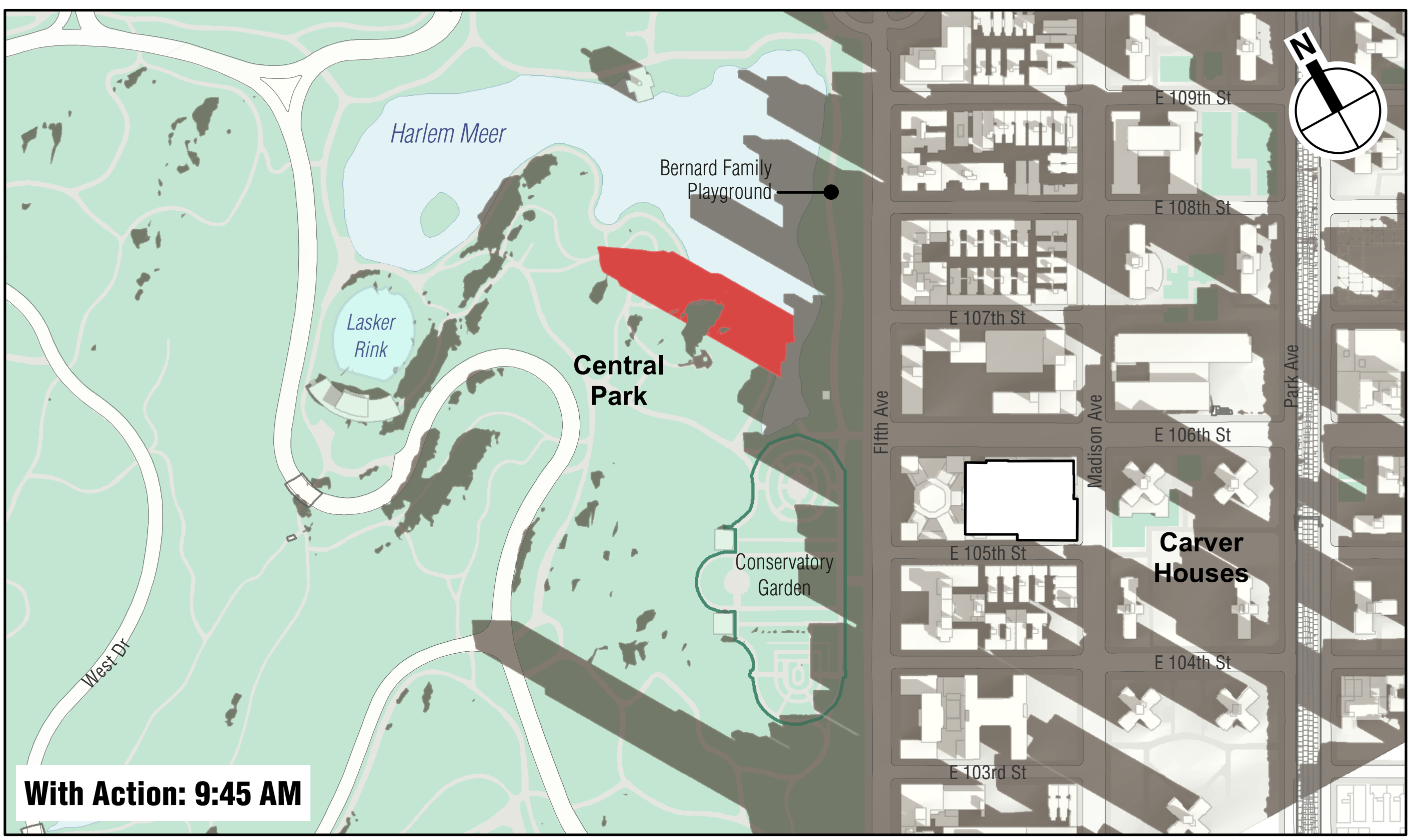
*May 6/August 6 (see **Figures D-8 and D-9**)*

Beginning at the start of the analysis day (6:27 AM), incremental shadow would be cast on the southern and central sections of the Conservatory Garden and adjacent areas of Central Park. Over the next 2 hours and 23 minutes, the size of the incremental shadow would decrease as it moves north and east, passing over the southern and central sections of the Conservatory Garden before exiting the eastern border of Central Park at 8:50 AM, directly west of the Development Site. During this timeframe the shadow would move steadily across the park and would not cast shadow on any one area of the park or garden for more than 50 minutes.

*June 21 (see **Figures D-10 and D-11**)*

Beginning at the start of the analysis day (5:57 AM), incremental shadow would be cast on the southern and central sections of the Conservatory Garden and adjacent areas of Central Park. Over the next 2 hours and 8 minutes, the size of the incremental shadow would decrease as it moves north and east, passing over the southern sections of the Conservatory Garden before exiting the eastern border of Central Park at 8:05 AM, directly west of the Development Site. During this timeframe the shadow would move steadily across the park and would not cast shadow on any one area of the park or garden for more than 65 minutes.





Area of Open Space in New Shadow

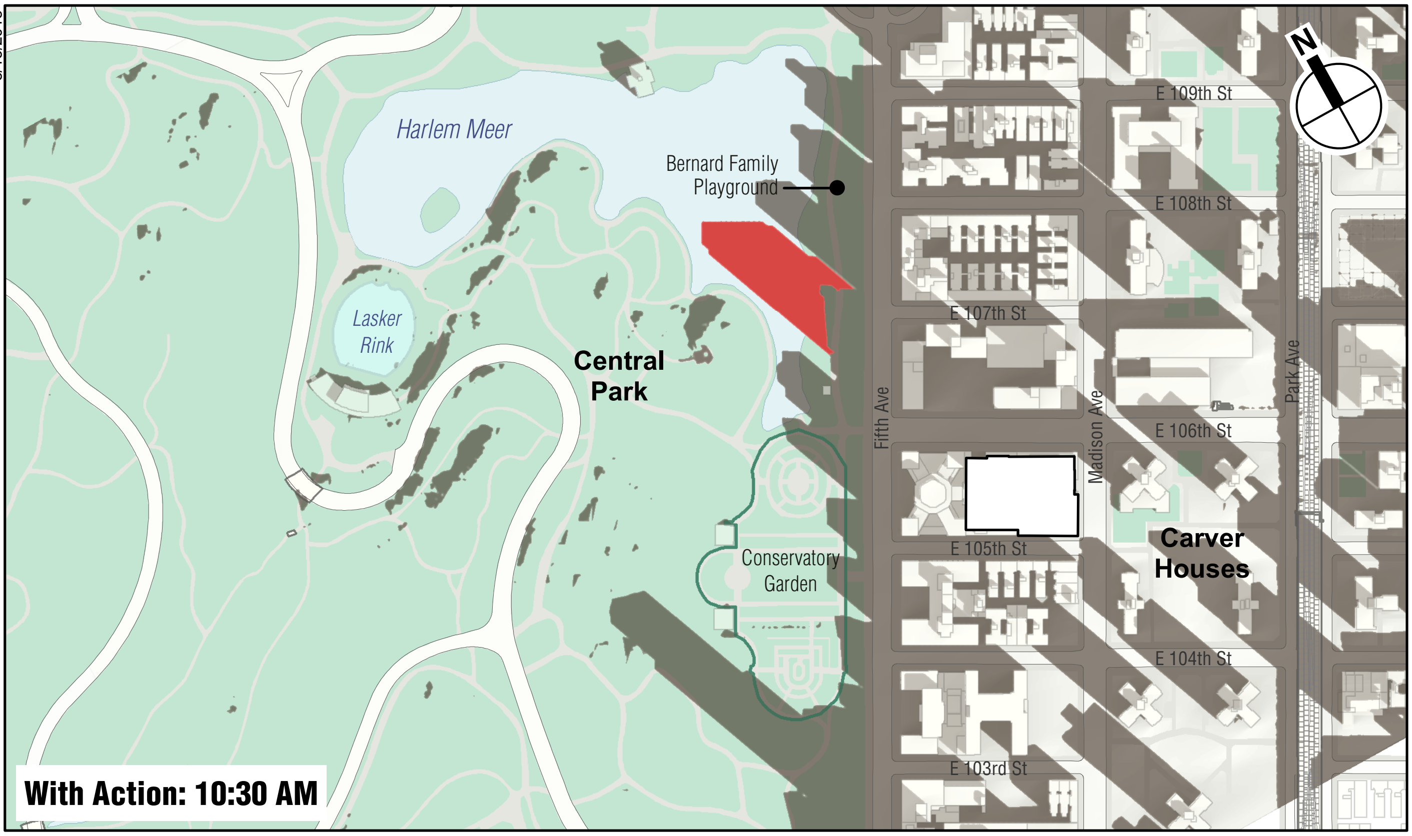
Development Site

0 400 FEET

TERENCE CARDINAL COOKE REZONING

December 21

Figure D-4



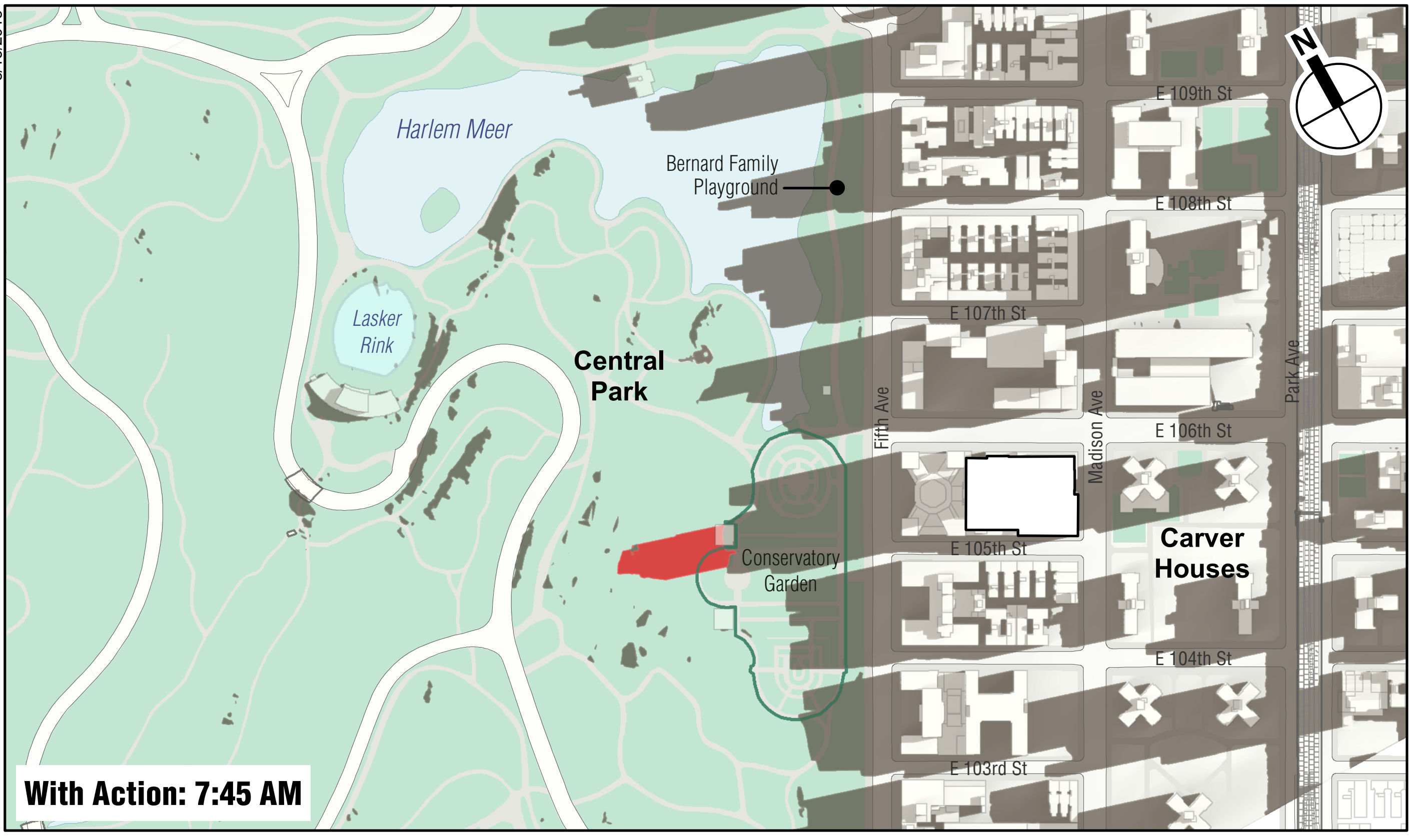
Area of Open Space in New Shadow

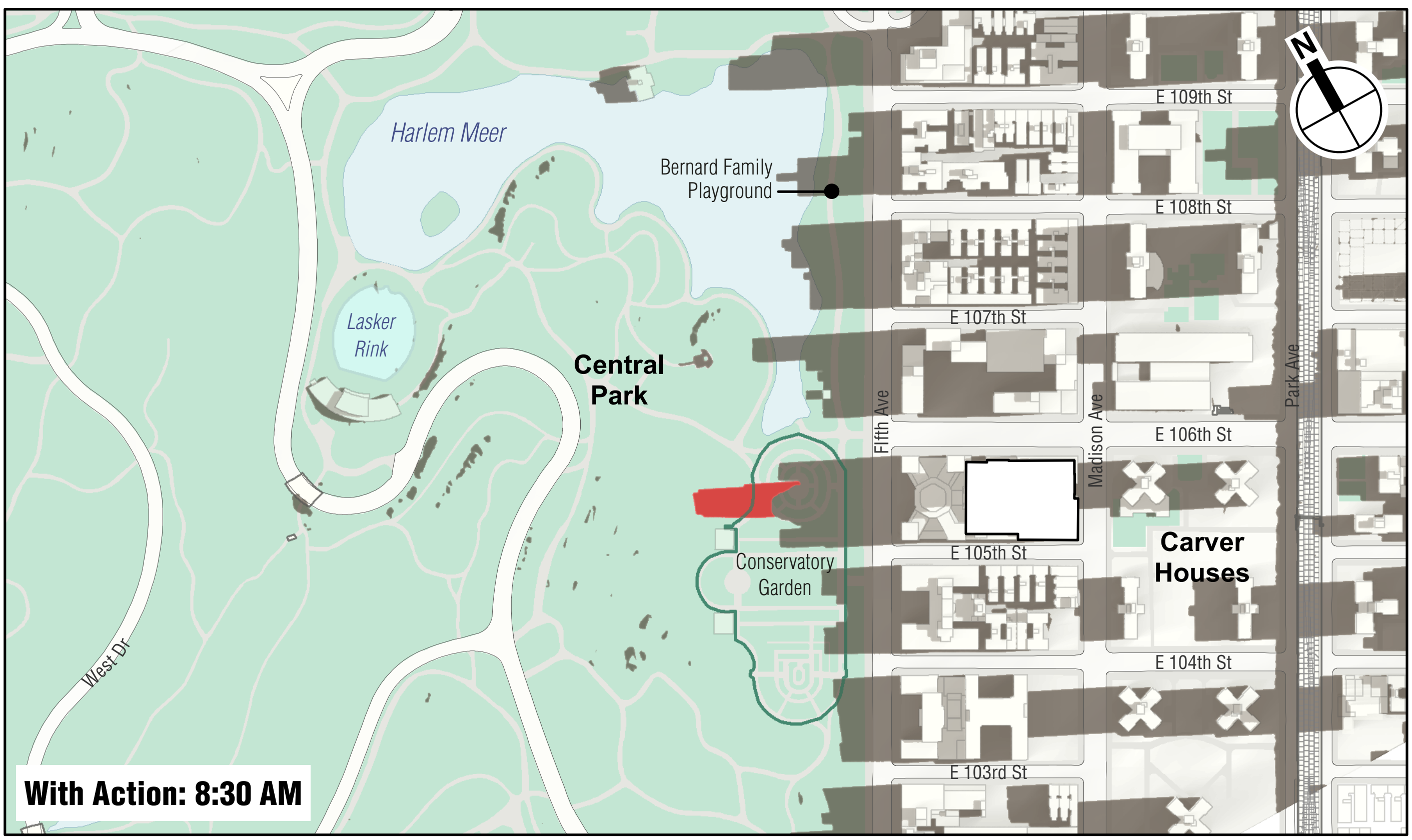
Development Site

0 400 FEET

December 21
Figure D-5

8/15/2018





Area of Open Space in New Shadow

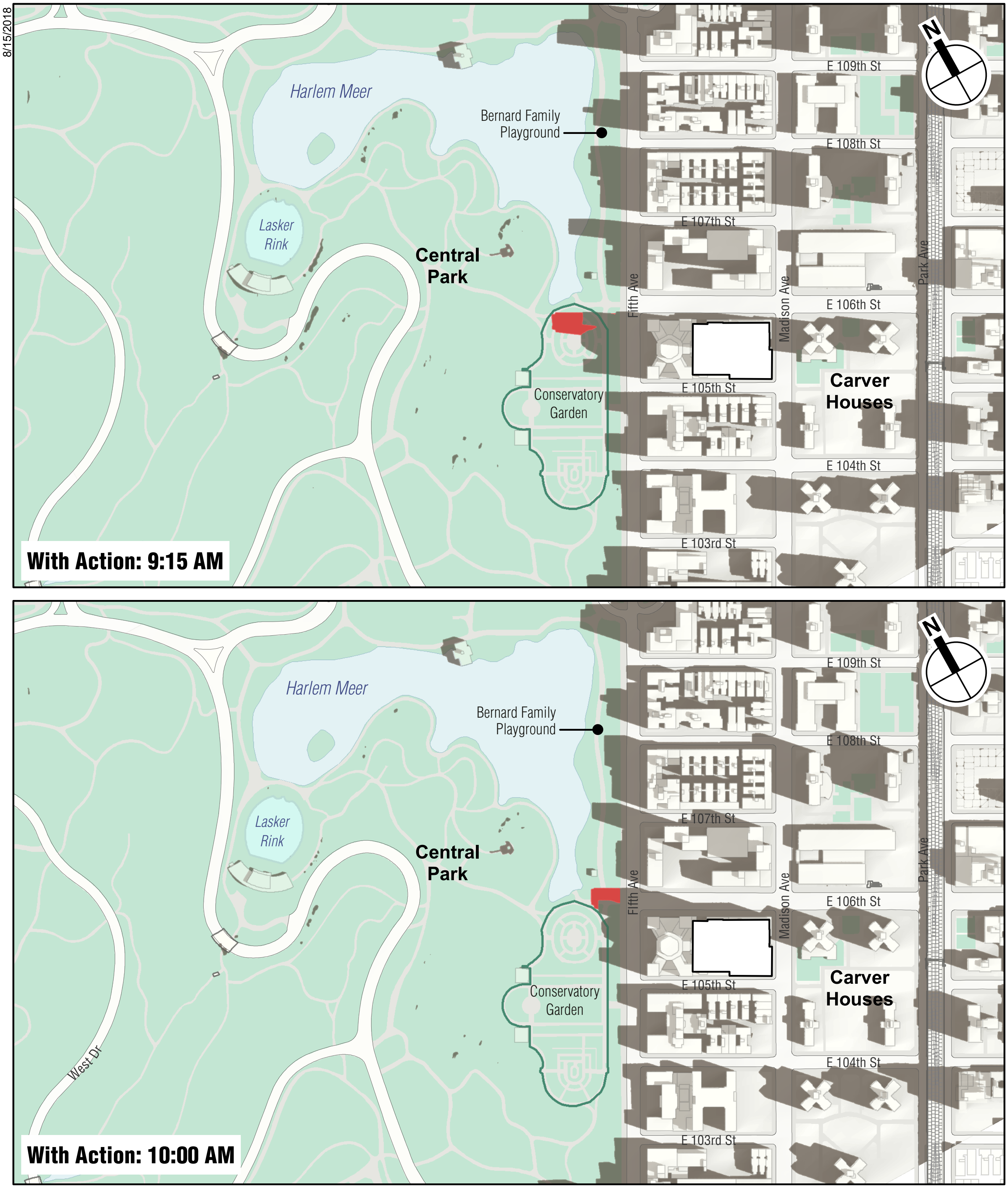
Development Site

0 400 FEET

March 21/September 21

Figure D-6

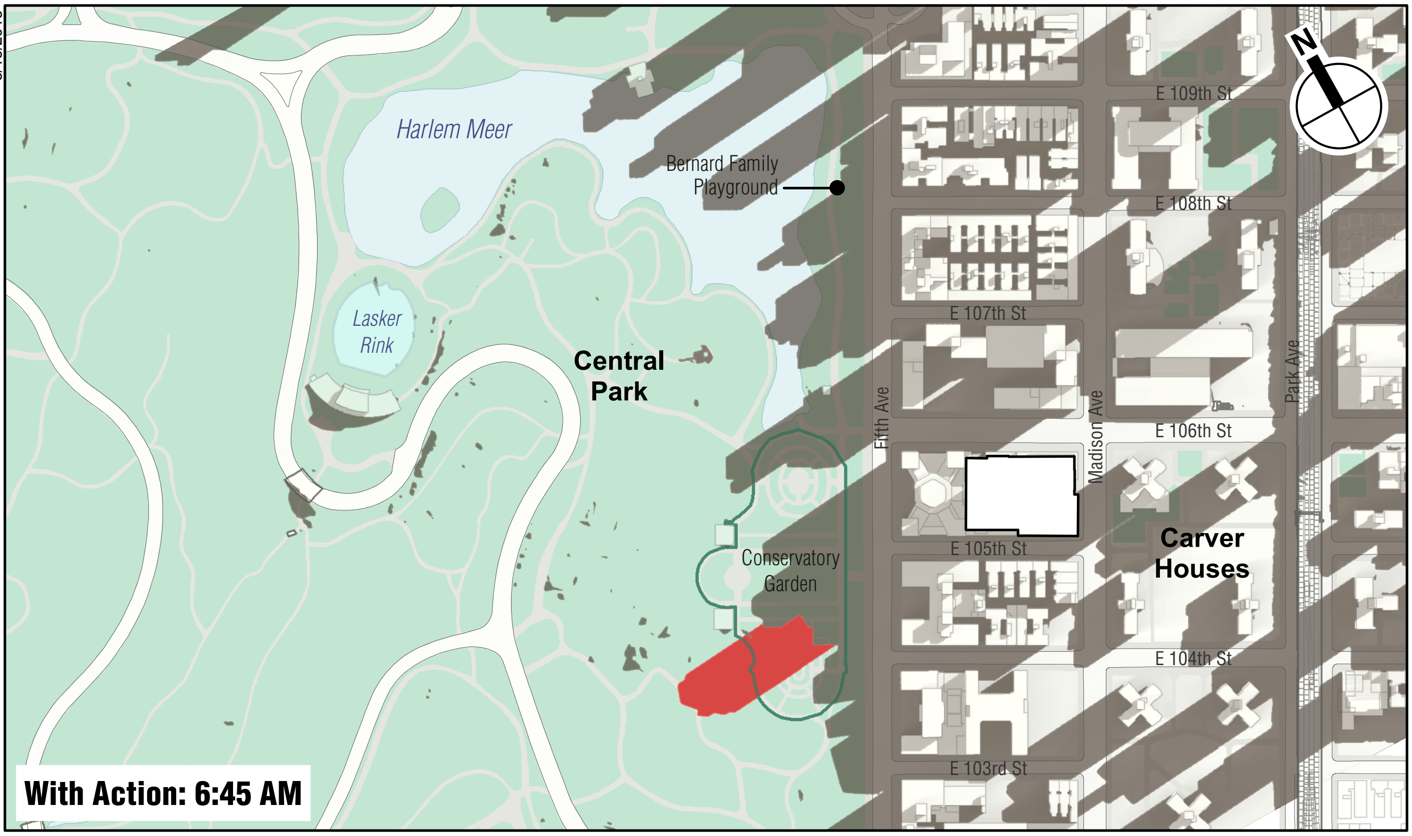
8/15/2018

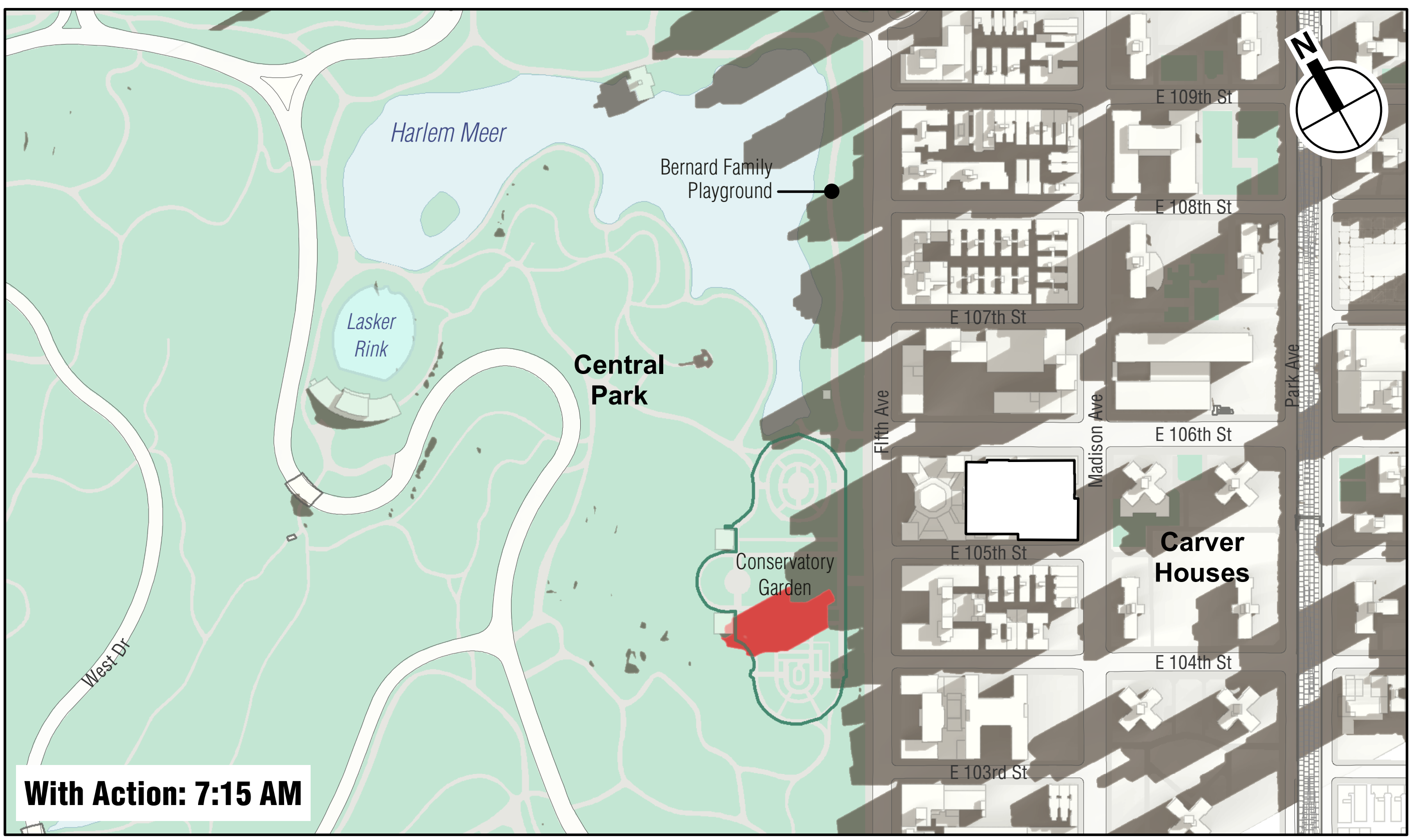


Area of Open Space in New Shadow

Development Site

0 400 FEET





Area of Open Space in New Shadow

Development Site

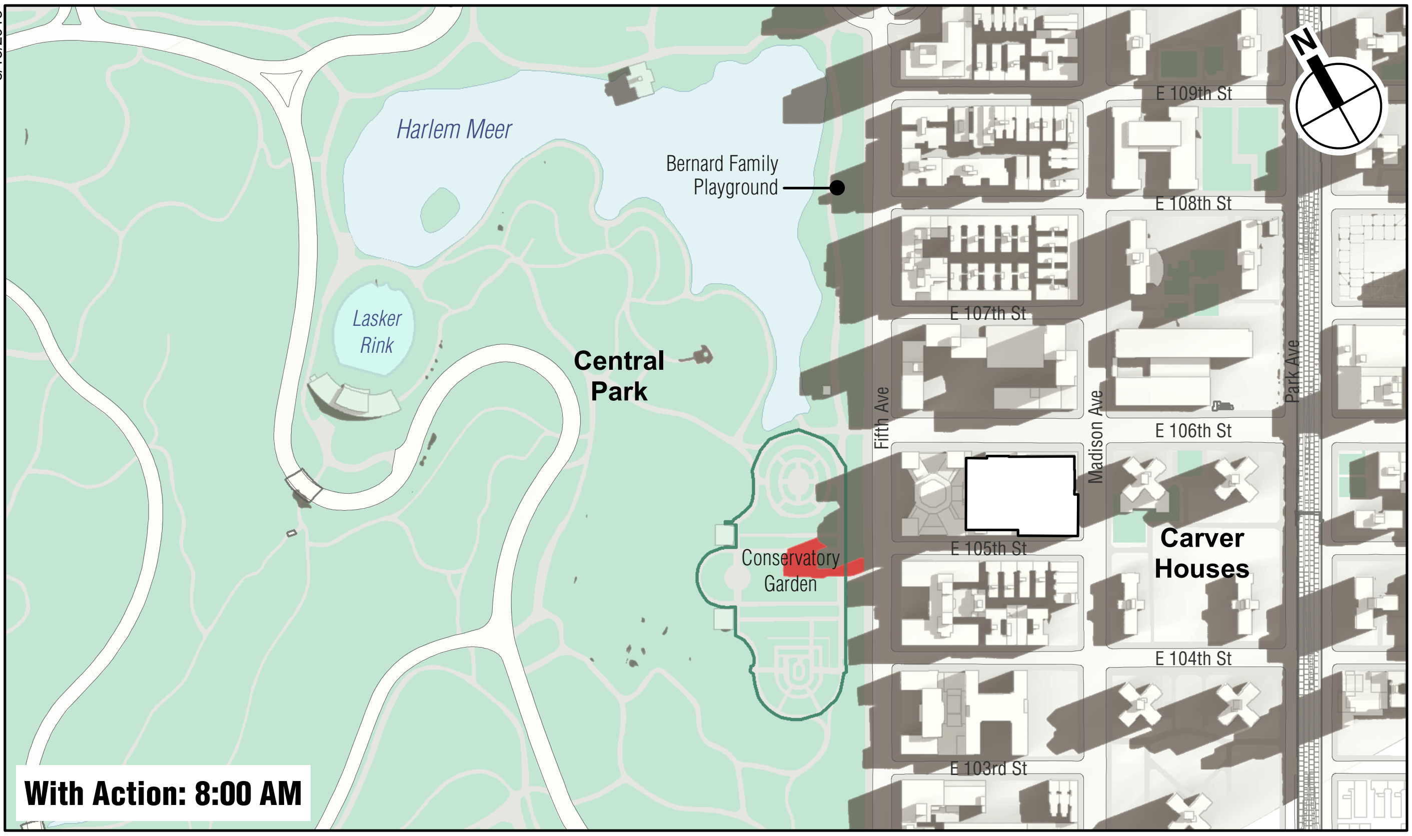
0 400 FEET

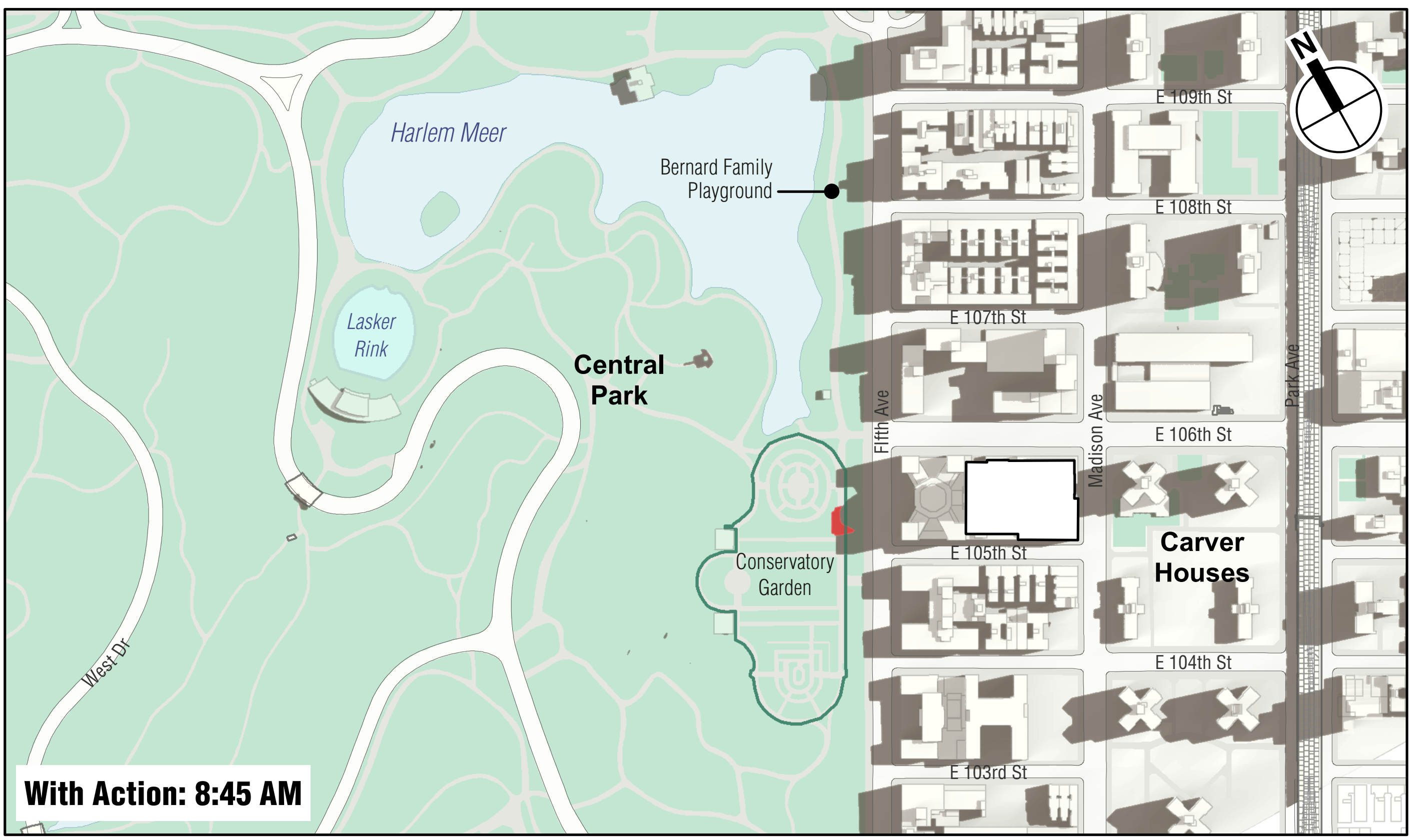
TERENCE CARDINAL COOKE REZONING

May 6/August 6

Figure D-8

8/15/2018





Area of Open Space in New Shadow

Development Site

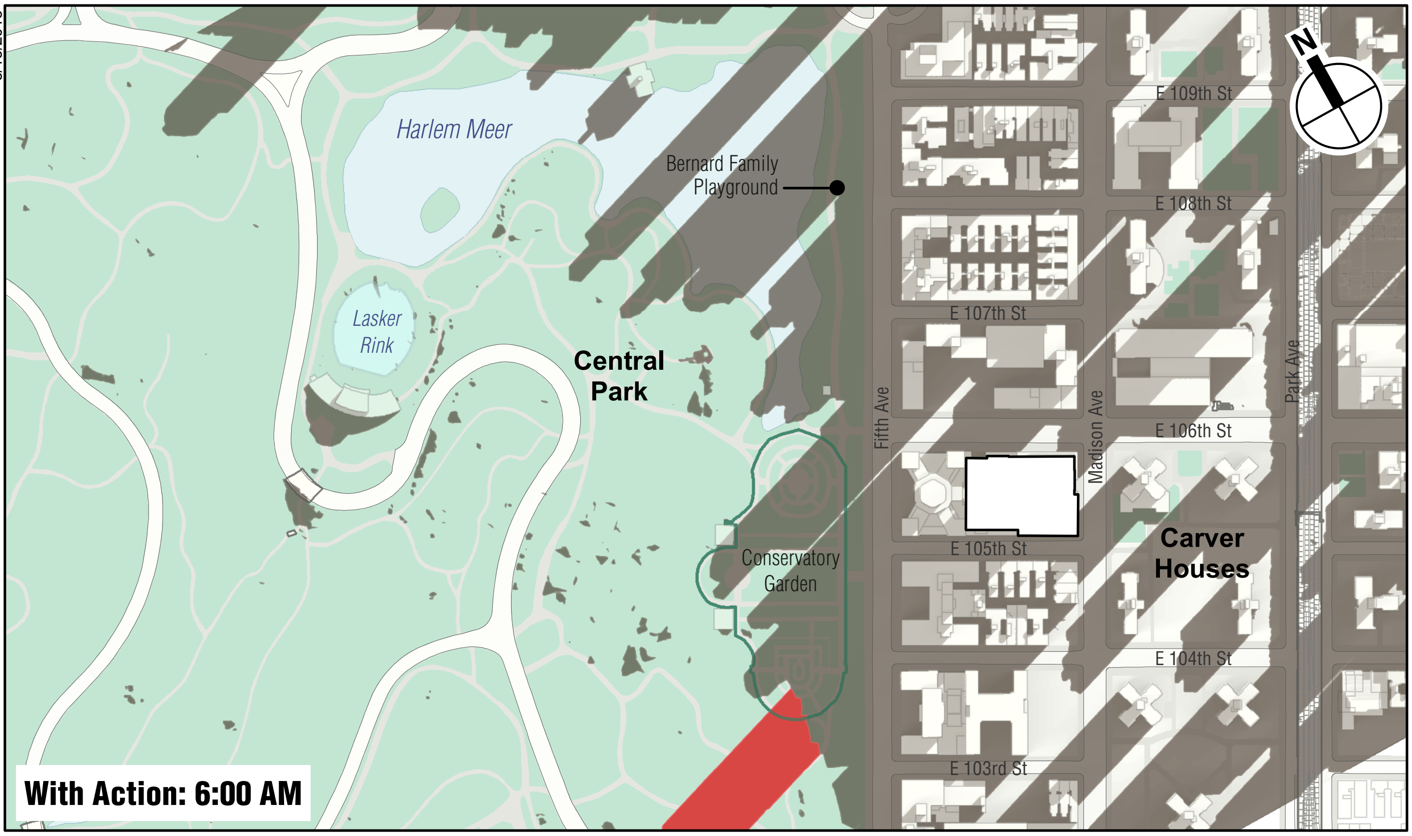
0 400 FEET

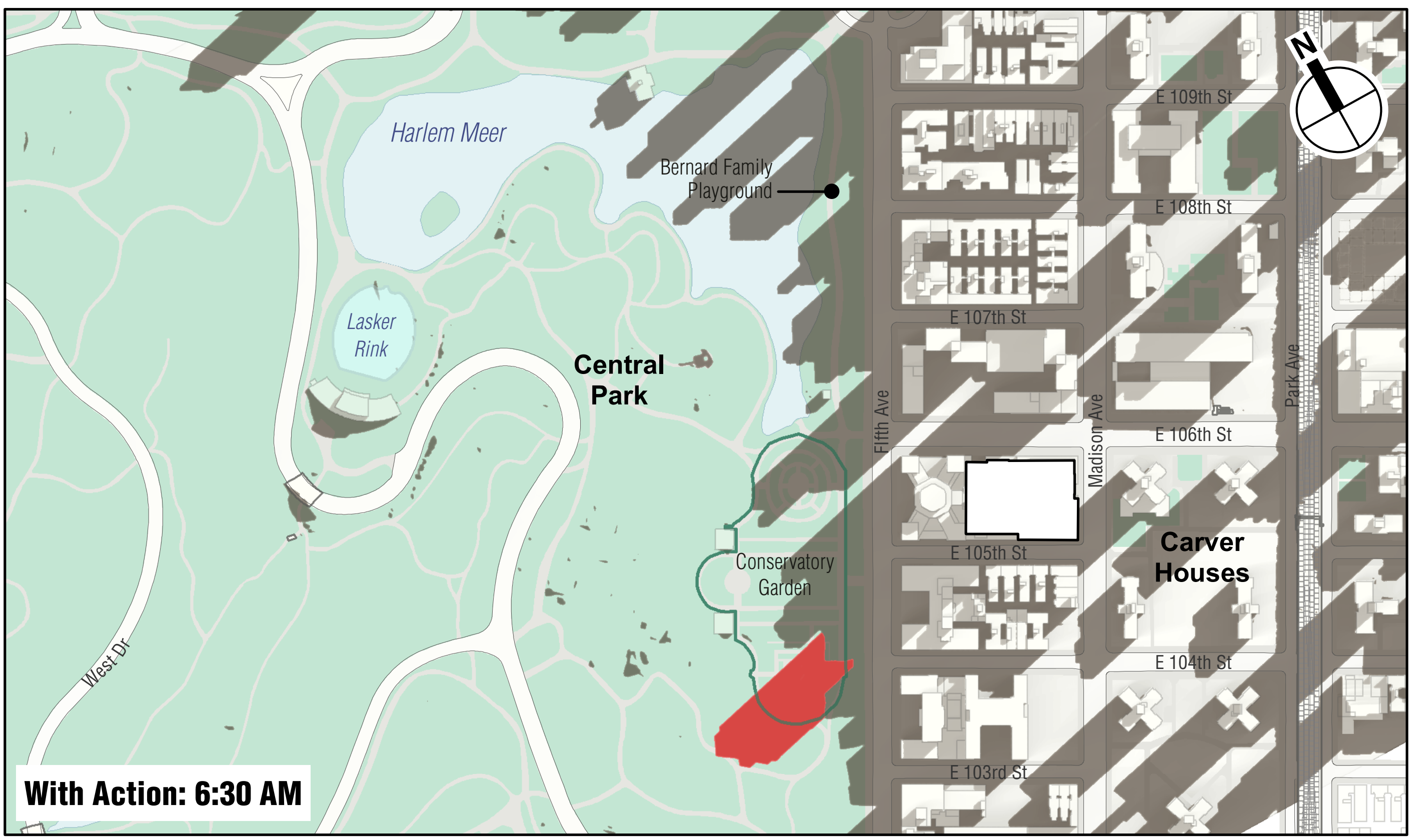
TERENCE CARDINAL COOKE REZONING

May 6/August 6

Figure D-9

8/15/2018





Area of Open Space in New Shadow

Development Site

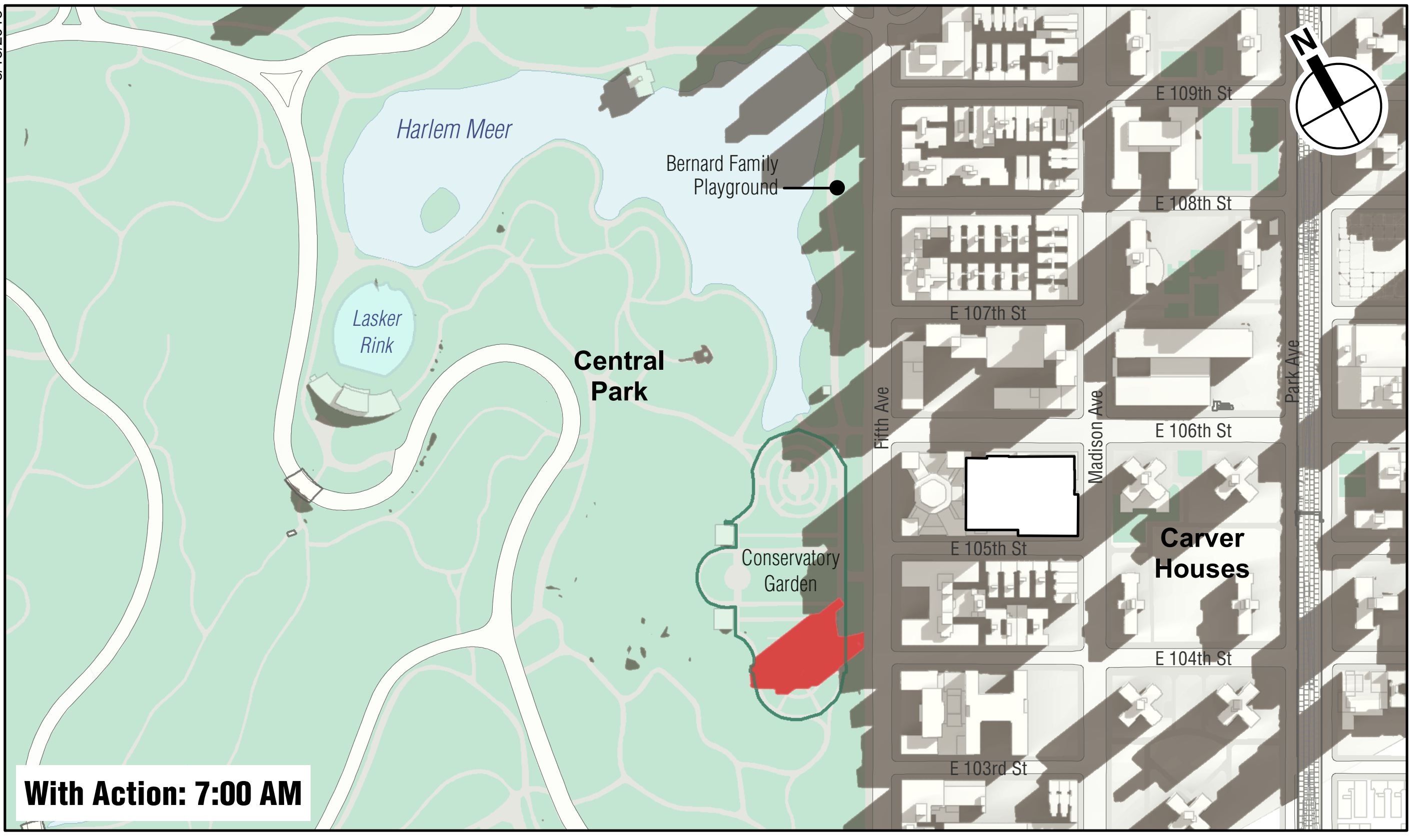
0 400 FEET

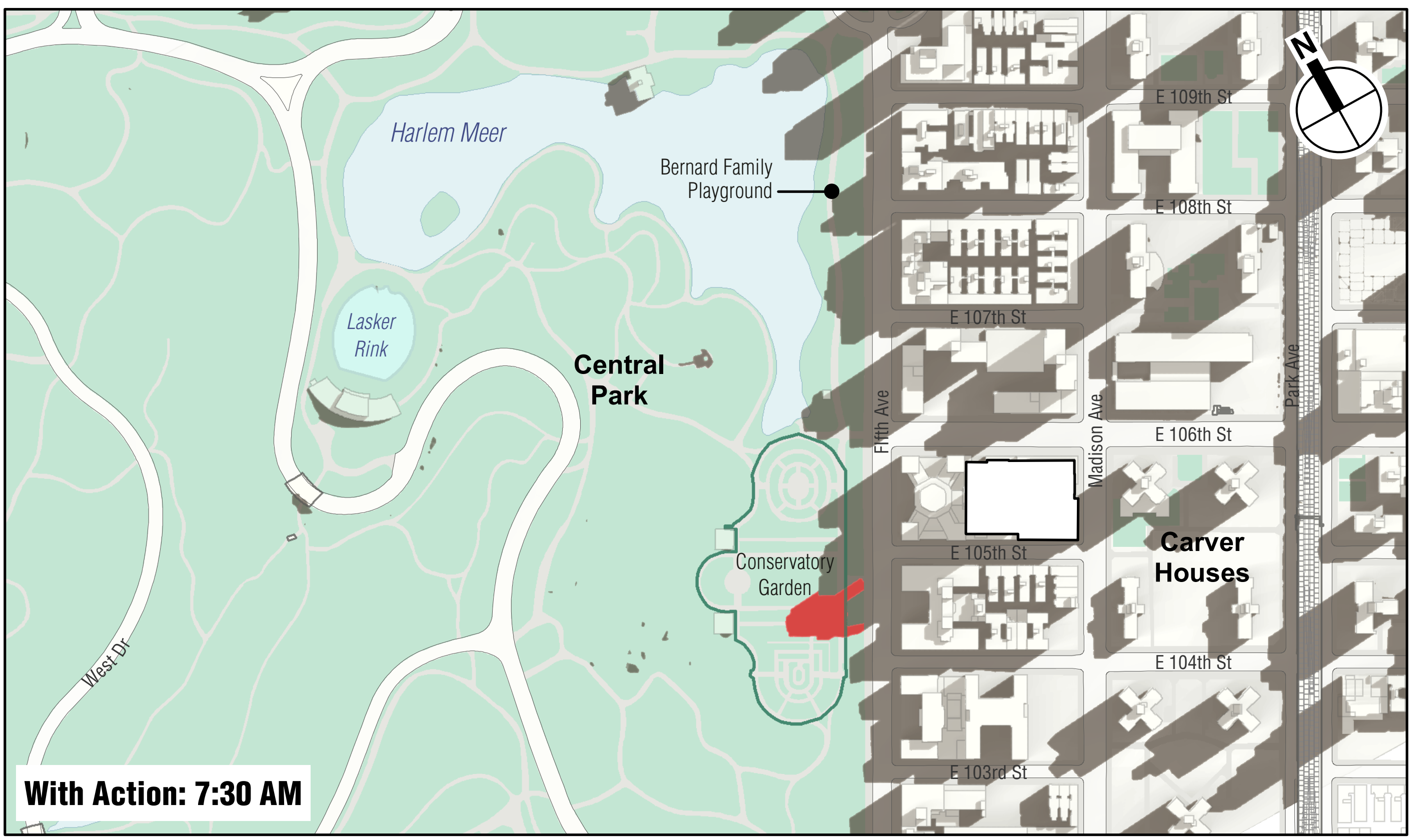
TERENCE CARDINAL COOKE REZONING

June 21

Figure D-10

8/15/2018





Area of Open Space in New Shadow

Development Site

0 400 FEET

June 21

Figure D-11

*Determination of Impact Significance (see **Figures D-12 through D-15**)*
With the Shadow Assessment Scenario, parts of the northeastern portion of Central Park would be cast in incremental shadow in the mornings of all 4 analysis days. On the December 21 analysis day, the majority of incremental shadow would fall on Harlem Meer but would not significantly alter its natural habitat or public utilization. Almost all affected park area would never be cast in more than 60 minutes of incremental shadow, which would not significantly reduce direct sunlight on the park. On the June 21 analysis day, a small portion of the Conservatory Garden would be cast in up to 65 minutes of new shadow. However on this day, and all other days within the growing season, all vegetation within the Conservatory Garden would receive enough direct sunlight to support healthy growth. The northeastern portion of Central Park, in general, would continue to receive ample sunlight, supporting vegetation and continued utilization. Therefore, the Proposed Actions would not significantly alter the public utilization of Central Park nor threaten the vegetation within it and would not result in a significant adverse shadow impact on the resource.

P.S. 108 PETER MINUIT PLAYGROUND

P.S. 108 Peter Minuit Playground is a 0.94-acre publicly accessible playground operated by NYC Parks, located between East 108th and East 109th Streets on Park Avenue. Sunlight-sensitive features within the playground include benches, playground equipment, as well as handball and basketball courts.

With the Shadow Assessment Scenario, P.S. 108 Peter Minuit Playground would be cast in incremental shadow on 1 of the 4 analysis days.

*March 21/September 21 (see **Figure D-16**)*

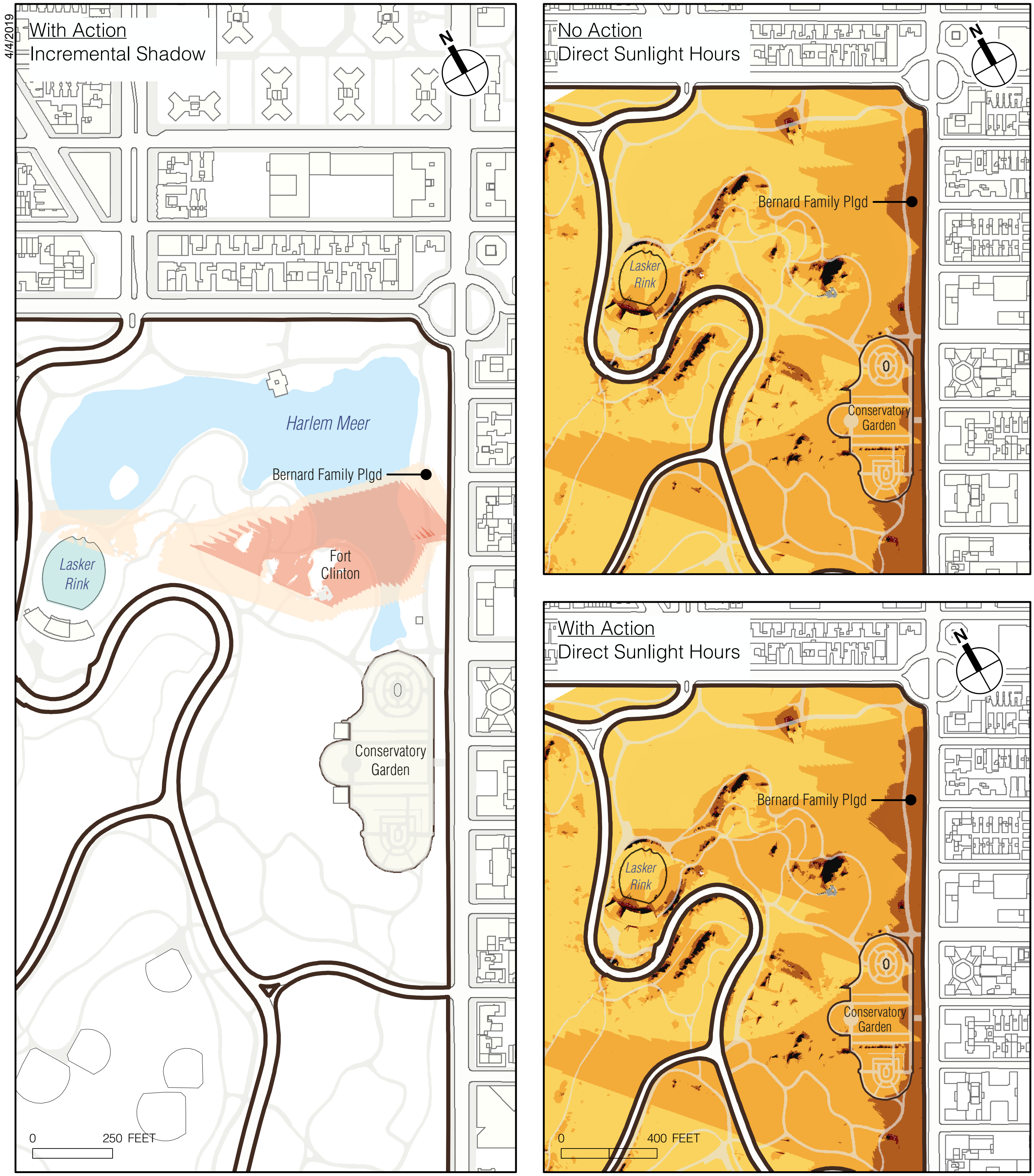
Beginning at 3:55 PM, incremental shadow cast in the Shadow Assessment Scenario would enter the playground from its southern edge. The extent of the incremental shadow would gradually increase in size and move across the playground’s handball courts before exiting the playground at 4:25 PM.

Determination of Impact Significance
With the Shadow Assessment Scenario, the P.S. 108 Peter Minuit Playground would be partially cast in incremental shadow in the afternoon on 1 of 4 analysis days. On the March 21/September 21 analysis day, the total duration of incremental shadow would be short and cover only a small portion of the park. Direct sunlight on the area affected by incremental shadow would not be substantially reduced and the handball court’s usability would not be significantly altered. None of the vegetation would experience a significant change in the duration of sunlight it received throughout the day and the new shadow would not threaten its vitality. Therefore, the incremental shadow cast in the Shadow Assessment Scenario would not result in a significant adverse shadow impact on the resource.

110TH STREET BLOCK ASSOCIATION GARDEN

The 110th Street Block Association Garden is a GreenThumb community garden located at the northeast corner of East 110th Street and Madison Avenue. The garden is publicly accessible on weekdays between 9 AM and 12 PM, and on weekends from 1 PM to 4 PM. Sunlight-sensitive features within the garden include vegetation and plant beds.

With the Shadow Assessment Scenario, the 110th Street Block Association Garden would be cast in incremental shadow on 1 of the 4 analysis days.

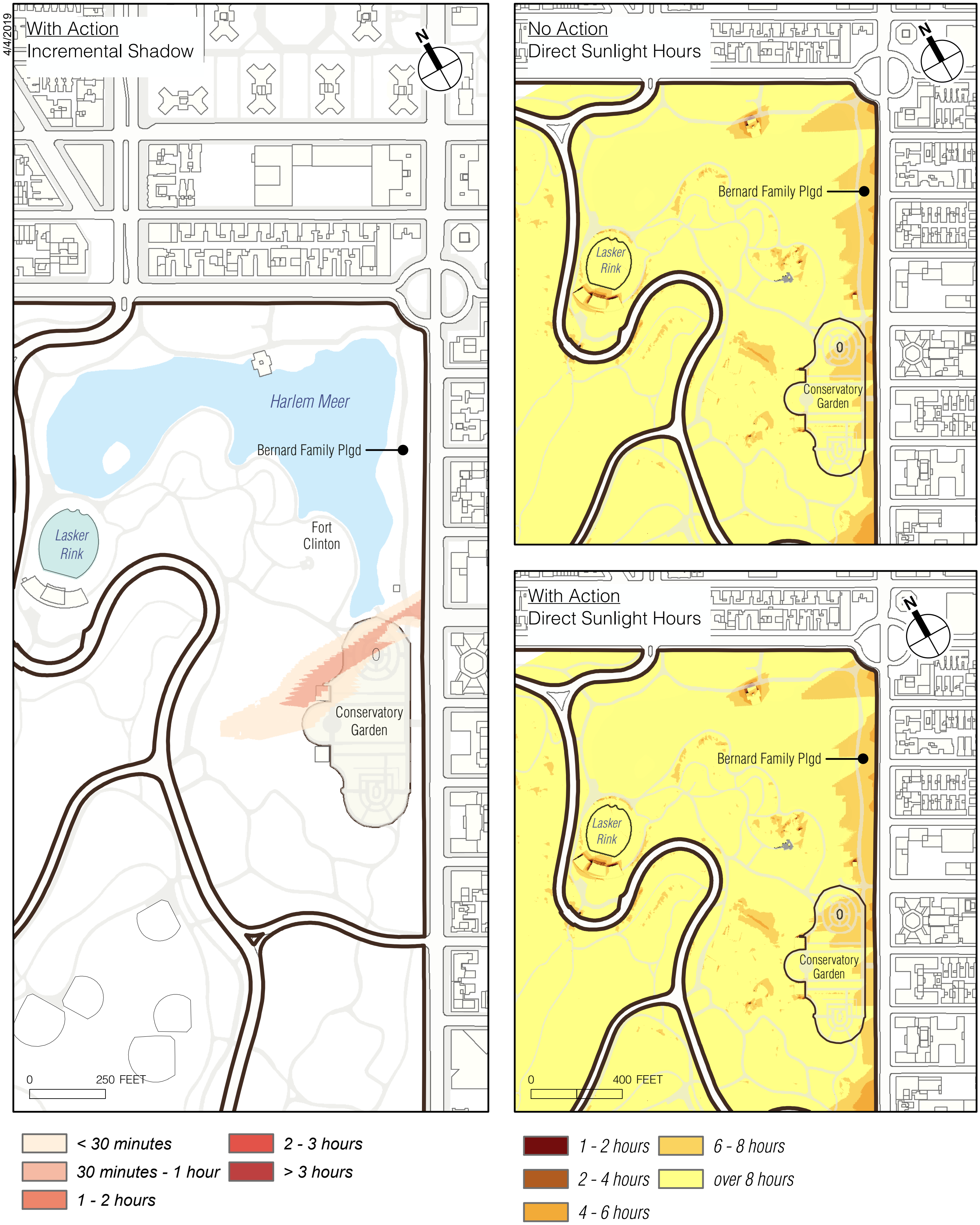


- < 30 minutes
- 30 minutes - 1 hour
- 1 - 2 hours
- 2 - 3 hours
- > 3 hours

- 1 - 2 hours
- 2 - 4 hours
- 4 - 6 hours
- 6 - 8 hours
- over 8 hours

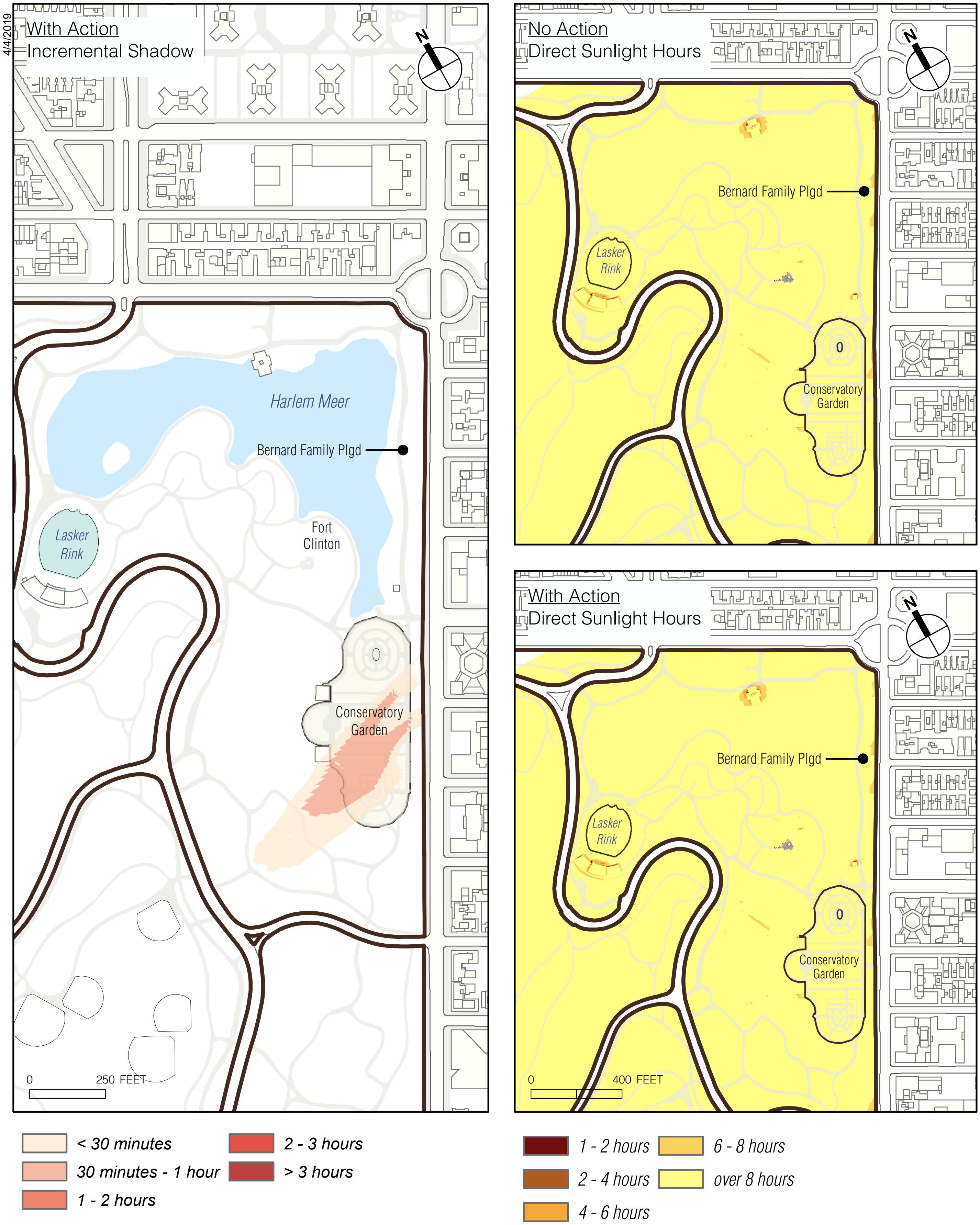
Solar Exposure Analysis
December 21

Figure D-12



Solar Exposure Analysis
March 21/September 21

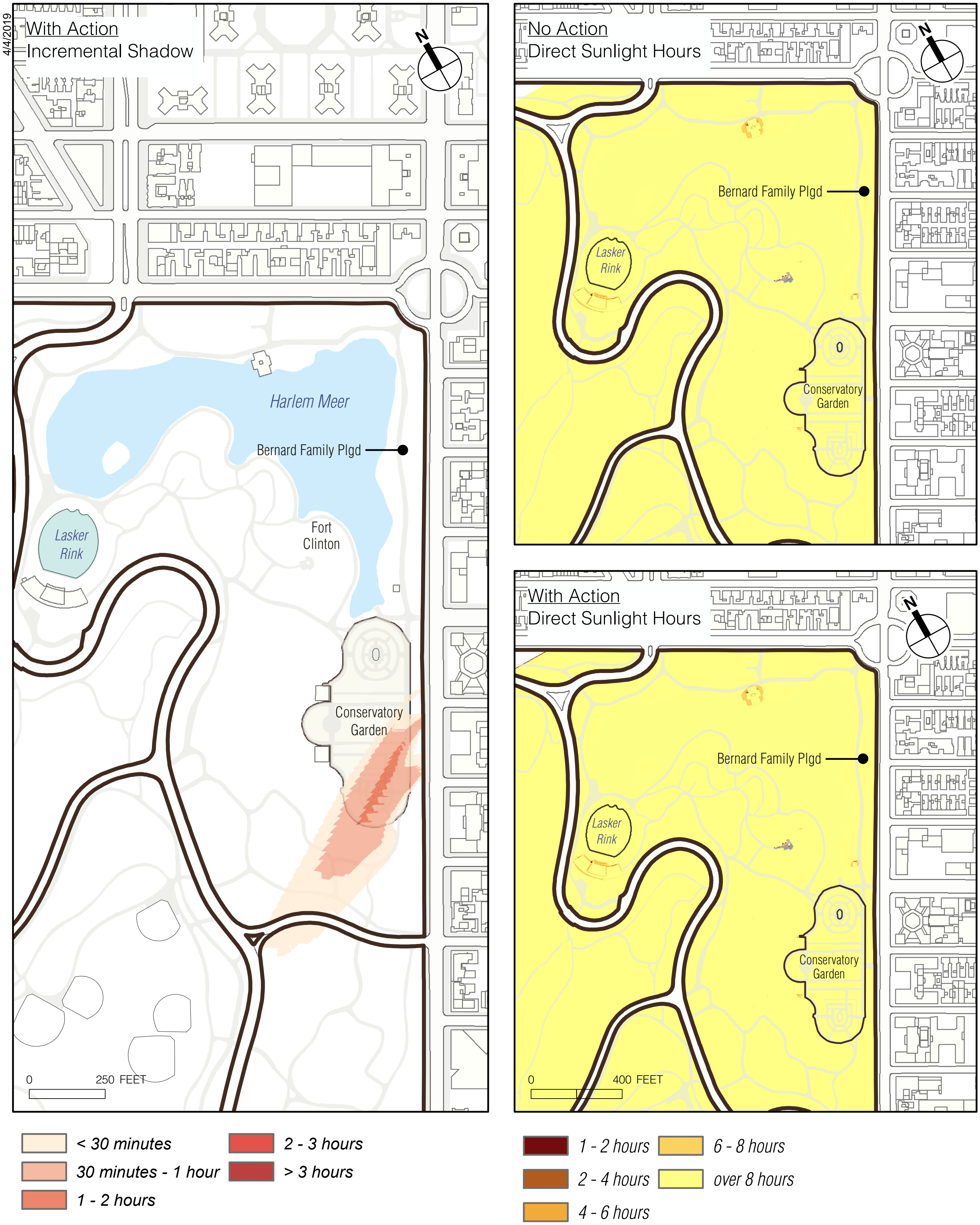
Figure D-13



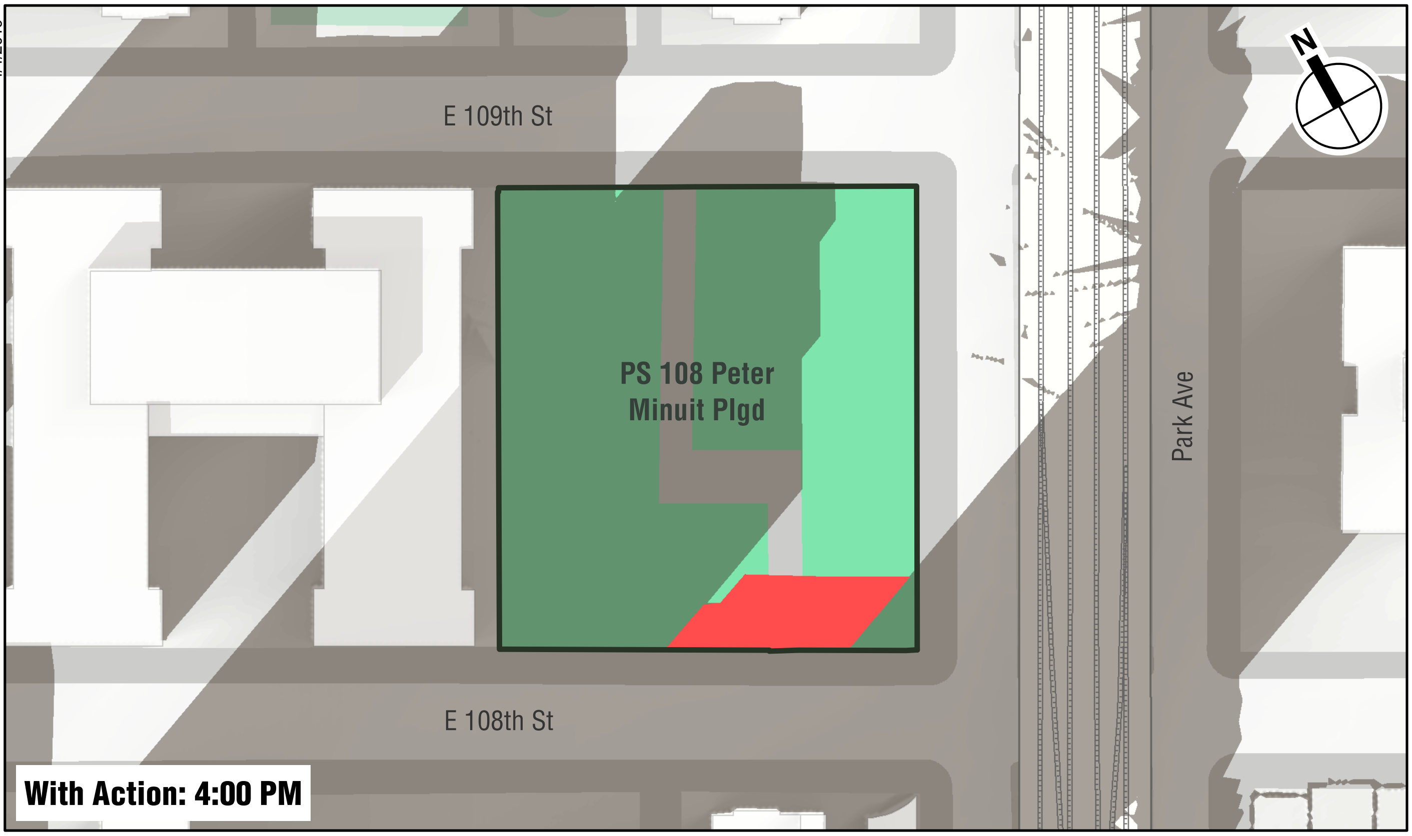
Solar Exposure Analysis
May 6/August 6

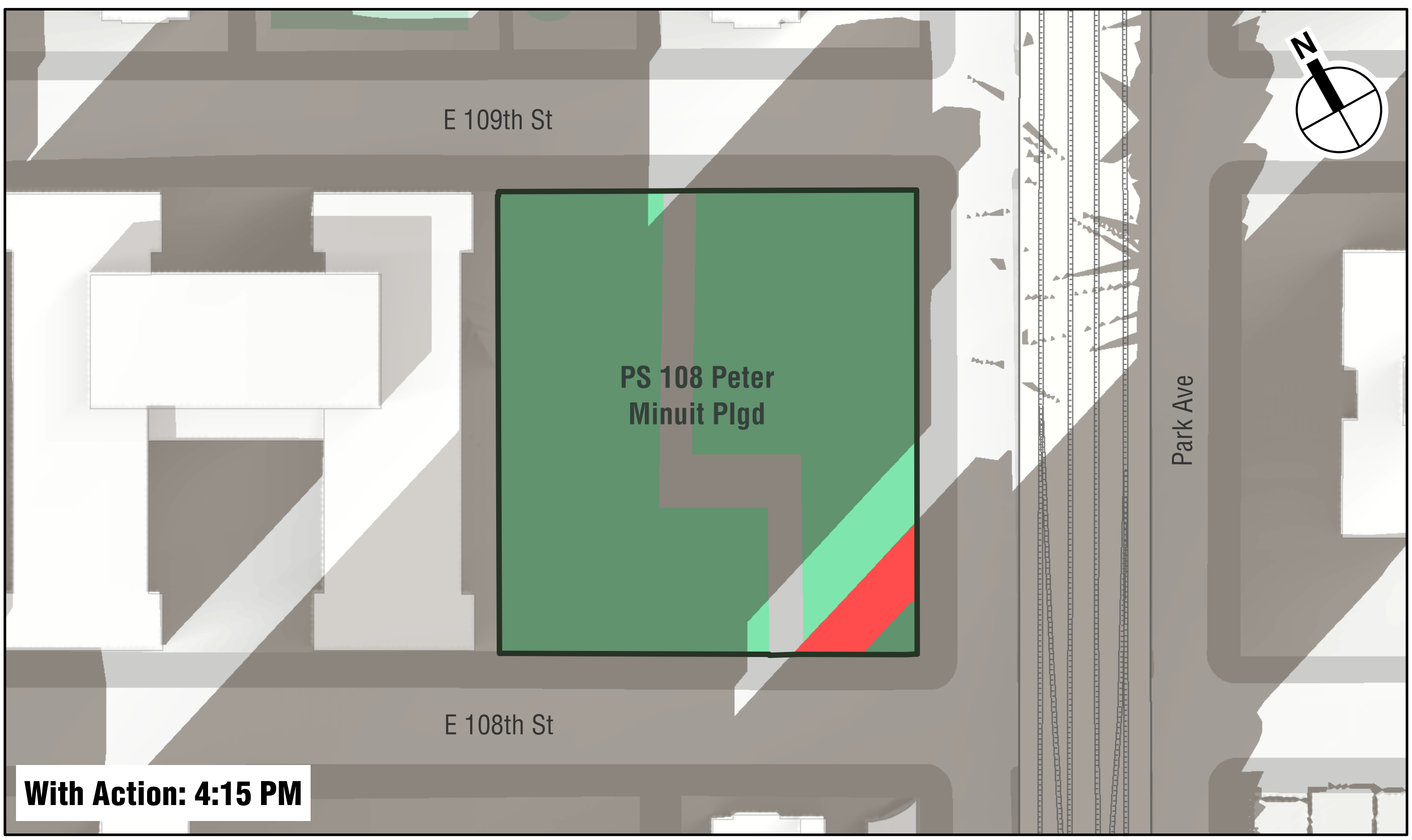
TERENCE CARDINAL COOKE REZONING

Figure D-14



Solar Exposure Analysis
June 21
Figure D-15





Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

Area of Open Space in New Shadow

March 21/September 21

Figure D-16

*December 21 (see **Figures D-17 and D-18**)*

Beginning at 2:20 PM, incremental shadow would be cast on the western portion of the 110th Street Block Association Garden. Over the next 33 minutes the incremental shadow would expand in geographic extent until the analysis day ends at 2:53 PM.

Determination of Impact Significance

With the Shadow Assessment Scenario, the 110th Street Block Association Garden would be partially cast in incremental shadow in the afternoon of the December 21 analysis day. The incremental shadow would fall after the garden's posted hours of operation and would not alter the resource's utilization. Shadow cast in December would fall outside the growing season and would not threaten the growth of the resource's vegetation. Therefore, the incremental shadow cast in the Shadow Assessment Scenario would not significantly alter the public utilization of the 110th Street Block Association Garden nor threaten the vegetation within it and would not result in a significant adverse shadow impact on the resource.

PUEBLO UNIDO COMMUNITY GARDEN

The Pubelo Unido Community Garden is a GreenThumb community garden located on the east side of Madison Avenue between East 110th Street and East 111th Street. The garden is publicly accessible on weekdays from 2 PM to 5 PM. Sunlight-sensitive features within the garden include vegetation and plant beds.

With the Shadow Assessment Scenario, the Pueblo Unido Community Garden would be cast in incremental shadow on 1 of the 4 analysis days.

*December 21 (see **Figures D-17 and D-18**)*

Beginning at 2:30 PM, incremental shadow would be cast on a portion of the Pueblo Unido Community Garden. Over the next 23 minutes the incremental shadow would remain approximately the same size, until the analysis day ends at 2:53 PM.

Determination of Impact Significance

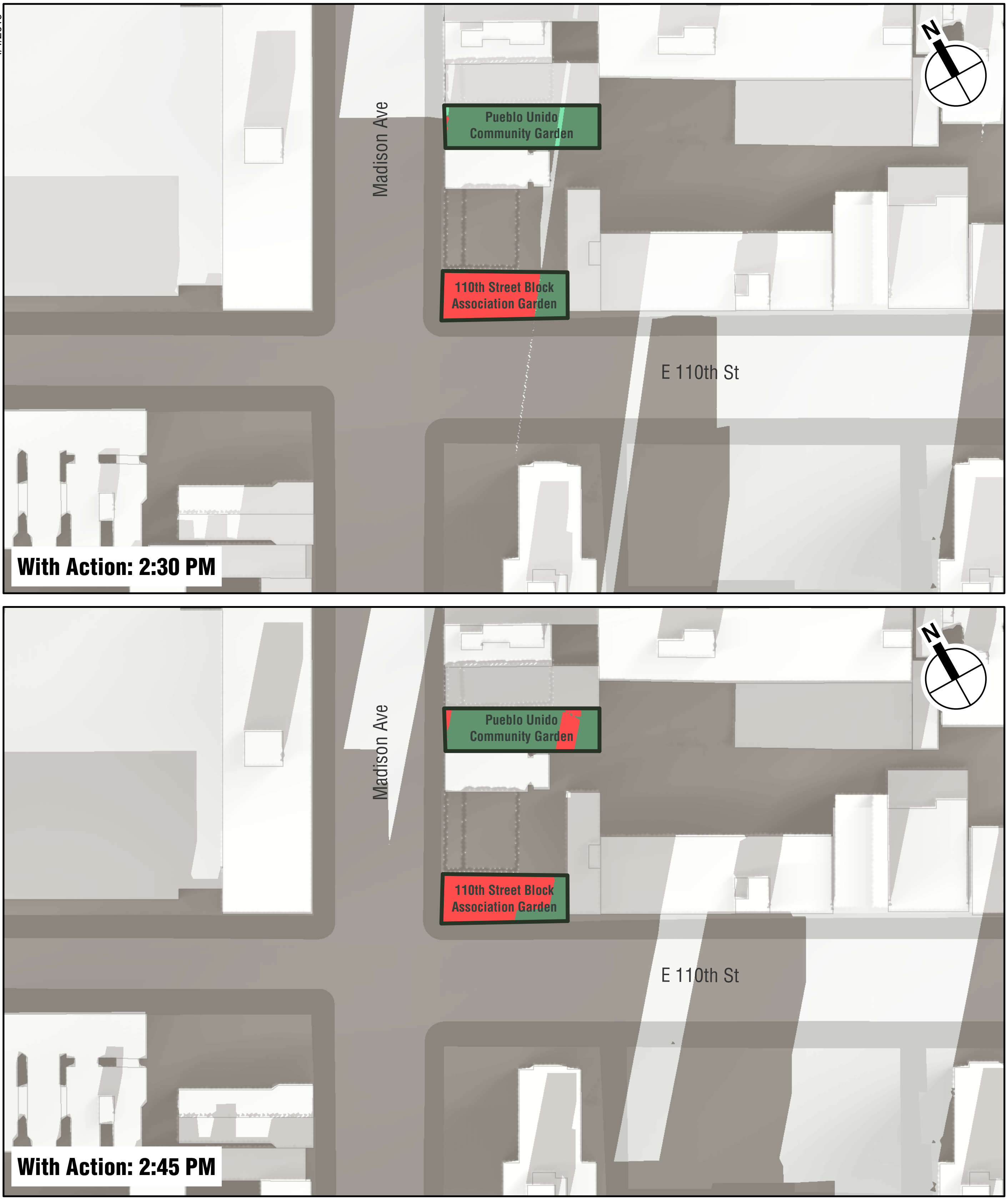
With the Shadow Assessment Scenario, the Pueblo Unido Community Garden would be partially cast in incremental shadow in the afternoon of the December 21 analysis day. The incremental shadow would be brief and would not alter the resource's utilization. Shadow cast in December would fall outside the growing season and would not threaten the growth of the resource's vegetation. Therefore the incremental shadow cast in the Shadow Assessment Scenario would not significantly alter the public utilization of the 110th Street Block Association Garden nor threaten the vegetation within it and would not result in a significant adverse shadow impact on the resource.

CARVER HOUSES

The Carver Houses is a NYCHA development composed of 13 residential buildings and associated open space located between Park and Madison Avenues extending from East 99th Street to East 106th Street.

Because the landscaped grounds of the Carver Houses are accessory to the NYCHA development and designated for the use of NYCHA residents, the grounds are not considered a publicly accessible open space. However, the Carver Houses complex, including its landscaped grounds, is eligible for listing on the S/NR. For this reason, the Carver Houses open spaces are analyzed as historic resource with sunlight-sensitive features. The complex was developed following a "Tower in the Park" design emphasizing light and unobstructed open spaces. Sunlight-sensitive features

4/4/2019

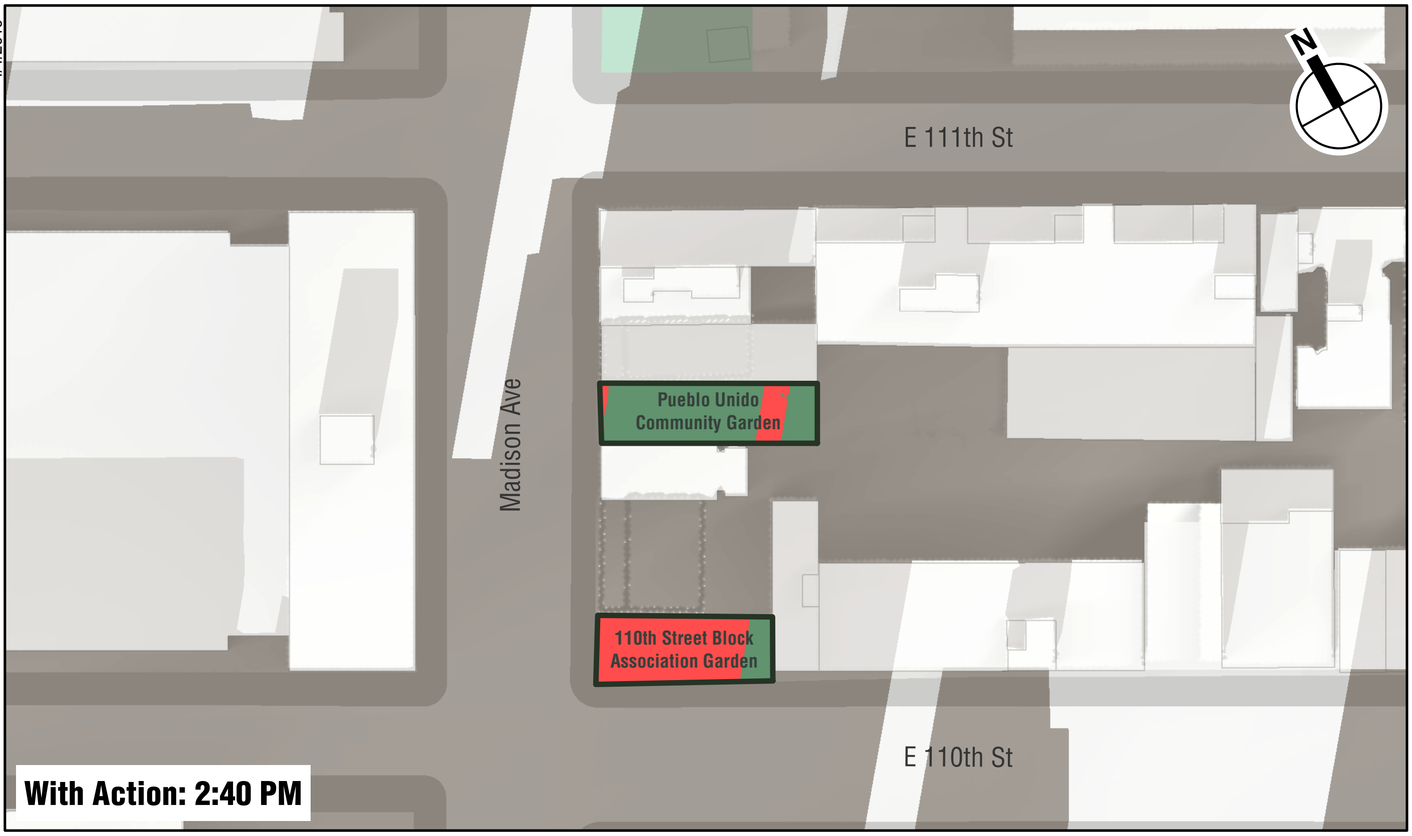


Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

Area of Open Space in New Shadow



Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

Area of Open Space in New Shadow

December 21

Figure D-18

within the resource include a central tree-lined mall, a large sunken amphitheater, and several areas for passive and active recreational use. With the Shadow Assessment Scenario, the Carver Houses would be cast in incremental shadow on 3 of the 4 analysis days.

*March 21/September 21 (see **Figure D-19**)*

Incremental shadow would be cast on the Carver Houses for the last 59 minutes of the analysis day, from 3:30 PM to 4:29 PM. The new shadow would fall solely on the extreme northwest corner of the superblock and adjacent to the intersection of Madison Avenue and East 106th Street. The area affected includes several trees and pathways leading to building entrances.

*May 6/August 6 (see **Figure D-20**)*

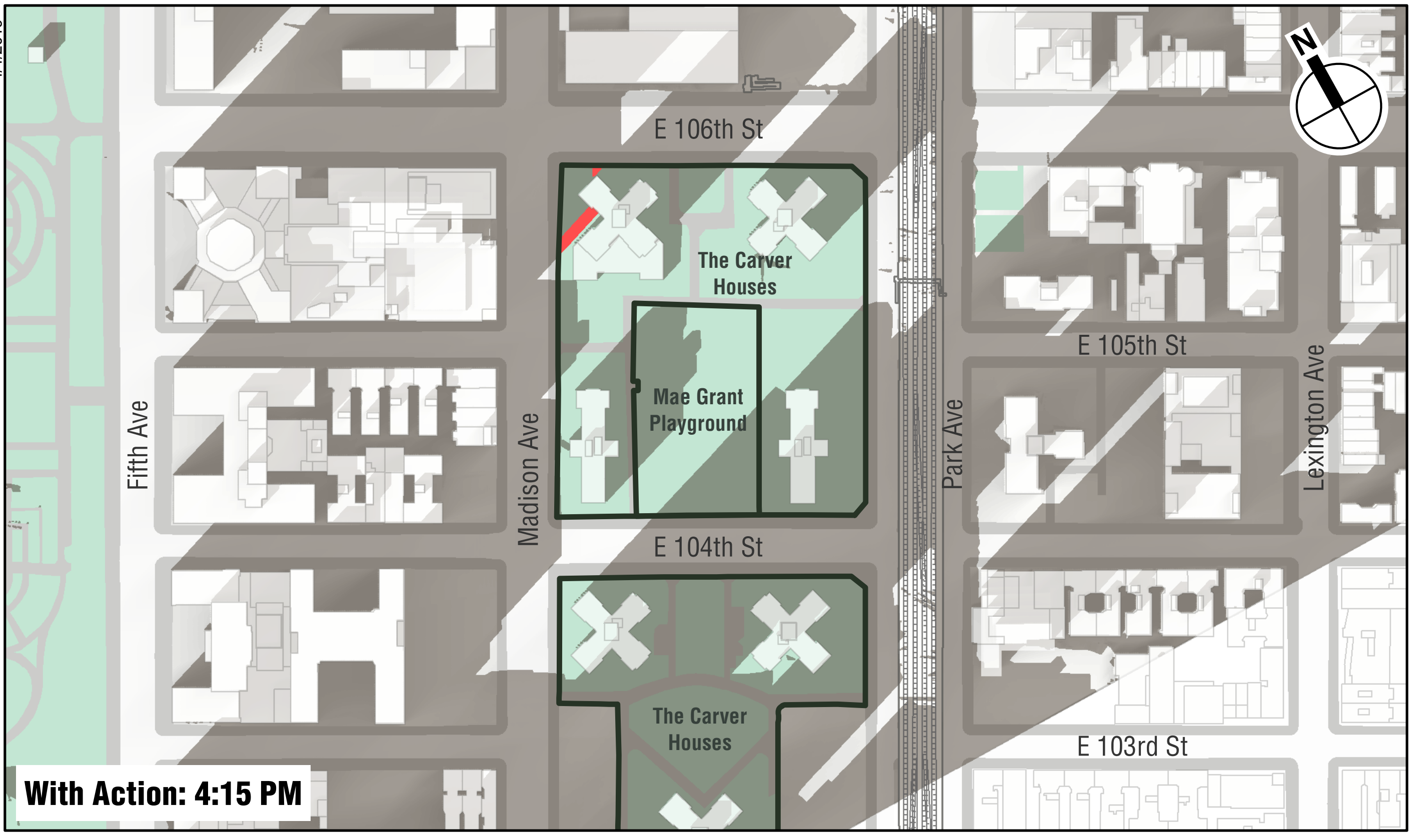
Incremental shadow would be cast on the Carver Houses for the last 1 hour and 53 minutes of the analysis day, from 3:25 PM to 5:18 PM. The new shadow would fall solely on the northwest corner of the superblock and adjacent to Madison Avenue between East 105th and 106th Street. The area affected includes several trees and pathways leading to building entrances.

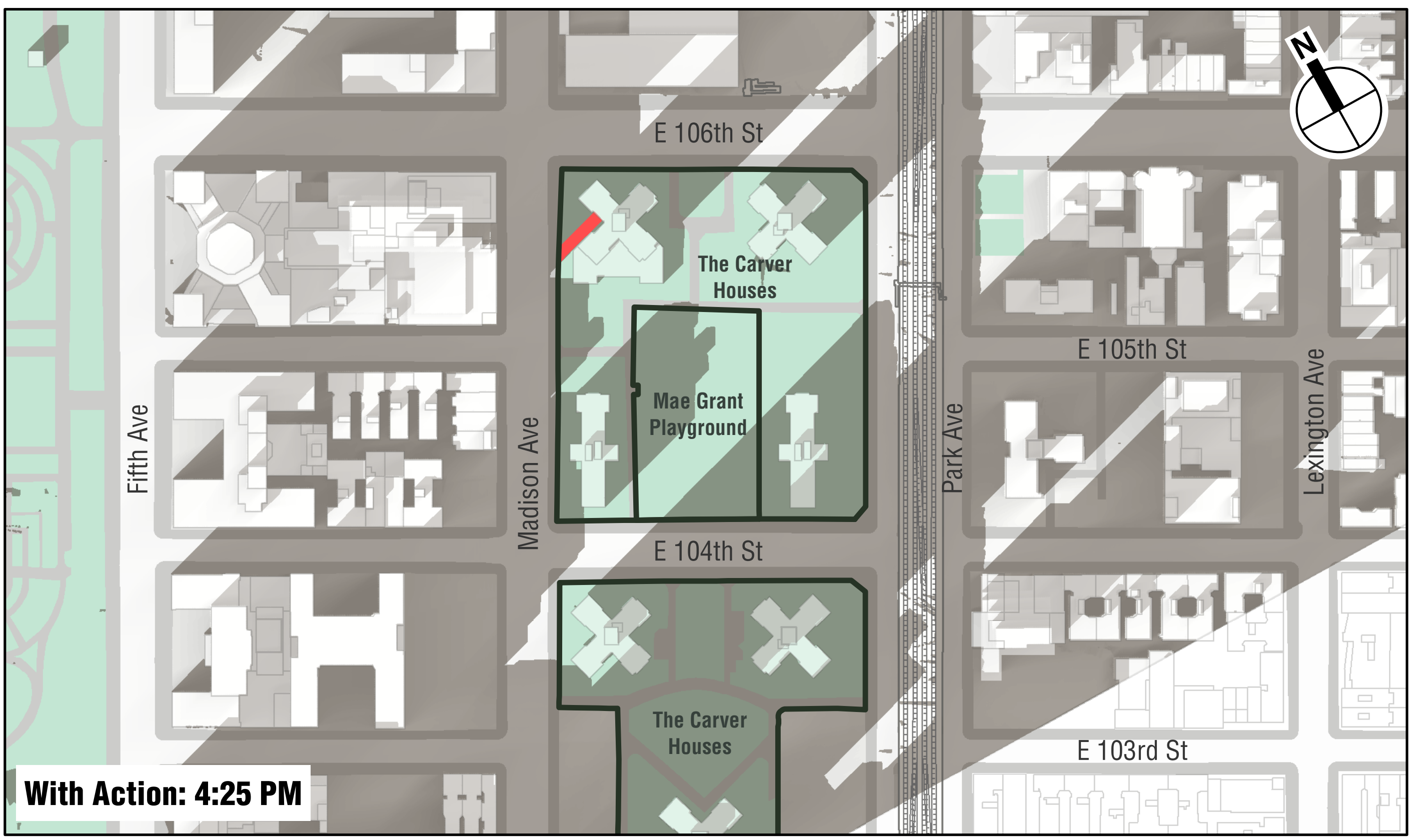
*June 21 (see **Figure D-21**)*

Incremental shadow would be cast on the Carver Houses for the last 2 hours and 31 minutes of the analysis day, from 3:30 PM to 6:01 PM. The new shadow would be restricted to area of the Carver Houses superblock north of East 105th Street. The area affected includes several trees, pathways, and the northern terminus of the tree-lined mall traversing the complex.

Determination of Impact Significance

With the Shadow Assessment Scenario, portions of the Carver Houses northwest corner would be cast in incremental shadow in the afternoon of 3 of 4 analysis days. Although the total duration of time the resource would be affected by new shadow would last up to 2 hours and 31 minutes (on June 21), the constantly moving new shadow would not remain on any one sunlight-sensitive resource for more than 50 minutes, regardless of the season. From the first day of spring through the end of summer, from 15 to 50 minutes on new shadow would be cast on several trees along Madison Avenue between East 105th and 106th Street. The area affected by incremental shadows is limited to a very small portion of the northwest corner of the Carver Houses grounds. The affected area is occupied with a playground and landscaping. No other incremental shadow would be cast on the grounds of the Carver Houses, including its remaining plazas, grassy lawns, mature trees, play areas, and its 1,500-seat amphitheater; therefore, incremental shadows cast on the Carver Houses would not diminish the historic significance of the resource. Within the growing season, the Shadow Assessment Scenario would not significantly reduce sunlight on this area and it would be able to support a similar variety of vegetation as in the No Action condition. On the longest days of the year, approximately 20 min of new shadow would also fall on the central mall, including benches and its prominent London planetrees (*Platanus x acerifolia*). The London planetree can thrive in partial sun conditions or from 4 to 6 hours of sunlight a day. All of the affected London planetrees would receive at least 6 hours of direct sunlight. The new shadow would not significantly alter the usability of the mall as a passive resource nor stunt the growth of its vegetation. Therefore, the incremental shadow cast in the Shadow Assessment Scenario would not result in a significant adverse shadow impact on the resource.





Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

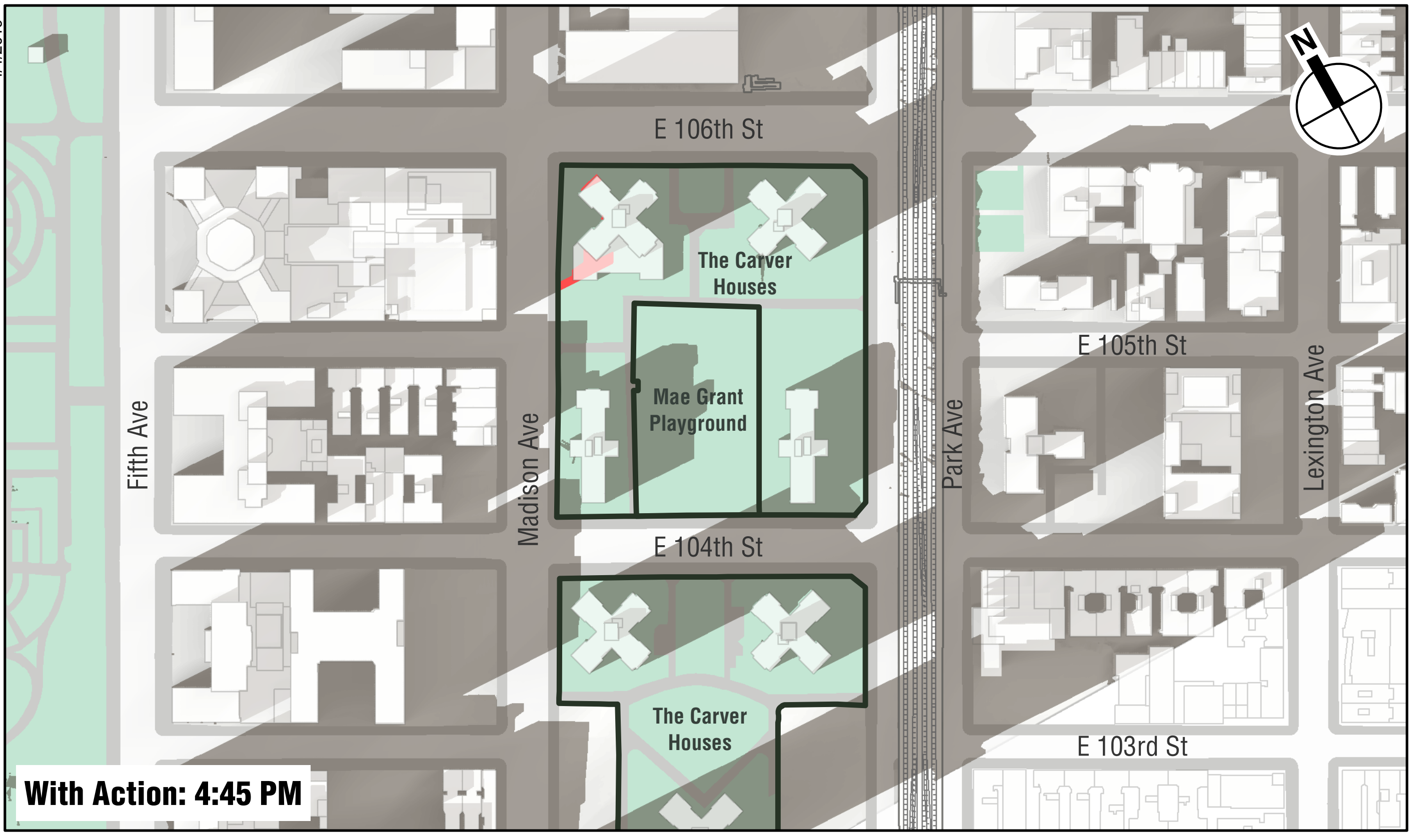
Area of Open Space in New Shadow

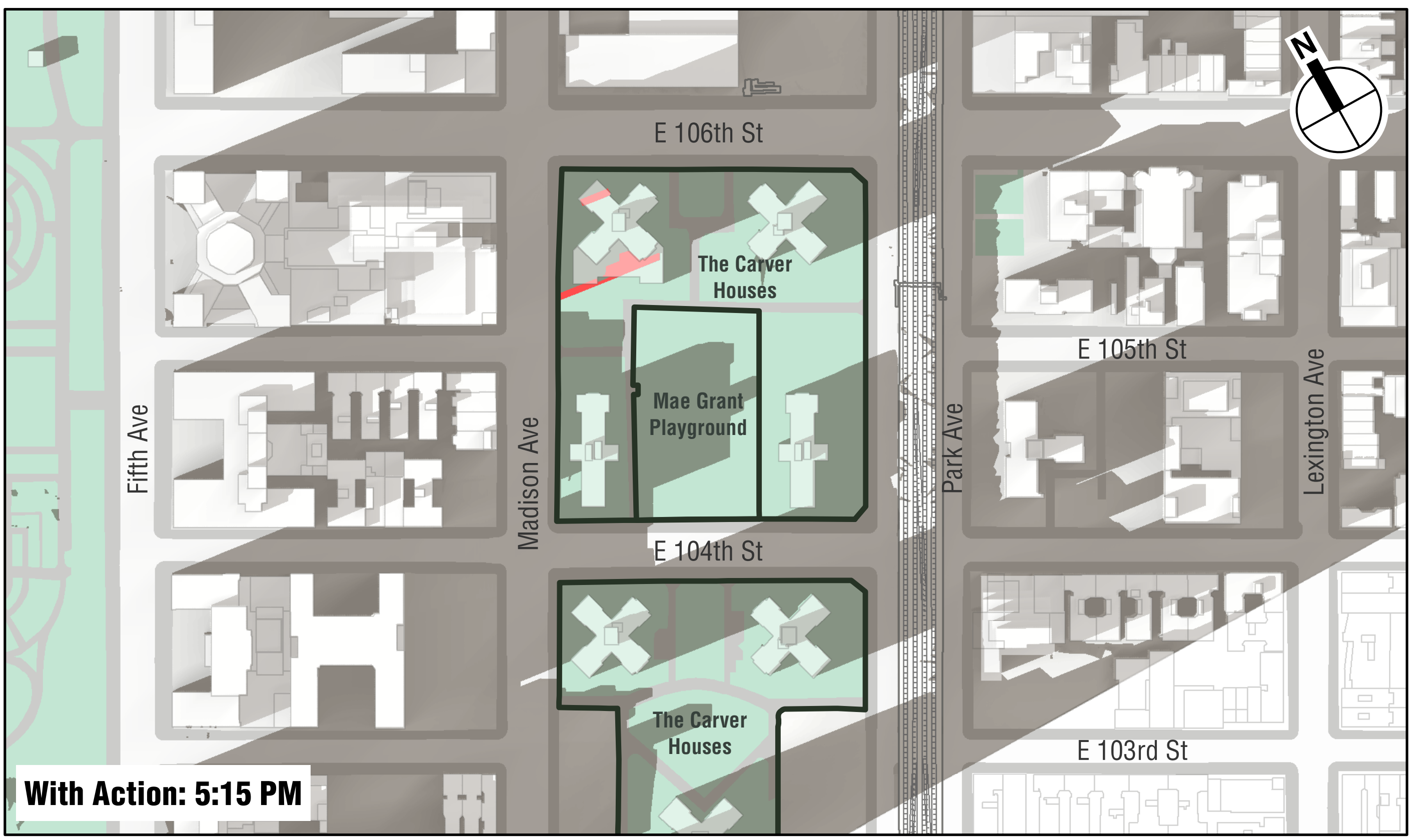
0 200 FEET

March 21/September 21

Figure D-19

4/4/2019





Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

Area of Open Space in New Shadow

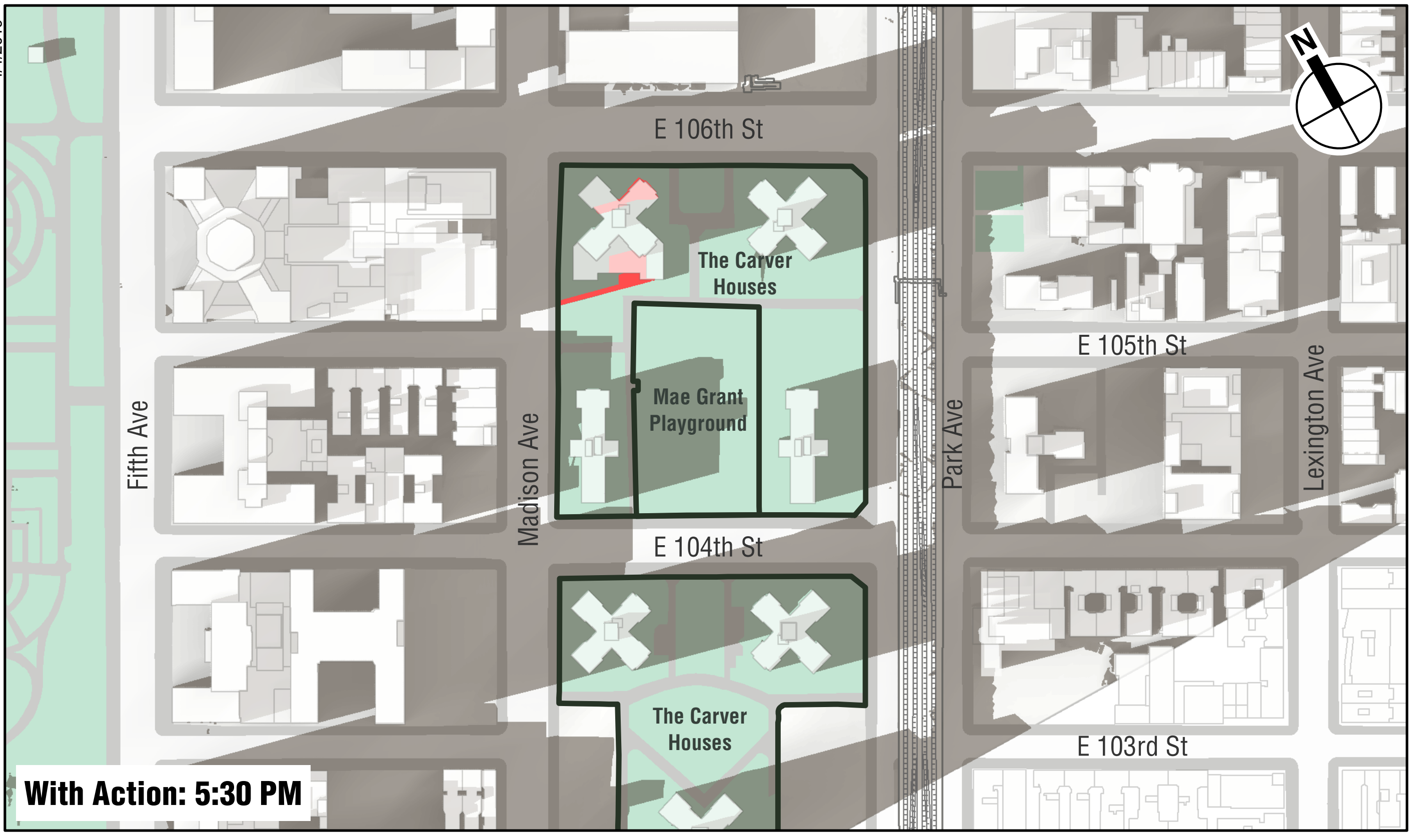
0 200 FEET

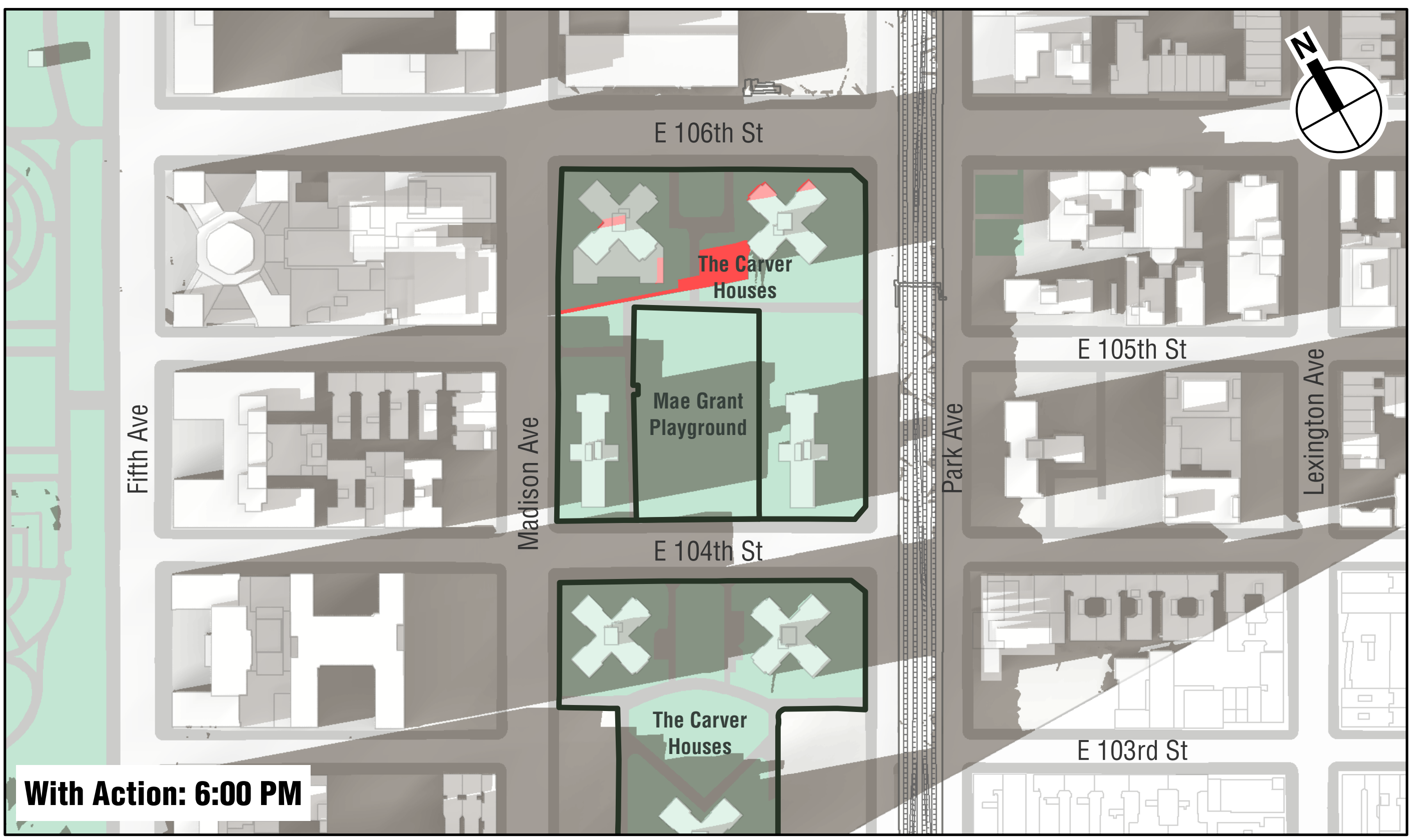
TERENCE CARDINAL COOKE REZONING

May 6/August 6

Figure D-20

4/4/2019





Open Space Resource

Area of Open Space in Direct Sunlight

Area of Open Space Cast in Existing (No Action) Shadow

Area of Open Space in New Shadow

0 200 FEET

June 21

Figure D-21

NYCHA RECREATION AREAS

NYCHA LEHMAN VILLAGE RECREATION AREAS

The potential shadow effects on the recreation areas within NYCHA's Lehman Village are included in the EAS for informational purposes. The Lehman Village recreation areas are designated for use by NYCHA residents within the grounds of NYCHA's Lehman Village housing development, which is located between Park and Madison Avenues extending from East 107th Street to East 110th Street, excluding the block between East 108th and East 109th Streets. Sunlight-sensitive features within the recreation area include basketball courts, playground equipment, and benches.

In the Shadow Assessment Scenario, the Lehman Village recreation areas would be partially cast in incremental shadow on the March 21 analysis day. Incremental shadow would enter the recreation area in the center of the Lehman Housing complex from the west at 3 PM, moving northeast and growing in size until 3:45 PM, at which point the incremental shadow would begin to decrease in size until the end of the analysis day at 4:29 PM. The incremental shadow would last for a total duration of 1 hour 29 minutes.

E. CONCLUSION

The detailed shadow analysis determined that the Proposed Actions would result in incremental shadow on five sunlight-sensitive open space resources in the shadows study area. The short duration of incremental shadow that would fall on all of the affected resources would neither substantially reduce the quantity of direct sunlight received by them nor would it significantly alter utilization of the resource or the variety of plant life supported within the resource. Therefore, the Proposed Actions would not result in significant adverse shadow impacts. ✷

Attachment E: Historic and Cultural Resources

A. INTRODUCTION

This attachment assesses the potential for the Proposed Actions to affect historic and cultural resources, which include archaeological and architectural resources. The Project Area occupies the entirety of Block 1611 (Lots 1 and 15), which is bounded by Madison and Fifth Avenues and East 105th and East 106th Streets. The Project Area includes the Flower Hill Hospital (FHH) Building at 1249 Fifth Avenue, the Annex at 12 East 106th Street, the Cohen Building at 1578 Madison Avenue, and the parking garage at 1560 Madison Avenue (see **Figure E-1**). All of the buildings in the Project Area are currently part of the Terence Cardinal Cooke Health Center (TCC). As described in detail in Attachment A, "Project Description," the Proposed Actions would facilitate the modernization of the TCC through a consolidation of existing functions at the FHH Building as well as new construction (the "Proposed Project"). The Proposed Project would facilitate new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site").

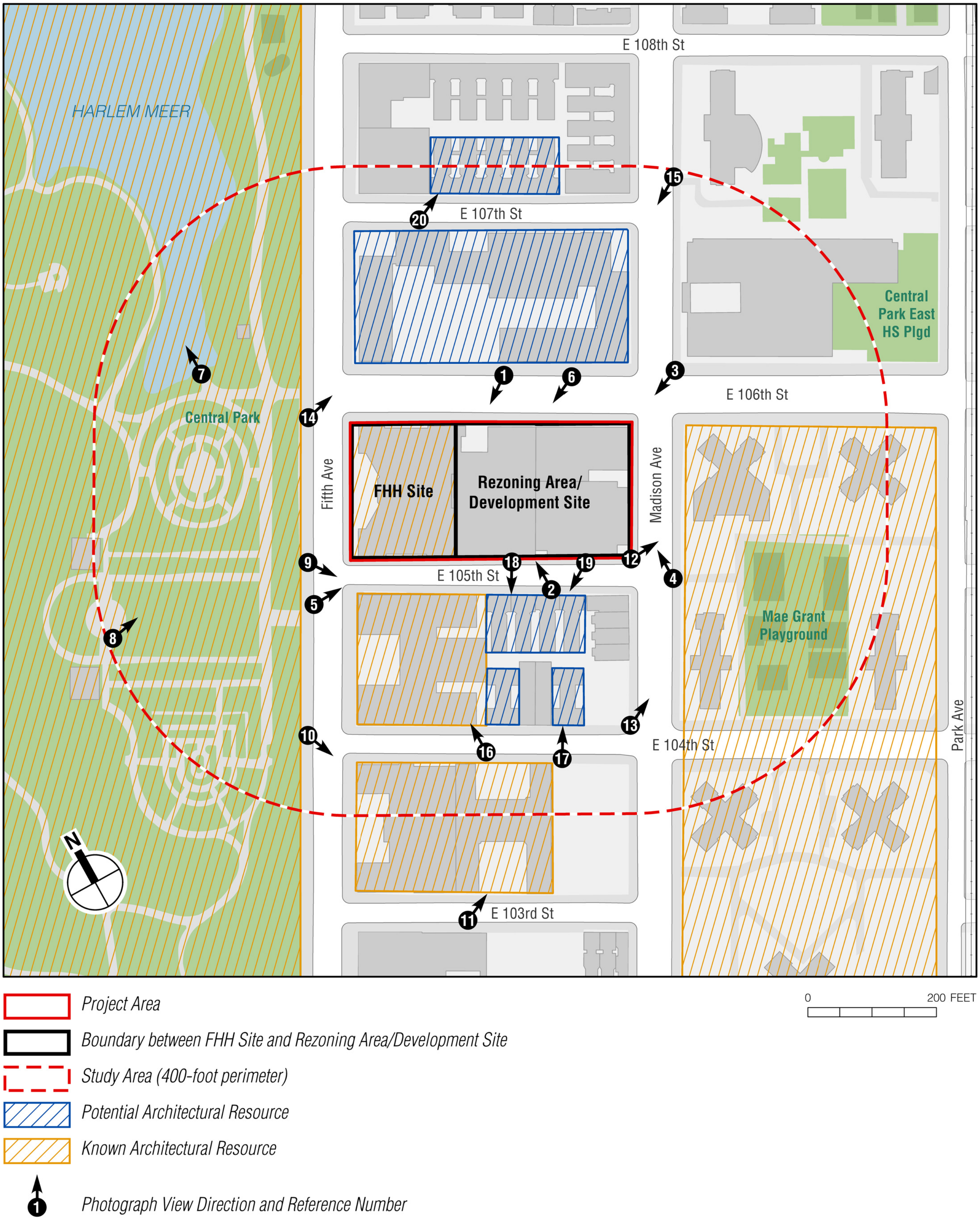
As discussed in Attachment A, "Project Description," the proposed zoning map amendment would allow for community facility, residential, and limited commercial development; therefore, the Environmental Assessment Statement (EAS) considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space. The EAS assesses the Applicant's Proposed Project ("With Action Scenario 1") as well as a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2"). Absent the Proposed Actions, the Project Area would be developed consistent with the Reasonable Worst Case Development Scenario (RWCDS).

TCC's objective is to modernize its facilities, as laid out in With Action Scenario 1. However, in order to ensure a conservative analysis, With Action Scenario 2 considers a scenario in which TCC discontinues it operations in the Project Area and the FHH Building is converted to residential use.

B. METHODOLOGY

The study area for archaeological resources is defined as the area where subsurface work would occur, in this case the Project Area itself (see **Figure E-1**). In comments dated August 2, 2018, the New York City Landmarks Preservation Commission (LPC) determined that the Project Area (Block 1611, Lots 1 and 15) has no archaeological significance (see **Appendix 1**). Therefore, this analysis focuses on standing structures only.

In general, potential impacts to architectural resources can include both direct physical effects and indirect, contextual effects. Direct impacts include demolition of a resource and alterations to a resource that cause it to become a different visual entity. A resource could also be damaged from vibration (i.e., from construction blasting or pile driving) and additional damage from adjacent construction that could occur from falling objects, subsidence, collapse, or damage from construction machinery. Adjacent construction is defined as any construction activity that would



Project Location
Figure E-1

occur within 90 feet of a historic resource, as defined in the New York City Department of Buildings (DOB) *Technical Policy and Procedure Notice* (TPPN) #10/88.[1] Contextual impacts can include the isolation of a property from its surrounding environment, or the introduction of audible or atmospheric elements that are out of character with a property or that alter its setting. The study area for architectural resources is, therefore, a larger area than the archaeological study area, to account for any potential contextual impacts. For the Proposed Actions, the architectural resources study area has been defined, following the guidelines of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, as being within 400 feet of the Project Area (see **Figure E-1**). Within the study area, architectural resources that were analyzed include National Historic Landmarks (NHLs), properties listed on the State and National Registers of Historic Places (S/NR) or properties determined eligible for such listing (S/NR-eligible), New York City Landmarks (NYCLs), New York City Historic Districts (NYCHDs), and properties determined eligible for landmark status ("known architectural resources"). Additionally, a survey was conducted to identify any previously undesignated properties that appeared to meet S/NR or NYCL eligibility criteria ("potential architectural resources").

C. EXISTING CONDITIONS

ARCHITECTURAL RESOURCES

PROJECT AREA

As noted above, the Project Area occupies the entirety of the block bounded by Madison and Fifth Avenues and East 105th and East 106th Streets and is occupied by four buildings. The Rezoning Area/Development Site contains three buildings—the Annex, the Cohen Building, and a parking garage. The remaining portion of Lot 1, the FHH Site, contains the FHH Building. In a comment letter dated October 24, 2018, LPC determined that the FHH Building appears S/NR-eligible (see LPC's October 24, 2018 comment letter in **Appendix 1**, "Agency Correspondence"). There are no other known architectural resources in the Project Area (see **Figure E-1**).[2]

The Annex (Block 1611, p/o Lot 1) is located mid-block with frontages on East 105th and East 106th Streets (see Views 1 and 2 of **Figure E-2**). The approximately 192,080-gross-square-foot (gsf) Annex contains a skilled nursing facility, dialysis facilities, occupational and physical therapy offices, a chapel, and a 50-bed specialty hospital (the "Specialty Hospital"). In 1936 plans were announced for the construction of a new medical college that would be constructed east of (and behind) the Fifth Avenue Hospital (now the FHH Building). Originally known as the New York Medical College building, the nine-story Annex was designed by architects Reinhard & Hofmeister and Wallace K. Harrison, and is located centrally on the midblock site. It connects at all floors with the FHH Building to the west and the Cohen Building to the east. It also connects to the parking garage at the basement level. The Annex also has two-story wings fronting on East 105th and 106th Streets. The East 105th Street façade was altered with an addition in 1955, which

[1] *TPPN #10/88* was issued by DOB on June 6, 1988, to supplement Building Code regulations with regard to historic structures. *TPPN #10/88* outlines procedures for the avoidance of damage to historic structures resulting from adjacent construction, defined as construction within a lateral distance of 90 feet from the historic resource.

[2] The FHH Building is located within a potential Fifth Avenue Historic District, which was approved for listing by the State Review Board in 1980. However, no further action was taken. According to a June 14, 2018 phone conversation with Linda Mackey of the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP), the potential district has not been determined eligible for S/NR listing.

View southeast to the Annex's north façade **1**

View northwest to the Annex's south façade **2**

Project Area
Figure E-2

incorporates the original two-story wing of the Medical College/Annex Building. The lower two floors are faced in buff-colored brick, with the upper floors faced in corrugated metal with horizontal banded windows. The Annex's primary entrance is accessed from East 106th Street by two sets of wide, concrete stairs separated by landings. The lower landing provides access to an auditorium to the east; the upper landing opens into the building's primary entrance. The auditorium is faced in buff-colored brick, consistent with the nine-story portion of the building which also has rectangular paired windows. The Annex was altered in 1964 to connect with the Cohen Building to the east. A corridor connects the two buildings at each floor of the Annex. The Annex was again altered in 1973 to connect to the garage building at the basement level.

The 10-story Cohen Building (Block 1611, p/o Lot 1) is located at the northeast corner of the Project Area at Madison Avenue and East 106th Street (see View 3 of **Figure E-3**). The building was designed by architects Rogers & Butler, with Alexander P. Morgan as a consultant, and was completed in 1964. The building has a slab-like form and is faced in buff-colored brick, with narrow window openings grouped in vertical dark bands on its north and south façades, and a single band on the Madison Avenue façade that contains metal panels but no windows. The building contains approximately 108,862 gsf, which includes skilled nursing facility beds and the Specialty Hospital. The Cohen Building connects to the Annex's central, nine-story Medical College Building to the west.

The parking garage (Block 1611, Lot 15) at the northwest corner of Madison Avenue and East 105th Street occupies the southeast corner of the Project Area. The six-story, approximately 85,182-gsf parking garage was completed in 1973 and connects to the Annex and the Cohen Building at the basement level. Above grade, each garage level is identified by horizontal corrugated metal cladding. A garage entrance opens onto Madison Avenue (see View 4 of **Figure E-3**).

As described above, LPC made a determination that the FHH Building (Block 1611, p/o Lot 1), located at 1249 Fifth Avenue, appears S/NR-eligible (see **Appendix 1**, "Agency Correspondence"). The building was designed in the Italian Renaissance style by architects York & Sawyer and opened in 1922 as the Fifth Avenue Hospital. The approximately 193,476-gsf building occupies the block frontage on Fifth Avenue and extends 150 feet east on East 105th and East 106th Streets. The steel-framed building has an X-plan, with four 11-story wings that extend from an octagonal 12-story central core. At the time of construction, the hospital's form was innovative for allowing light and air in to each hospital room and making hospital functions centralized and more efficient (see Views 5 and 6 of **Figure E-4**). The wings were designed with individual rooms with private bathrooms, which was accomplished by eliminating hospital wards throughout the building except for pediatric wards on the second floor. The building has a rusticated two-story limestone base, which includes arched windows at the first floor. The primary entrance is recessed from Fifth Avenue by a semicircular driveway and landscaping. On East 105th and East 106th Streets, the building has two-story structures built to the sidewalks that connect the building wings. Above the base, the building's X-shaped wings are faced in buff-colored stucco with rusticated limestone quoins at the corners. The building was designed with a large solarium in the central octagonal-shaped portion that rises above the wings, surrounded by a circular outdoor loggia. This central loggia provided access to four rooftop terraces, located on the wings of the building. Open-air loggias facing Fifth Avenue were provided on each floor. Prior exterior alterations to the FHH Building include the replacement of all of the building's windows; physical connections between the FHH Building and the Medical College/Annex Building to the east at the basement through eighth floors, created in 1938–1939; and the open air loggias on the second through eighth floors fronting on Fifth Avenue were modified sometime after 1940 with the installation of glazed windows. Interior alterations have also been made throughout the building as the interior spaces have changed use over time.

View southwest to the Cohen Building **3**

View northwest to the Garage Building **4**

View northeast to the FHH Building **5**

View southwest to the Annex and FHH Building **6**

Project Area
Figure E-4

STUDY AREA

KNOWN ARCHITECTURAL RESOURCES

Central Park (NHL, S/NR, NYC Scenic Landmark) extends from Fifth Avenue to Central Park West between 59th Street and 110th Street and comprises 840 acres. In the mid-19th century, Frederick Law Olmsted and Calvert Vaux designed Central Park, the first large-scale public park in the United States. The park was planned as a naturalistic landscape in which urban dwellers of all backgrounds could mingle and find respite from the pressures of city life. Central Park had a wide-reaching influence on subsequent park design throughout the country. Development of Central Park was undertaken between 1857 and 1873. Among the major features of the park are the 33-acre Sheep Meadow; the 1,200-foot-long Mall flanked by an allée of American elm trees (*Ulmus americana)*; Bethesda Terrace with a fountain by Vaux and the sculpture, Angel of the Waters of Bethesda, by Emma Stebbins; the Lake; the forested 30-acre Ramble; the formal six-acre Conservatory Garden; the Vanderbilt Gates at the Fifth Avenue entrance to the Conservatory Garden; and the Harlem Meer (see Views 7 and 8 of **Figure E-5**).

El Museo del Barrio (former The Heckscher Foundation for Children) (S/NR-eligible) is located at 1230 Fifth Avenue between East 104th and East 105th Streets. This six-story building was designed by architects Maynicke & Franke and built in 1921–1922. It is a Classical Revival-style building with an H-shaped plan. The building has a buff-colored stone base and detailing and is faced in red brick (see View 9 of **Figure E-6**). The building was built to house the Heckscher Foundation and the New York Society for the Prevention of Cruelty to Children and included classrooms, dormitory rooms, offices, a gymnasium, an indoor pool, a rooftop playground, and a theater. Many of these building features remain intact.

The Museum of the City of New York (S/NR-eligible, NYCL) occupies the blockfront at 1220-1227 Fifth Avenue facing Central Park. Built between 1929 and 1930, the five-story red brick-clad building was designed by architect Joseph J. Freedlander in the late Georgian/Georgian Revival-style (see View 10 of **Figure E-6**). The building has a symmetrical U-shaped plan with a raised courtyard opening onto Fifth Avenue and Central Park. The building's primary entrance is accessed by a wide stair that leads to a pedimented pavilion with an Ionic portico. The red brick façades contrast with white marble detailing, including quoins, water tables, and cornices.

Public School/Intermediate School (P.S./I.S.) 171 Patrick Henry School (S/NR-eligible, NYCL-eligible), located at 19 East 103rd Street, is a five-story Collegiate Gothic-style school built in 1898. The school was designed by C.B.J. Snyder who was the Superintendent of School Buildings for the New York City Board of Education between 1891 and 1923, at a time when the City was undergoing an educational reform movement in response to the growing school-age population. The building is located midblock and has an H-plan with wide courtyards opening onto East 103rd and East 104th Streets. The building is faced in tan brick and has rusticated limestone window and entrance surrounds, and decorative projecting dormers. The large multi-light windows are grouped in threes (see View 11 of **Figure E-7**). In comments dated October 24, 2018, LPC determined that P.S./I.S. 171 appears NYCL-eligible (see **Appendix 1**, "Agency Correspondence").

The Carver Houses (S/NR-eligible) occupy the blocks bounded by East 99th and East 106th Streets between Madison and Park Avenues (see Views 12 and 13 of **Figure E-7**). This large building and grounds complex comprises 13 residential buildings on 14.63 acres and was built by the New York City Housing Authority (NYCHA) as part of the public housing development initiative undertaken across the country after World War II. The buildings were designed by Kahn & Jacobs and completed in 1958 but underwent substantial renovations in 1964 by architects

View to the Harlem Meer in Central Park **7**

View northeast from Central Park's Conservatory Garden toward the FHH Building **8**

View southeast to El Museo del Barrio **9**

View southeast to the Museum of the City of New York **10**

View to P.S./I.S. 171's south façade **11**

View east to the Carver Houses **12**

View northeast to the Carver Houses **13**

Study Area
Figure E-7

Pomerance & Breines and landscape architect M. Paul Friedberg. The buildings are faced in red or tan brick and include 15-story X-plan towers and six-story rectangular-plan buildings. The site plan follows a "Towers in the Park" concept with a landscape plan that includes a plaza, grassy lawns, mature trees, play areas, and a 1,500-seat amphitheater.

POTENTIAL ARCHITECTURAL RESOURCES

The Lakeview Apartments, located at 1250 Fifth Avenue/4 East 107th Street, occupy the block bounded by Fifth and Madison Avenues between East 106th and East 107th Streets (see Views 14 and 15 of **Figure E-8**). The apartment complex was designed by the firm Gruzen & Partners in association with Castro-Blanco Piscioneri & Feder, a firm that specialized in public-assisted housing projects, including this building complex that was sponsored by the New York State Urban Development Corporation (UDC). The buildings were constructed in 1974–1976 and comprise two 10-story apartment buildings, two 24-story apartment buildings, a one-story parking garage, and a below-grade area that contains commercial uses. The first floor of the apartment building fronting on Fifth Avenue and East 106th Street is raised on pilotis. The buildings are faced in buff-colored concrete and stucco with paired rectangular window openings and recessed balconies on several floors. The buildings are primarily residential but also contain local businesses that open onto Madison Avenue. This building complex has an "undetermined" listing in the Cultural Resource Information System (CRIS).[3]

As noted above, the potential Fifth Avenue Historic District was approved by the State Review Board on July 30, 1980. The potential historic district was generally described as extending from 783 Fifth Avenue at East 59th Street to 1227 Fifth Avenue at East 105th Street, primarily along Fifth Avenue. However, based on a phone call with OPRHP on June 14, 2018, OPRHP determined that the potential historic district is not S/NR-eligible due to limited information available in OPRHP's records about the potential historic district and the passage of time. Several buildings in the study area are located within the potential Fifth Avenue Historic District. These buildings, which are conservatively identified as potential historic architectural resources, are described below and shown in **Figures E-9 through E-11**.

The six-story tenement building at 21-23 East 104th Street has an I-shaped form and is faced in brown brick and has limestone detailing, including window surrounds and scrolled keystones, sills, and splayed lintels. The building has two fire escapes extending from the second through sixth floors. The building's central entrance and ground floor have been altered, removing original detailing (see View 16 of **Figure E-9**).

Like 21-23 East 104th Street, the six-story apartment building at 29 East 104th Street has an I-shaped form and is faced in brown brick and has limestone detailing, including window surrounds and scrolled keystones, sills, and splayed lintels. The building has two fire escapes extending from the second through sixth floors. A central entrance is accessed by a low stair and is flanked by two storefronts (see View 17 of **Figure E-9**).

The paired six-story tenements at 14-20 East 105th Street are faced in rusticated stucco at the raised base, with red brick cladding above. The buildings have modest, altered stoops and doors but the primary entrance of each building has a decorative egg and dart surround topped by a flat pediment with scrolled brackets. The windows are narrow and arched with scrolled jack arches. The second through sixth floor of each building has limestone window surrounds with fluted

[3] OPRHP's CRIS accessed on June 19, 2018.

View northeast to the Lakeview Apartments **14**

View southwest to the Lakeview Apartments **15**

Study Area
Figure E-8

Potential Fifth Avenue Historic District – 21-23 East 104th Street **16**

Potential Fifth Avenue Historic District – 29 East 104th Street **17**

Potential Fifth Avenue Historic District –
14-20 East 105th Street **18**

Potential Fifth Avenue Historic District – **19**
22-26 East 105th Street

Potential Fifth Avenue Historic District – 1-19 East 107th Street **20** columns flanking the second floor windows and highly decorative panels above. Similarly decorative limestone panels and broken pediments establish the lintels above the windows. The buildings also have fire escapes extending from the second through the sixth floor. The 14-16 East 105th Street building has a bracketed projecting cornice; the 18-20 East 105th Street building is missing its cornice (see View 18 of **Figure E-10**).

The paired six-story tenements at 22-26 East 105th Street are faced in brown brick and have central entrances. The first floor of each building has been substantially altered with infill and non-original window openings. In contrast, the second and sixth floors are characterized by decorative terra-cotta window surrounds and brackets. The third through fifth floors have more modest terra-cotta detailing with flat arch terra-cotta lintels. The cornice of each building is of modest brickwork (see View 19 of **Figure E-10**).

The grouping of five six-story tenements at 1-19 East 107th Street occupies a midblock site between Fifth and Madison Avenues. Each building is faced in buff-colored rusticated limestone at the base, with buff-colored brick cladding on the upper floors. Each building has a low stair and an entrance flanked by marble columns with Corinthian capitals and a projecting portico with floral motifs. The windows at the first floor are single and paired within arched openings and with scrolled brackets above. At the second floor, the windows have decorative surrounds, including pilasters, terra-cotta, pediments, and scrolls. The upper floors also have heavy lintels with rounded and pointed pediments and scrolled brackets. Fire escapes extend from the second floor to the sixth floor. The cornice is missing from each building (see View 20 of **Figure E-11**).

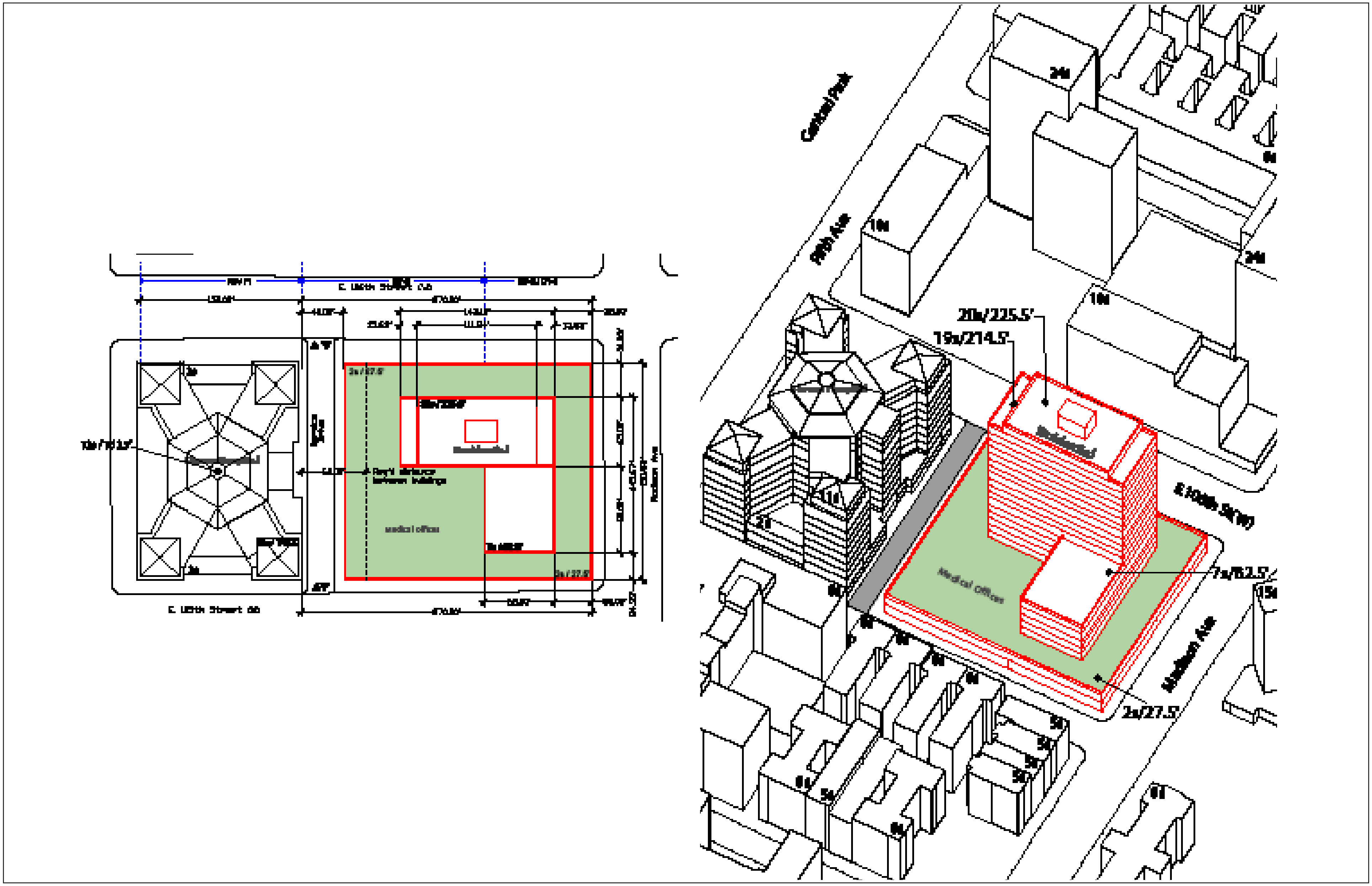
D. FUTURE WITHOUT THE PROPOSED ACTIONS

PROJECT AREA

Absent the Proposed Actions, it is assumed that the Applicant will discontinue operations at the TCC and sell the FHH and Development Sites (see **Figure E-12**). It is assumed that the FHH Building will remain and will be adaptively reused for residential use, accommodating 215 dwelling units (DUs) and that the three existing buildings on the Development Site will be demolished. It is expected that an L-shaped, 7- and 20-story, mixed-use primarily residential building will be constructed that will have a two-story base built to the lot lines, with frontages on East 105th and East 106th Streets and Madison Avenue, and retail space along the Madison Avenue frontage. The building's taller L-shaped portion is expected to contain DUs, with the 20-story tower oriented east-west along East 106th Street and the seven-story portion oriented north-south along Madison Avenue. The building's L-shaped tower will be set back above the lower height base, which is expected to contain medical offices at the midblock portion and an enclosed parking garage. The building is anticipated to be separated from the FHH Building by a 40-foot-wide service drive. With the demolition of the Annex, it is expected that the FHH Building's east façade will be sealed at the locations of the corridor connections. Any repair to the affected area of the FHH Building's east façade will be undertaken as necessary and will be appropriate to the building's overall appearance. The building's façades are expected to be cleaned and repaired as needed, with interior alterations made to accommodate programming changes associated with the building's reuse for residential purposes.

Absent the Proposed Actions, it is possible that the S/NR-eligible FHH Building could become S/NR-listed. The FHH Building could also be determined NYCL-eligible or could be calendared for a NYCL designation hearing.

12.6.18



Source: Michael Kwartler and Associates

No Action Site Plan & Axonometric View Looking North
Figure E-12

STUDY AREA

Within the study area, there are no new projects which are expected to be completed and in operation by the 2025 analysis year apart from two residential rehabilitation projects.

The status of architectural resources could change in the Future without the Proposed Actions (the "No Action" condition). S/NR-eligible architectural resources could be listed on the S/NR and NYCL-eligible properties could be calendared for a designation hearing. It is possible that some architectural resources in the study area could deteriorate, while others could be restored. In addition, future projects could affect the settings of architectural resources, or accidentally damage such resources through adjacent construction.

E. FUTURE WITH THE PROPOSED ACTIONS

PROJECT AREA

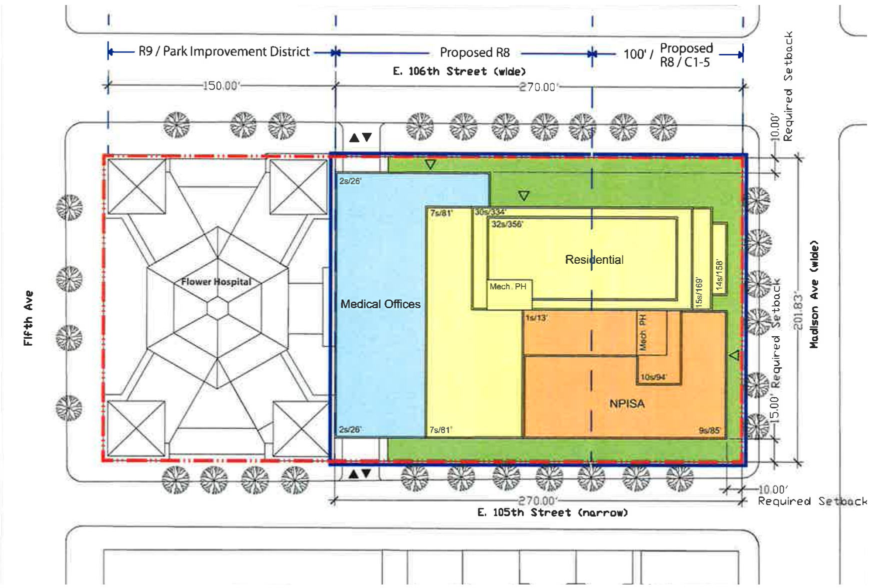
In the Future with the Proposed Actions (the "With Action" condition), under both With Action Scenario 1 and With Action Scenario 2, the Annex, Cohen Building, and parking garage would be demolished, the eastern portion of the Project Area would be redeveloped, and the FHH Building would be retained for hospital and long-term care facility or residential uses.

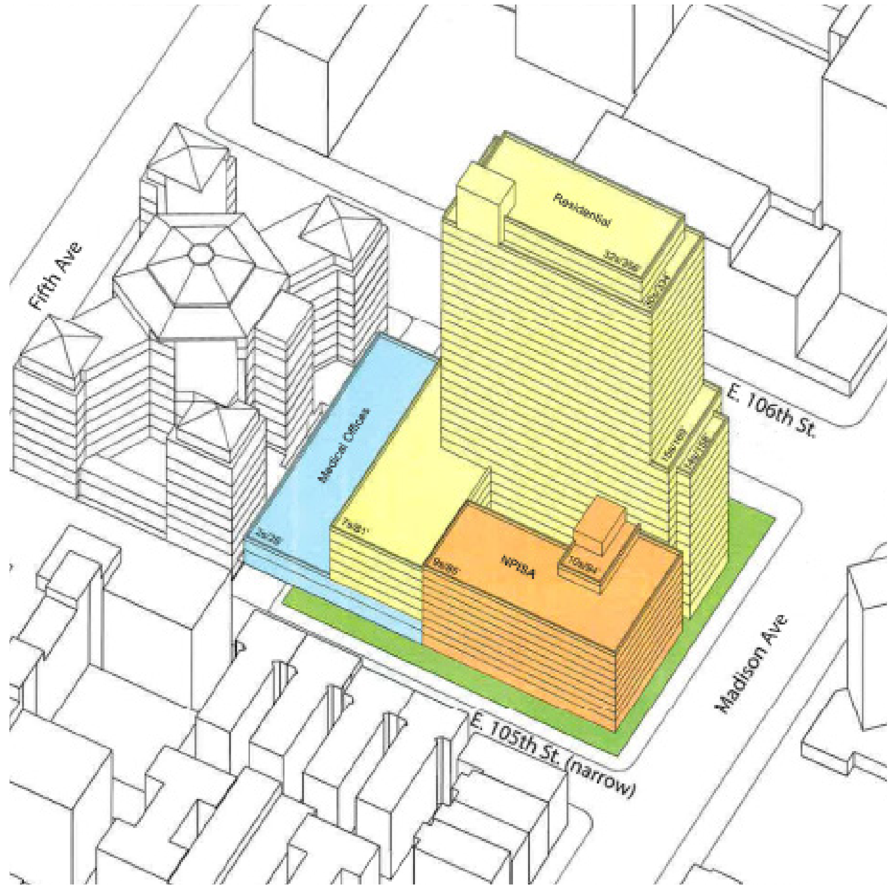
WITH ACTION SCENARIO 1

Under With Action Scenario 1, the FHH Building would be rehabilitated to accommodate a hospital and long-term care facility, which would involve interior alterations. Similar to the No Action condition, in With Action Scenario 1, the building's façades would be cleaned and repaired as needed. In addition, similar to the No Action condition, the FHH Building's east façade would be sealed and repaired as needed in the areas affected by the demolition of the Annex. Any repair to the affected area of the FHH Building's east façade would be undertaken to be appropriate to the building's overall appearance.

In With Action Scenario 1, the new buildings that would be constructed on the Development Site would be set back from the East 105th Street sidewalk by 15 feet, from the Madison Avenue sidewalk by 10 feet, and from the East 106th Street sidewalk by at least 10 feet. The parking garage at the southeast corner of the Development Site would be demolished and redeveloped with the 10-story senior housing development that would have frontages on East 105th Street and Madison Avenue. The building would rise without setbacks (except at the tenth story). In Phase 2, the Annex and the Cohen Building would be demolished. The midblock portion of the Development Site would be redeveloped with a two-story medical office building that would abut the east façade of the FHH Building's base. The Cohen Building site would be redeveloped with a new 32-story residential tower. It would rise 14 and 15 stories, set back at the east façade, then rise to 30 stories, and set back before reaching the overall 32-story height. The residential tower would also have a seven-story wing located midblock that would extend to the south (see **Figure E-13**).

The façade repair to the FHH Building would not adversely affect this known historic resource as the Proposed Actions would not be expected to involve modifications that would remove visually prominent façade elements that characterize the building. Further, the removal of the Annex would establish visibility of the FHH Building's east wings from nearby vantage points on East 105th and East 106th Streets because the new buildings that would be developed on the eastern portion of the Project Area would be set away from the FHH Building above the base. The new development on the eastern portion of the Development Site would not block any significant





Source: Michael Kwartler and Associates

Scenario 1 Site Plan & Axonometric View Looking North

Figure E-13

public views of the FHH Building or any other nearby historic resources. Further, the new development would not isolate the FHH Building from its setting or adversely affect the FHH Building's relationship to the streetscape. While the new development would alter the setting of the FHH Building, these changes would be visually compatible with the FHH Building.

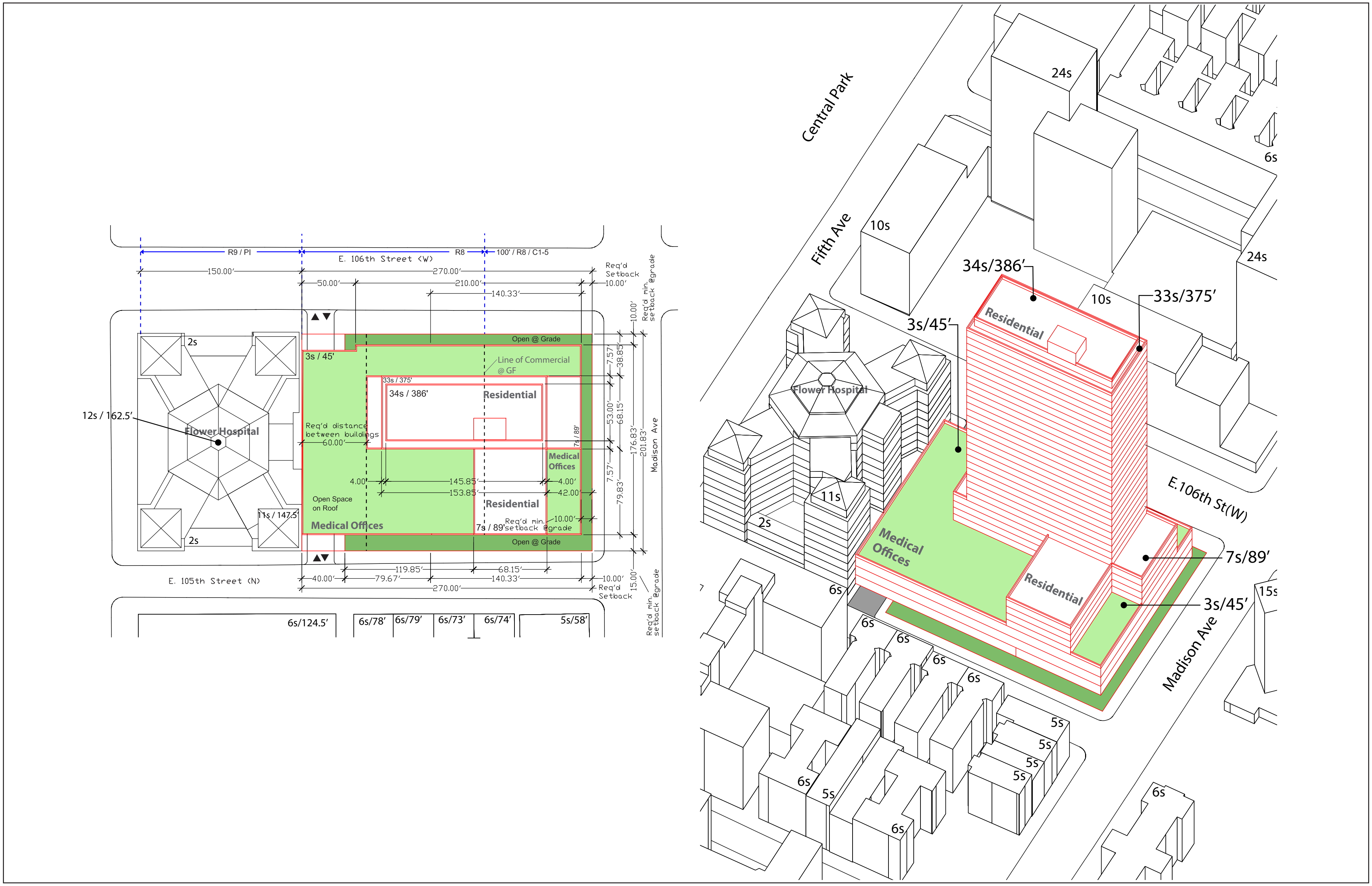
Since the FHH Building has been determined by LPC to appear S/NR-eligible, to avoid the potential for inadvertent adverse physical impacts to the FHH Building during construction—such as ground-borne vibrations, falling debris, and damage from heavy machinery—the Applicant (and/or a future developer), in coordination with a professional engineer, would develop and implement a Construction Protection Plan (CPP) in consultation with LPC prior to construction. The CPP would follow the requirements established in the DOB's *TPPN #10/88*, concerning procedures for the avoidance of damage to adjacent historic structures from nearby construction. The CPP would also follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*, including conformance with LPC's *Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. Apart from the FHH Building, as there are no other known or potential historic resources in the Project Area, the Proposed Project in With Action Scenario 1 would not have the potential to adversely affect any such resources.

WITH ACTION SCENARIO 2

In With Action Scenario 2, the FHH Building would be adaptively reused as a residential building, which would involve interior alterations. Similar to both the No Action condition and With Action Scenario 1, the FHH Building's east façade would be sealed and repaired as needed in the areas affected by the demolition of the Annex. The building's façades would be cleaned and repaired as needed. In addition, any repair to the affected area of the FHH Building's east façade would be undertaken as needed and would be appropriate to the building's overall appearance.

In With Action Scenario 2, buildings on the eastern portion of the Development Site would be demolished and the Development Site would be redeveloped with a new building with a three-story base that would extend across most of the Development Site. It would be set back 10 feet from Madison Avenue and East 106th Street and 15 feet from East 105th Street. The midblock portion would contain medical offices that would abut the east façade of the FHH Building. Above the base, a new 34-story residential tower would be built parallel to East 106th Street, with seven-story wings extending west, south, and east. The tower portion would be set back approximately 40 feet from the East 106th Street and Madison Avenue sidewalks and would have setbacks at the seventh and 33rd stories (see **Figure E-14**).

As in With Action Scenario 1, With Action Scenario 2 would also result in façade repairs to the FHH Building, which would not adversely affect this known historic resource as the Proposed Actions would not be expected to involve modifications that would remove visually prominent façade elements that characterize the building. Further, the removal of the Annex would establish visibility of the FHH Building's east wings from nearby vantage points on East 105th and East 106th Streets because the new buildings that would be developed on the eastern portion of the Project Area would be set away from the FHH Building above the base. The new development on the eastern portion of the Development Site would not block any significant public views of the FHH Building or any other nearby historic resources. The new development would not isolate the FHH Building from its setting or adversely affect the FHH Building's relationship to the streetscape. While the new development would alter the setting of the FHH Building, these changes would not be visually incompatible with the FHH Building.



Source: Michael Kwartler and Associates

Scenario 2 Site Plan & Axonometric View Looking North

Figure E-14

TERENCE CARDINAL COOKE REZONING

As in With Action Scenario 1, in With Action Scenario 2, the Applicant (and/or a future developer), in coordination with a professional engineer, would develop and implement a CPP in consultation with LPC prior to construction to avoid the potential for inadvertent adverse physical impacts to the FHH Building during construction. As described above, the CPP would follow the requirements established in the DOB's *TPPN #10/88* and would follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*.

Apart from the FHH Building, as there are no other known or potential historic resources in the Project Area, With Action Scenario 2 would not have the potential to adversely affect any such resources.

STUDY AREA

In the With Action condition, no architectural resources in the study area would be demolished, damaged, altered, or neglected. The historic architectural resources located within 90 feet of the Development Site include El Museo del Barrio, four apartment buildings on East 105th Street located within the potential Fifth Avenue Historic District, and a small part of the grassy lawn area of the Carver Houses complex.[4] In addition, a small area of Central Park is located within 90 feet of the FHH Building, across Fifth Avenue. The CPP to be developed for the Proposed Project in With Action Scenario 1 and for With Action Scenario 2 would include measures to protect these historic architectural resources from inadvertent construction-related damage. Therefore, the Proposed Actions would not result in any direct impacts to any of the architectural resources in the study area.

The Proposed Actions' potential to result in indirect, or contextual, impacts, was also evaluated. Indirect impacts could result from blocking significant public views of a resource; isolating a resource from its setting or relationship to the streetscape; altering the setting of a resource; introducing incompatible visual, audible, or atmospheric elements to a resource's setting; or introducing shadows over a historic landscape or an architectural resource with sunlight-sensitive features that contribute to that resource's significance, such as a church with notable stained glass windows.

The renovation or adaptive reuse of the FHH Building would not adversely affect any historic architectural resources in the study area as the changes to the FHH Building would be primarily limited to interior alterations. The exterior modifications to the FHH Building would be limited to façade repair and cleaning as needed and the alterations to the east façade of the building in the area where the Annex connection would be sealed. These limited changes to the FHH Building would not be expected to adversely affect the context of nearby architectural resources as these changes would not obstruct or adversely alter views or the context of architectural resources in the study area. Further, with either With Action Scenario 1 or With Action Scenario 2, the removal of the Annex would provide visibility of the FHH Building's east façade from nearby historic resources on East 105th and East 106th Streets, including El Museo del Barrio, a known historic resource, the apartment buildings on East 105th Street within the potential Fifth Avenue Historic District, and the Lakeview Apartments on East 106th Street, which are potential historic resources.

The new buildings that would be developed on the eastern portion of the Project Area in either With Action Scenario 1 or With Action Scenario 2 would not be expected to adversely impact any nearby historic architectural resources. While the new residential tower that would be developed in either scenario would be taller than the Cohen Building that it would replace, the residential tower would be located within the context of other tall buildings from different periods of

[4] As described in "Existing Conditions," the Carver Houses complex occupies a 14.63-acre site that includes 13 buildings, a plaza, grassy lawns, mature trees, play areas, and a 1,500-seat amphitheater.

development and, therefore, would not adversely affect the context of nearby historic resources in the study area. Views to the Lakeview Apartments and the Carver Houses, located across East 106th Street and Madison Avenue, respectively, would remain available from existing vantage points as these building complexes include multiple buildings on large sites. While the context of certain buildings in these building complexes located closest to the Project Area would be altered with the addition of the new development on the Project Area, the new development would not adversely affect any significant public views to these historic resources.

El Museo del Barrio's primary façade is on Fifth Avenue, with wings extending east-west on East 105th and East 104th Streets. No significant public views of El Museo del Barrio would be adversely affected as views of this resource from Fifth Avenue would remain available from the FHH Building. The addition of the taller building on the eastern portion of the Project Area would be located away from El Museo del Barrio's primary façade and would not block any significant public views of this resource. El Museo del Barrio would not be isolated from its setting and its relationship with the streetscape and its setting would not be adversely affected. Therefore, the Proposed Project in With Action Scenario 1 would be compatible with this historic resource.

The four apartment buildings on East 105th Street, located within the potential Fifth Avenue Historic District, are located across from the Project Area and would not be adversely affected by the Proposed Actions. These buildings are located midblock and views to these buildings are already limited to the adjacent sidewalks. Therefore, public views to these potential historic resources would not be blocked. In addition, these buildings would not be isolated from their setting or relationship to the streetscape. The redevelopment of the eastern portion of the Project Area with new buildings would not adversely affect these potential architectural resources. The context of these buildings within the potential Fifth Avenue Historic District would not be adversely affected, as they pre-date the development of the existing buildings on the eastern portion of the Development Site and would continue to provide a contrast in building design and materials.

The two apartment buildings on East 104th Street and the grouping of five buildings on East 107th Street, which are located within the potential Fifth Avenue Historic District, are located away from the Project Area, beyond intervening buildings. In addition, the buildings are low in scale. These buildings do not have a meaningful contextual relationship with the Project Area. Therefore, the Proposed Actions would not adversely affect these buildings within the potential historic district.

The Museum of the City of New York's primary façade is oriented on Fifth Avenue, with wings extending east-west on East 104th and East 103rd Streets. Due to intervening buildings and the museum's primary façade oriented toward Fifth Avenue, this building does not have a meaningful contextual relationship with the Project Area. Therefore, the Proposed Actions would not adversely affect this historic architectural resource.

P.S./I.S 171 Patrick Henry School is located on a midblock site south of the Project Area. As with the Museum of the City of New York and the apartment buildings on East 104th Street within the potential Fifth Avenue Historic District, P.S./I.S. 171 Patrick Henry School does not have a meaningful contextual relationship with the Project Area due to intervening buildings and the building's midblock location. Therefore, the Proposed Actions would not adversely affect this historic architectural resource.

The Proposed Actions would not result in development that would block significant public views to the portion of Central Park located within the study area. Further, the adaptive reuse of the FHH Building would not result in substantial exterior alterations and would therefore not affect Central Park's contextual relationship with the FHH Building. The exterior modifications to the FHH

Building would affect the building's east façade which is not visible from Central Park. The proposed buildings on the Development Site would alter more distant views from the portion of the study area in Central Park toward the Project Area, however, there is no existing meaningful contextual relationship between Central Park and the Development Site due to distance and the intervening FHH Building. Further, the proposed buildings would be consistent with other nearby tall buildings in the study area. Central Park would not be isolated from its setting or relationship to the streetscape and the park's setting would not be altered with the Proposed Actions. The proposed buildings on the Development Site would be compatible with Central Park.

As described in Attachment D, "Shadows," the new residential tower would not introduce significant new shadows that would affect the historic architectural resources in the study area. Although the new building would cast new shadow on portions of Central Park within the architectural resources study area, the new shadow would not be of a duration or extent to result in significant adverse shadow impacts. In addition, the new shadow cast on the Carver Houses complex would also not be of a duration or extent to result in significant adverse shadow impacts on this resource. No other historic architectural resources in the architectural resources study area have sunlight-sensitive features. Therefore, Proposed Actions would not result in any adverse visual or contextual impacts to the historic architectural resources.

F. CONCLUSION

Overall, the Proposed Actions would not result in significant adverse impacts to historic and cultural resources within the study area. ✷

A. INTRODUCTION

This attachment considers the potential of the Proposed Actions to affect the urban design and visual resources of the study area.

As described in Attachment A, “Project Description,” the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the “Project Area”) (see **Figures F-1 and F-2**).

The Proposed Actions would facilitate the consolidation and modernization of TCC’s skilled nursing facility and specialty hospital (the “Joint Long-Term Care and Hospital Facility”) at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the “FHH Site”), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the “Rezoning Area” or “Development Site”). The Development Site would be developed with a nonprofit senior supportive housing development (the “Senior Building”), a new residential building, and medical office use for TCC’s Program of All-Inclusive Care for the Elderly (collectively, the “Proposed Project”). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the Environmental Assessment Statement (EAS) considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant’s Proposed Project (“With Action Scenario 1”); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use (“With Action Scenario 2”).

As defined in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, urban design is the totality of components that may affect a pedestrian’s experience of public space. These components include streets, buildings, visual resources, open spaces, natural resources, and wind. An urban design assessment under CEQR must consider whether and how a project may change the experience of a pedestrian. *CEQR Technical Manual* guidelines recommend the preparation of a preliminary assessment of urban design and visual resources, followed by a detailed analysis, if warranted based on the conclusions of the preliminary assessment. The following preliminary assessment addresses the urban design and visual resources of the study area for existing conditions, the Future without the Proposed Actions (the “No Action” condition), and the Future with the Proposed Actions (the “With Action” condition) in 2025 when development facilitated by the Proposed Actions is expected to be completed.

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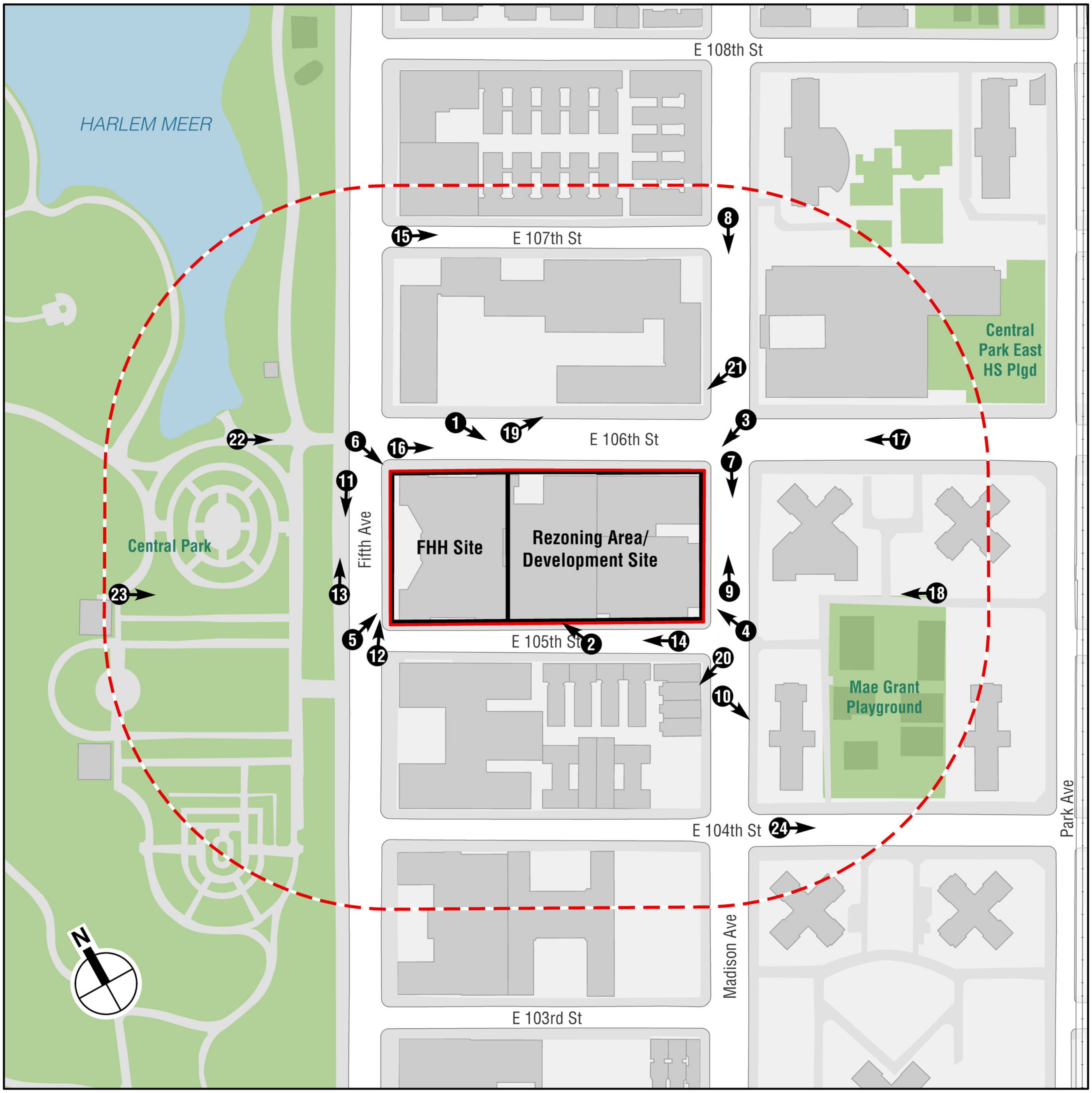


Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

Photograph View Direction and Reference Number

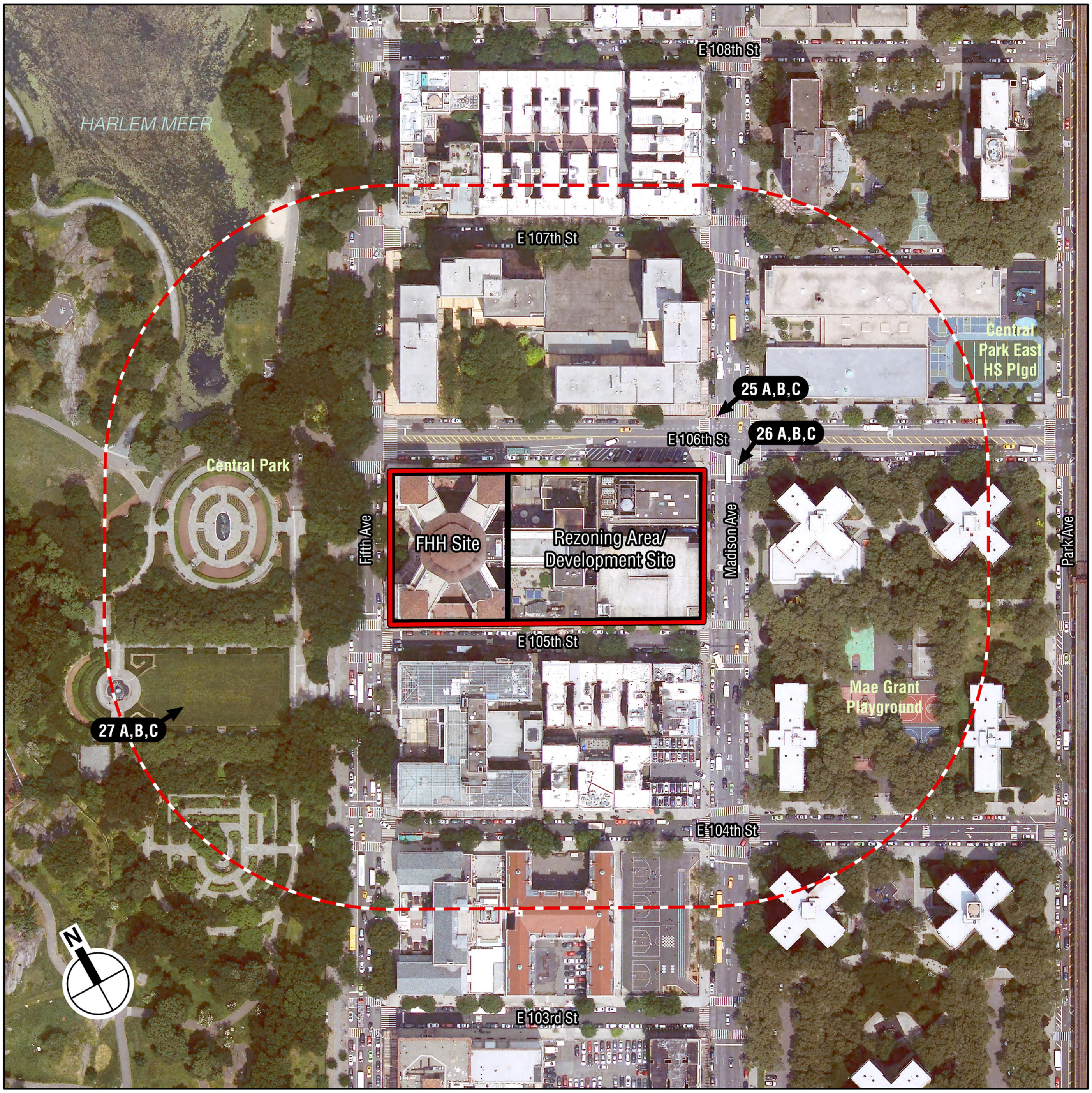
0 200 FEET

Urban Design and Visual Resources Reference Map

Figure F-1

TERENCE CARDINAL COOKE REZONING

12.6.18



Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

25 A,B,C Photograph View Direction and Reference Number

0 200 FEET

As described below, this preliminary assessment concludes that the Proposed Actions would not result in any significant adverse impacts to urban design or visual resources. Development facilitated by the Proposed Actions would be compatible with the urban design of the study area, and would not adversely impact the pedestrian experience and no further analysis is warranted.

B. METHODOLOGY

Based on the *CEQR Technical Manual*, a preliminary assessment of urban design and visual resources is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning. Examples include projects that permit the modification of yard, height, and setback requirements, and projects that result in an increase in built floor area beyond what would be allowed "as-of-right" or in the No Action condition. The Proposed Actions would result in physical alterations, which are not allowed by existing zoning, to the Project Area, and which would be observable by pedestrians. Therefore, development facilitated by the Proposed Actions meets the threshold for a preliminary assessment of potential impacts to urban design and visual resources.

According to the *CEQR Technical Manual*, the study area for urban design is the area where the project may influence land use patterns and the built environment, and is generally consistent with that used for the land use analysis. For visual resources, the view corridors within the study area from which such resources are publicly viewable should be identified. Consistent with CEQR methodology, the study area for the urban design and visual resources analysis has been defined as the area within 400 feet of the Project Area (see **Figure F-1**).

The *CEQR Technical Manual* recommends an analysis of pedestrian wind conditions for projects that result in the construction of large buildings at locations that experience high wind conditions. The Proposed Actions would not result in the construction of a large building at a location that experiences high wind conditions, thus a pedestrian wind condition analysis is not warranted.

C. EXISTING CONDITIONS

PROJECT AREA

URBAN DESIGN

The Project Area contains four buildings occupying the entirety of the block bounded by Madison and Fifth Avenues and East 105th and East 106th Streets. The Rezoning Area/Development Site occupies the eastern portion of the block and includes the Annex, the Cohen Building, and a parking garage. The FHH Building occupies the western portion of the block (see **Figures F-1 and F-2**).

The nine-story Annex (Block 1611, p/o Lot 1) is a through-block, midblock building with façades on both East 105th and East 106th Streets. The approximately 192,080-gross-square-foot (gsf) building contains 78 beds, dialysis facilities, occupational and physical therapy offices, a chapel, and a 50-bed specialty hospital. It connects at all floors to the FHH Building to the west and the Cohen Building to the east. At street level on East 106th Street, the Annex has a wide, three-bay two-story base at the east end of the building and a wide staircase that extends from the deeply recessed façade to the lot line at the west end of the building (see **Figure F-3**, photos 1 and 2). The two-story, brick-clad base has three large, vertically oriented windows above the ground level, separated from the lower portion by a stone stringcourse. The Annex rises an additional seven stories beyond the two-story base and is substantially set back from East 106th Street in an L-shaped plan.

Annex and Cohen Building, view from the sidewalk on East 106th Street **1**

Flower Hill Hospital Building and Annex frontages on East 105th Street **2**

Existing Conditions Photographs: Project Area

The upper stories are faced in painted brick and have paired punched windows at each bay. The Annex's primary entrance is accessed by two sets of wide, concrete stairs separated by a landing and private outdoor plaza at the elevated level that provides access to the building. The plaza area is separated from the lower stair by a tall metal fence. The Annex's East 105th Street frontage is a six-story building that includes a two-story portion faced in buff-colored brick that is built to the lot line. The two-story portion has larger punched window openings. The upper four stories are clad in corrugated metal below horizontal banded windows.

The Cohen Building (Block 1611, p/o Lot 1) is located at the northeast corner of the Project Area at East 106th Street and Madison Avenue, with its primary, north façade and entrance on East 106th Street, and a secondary façade on Madison Avenue to the east. The 10-story building has a slab-like rectangular form and contains approximately 108,862 gsf. At the ground floor, the building's north and east façades are faced in brown polished stone. Above the base, the building is faced in buff-colored brick with narrow rows of vertical window bays on the north and south façades (see **Figure F-4**, photo 3). The narrow vertical bays on the building's west and east façades contain metal panels but no windows. The only windows on the east façade are above pedestrian height at the base. A sidewalk shed currently covers the building's north and east façades at the ground floor.

An approximately 85,182-gsf parking garage (Block 1611, Lot 15) with six levels of open air parking with horizontal corrugated metal cladding is located at the northwest corner of Madison Avenue and East 105th Street (see **Figure F-4**, photo 4). The garage's ground floor is in use for as a storage area. The garage entrance opens onto Madison Avenue with a roll down metal gate.

The western portion of the Project Area is developed with the FHH Building, which occupies the full Fifth Avenue frontage (Block 1611, p/o Lot 1). The building contains approximately 193,476 gsf, with an approximately 200-foot-long Fifth Avenue façade, and a 150-foot-long façade on both East 105th and East 106th Streets. The FHH Building, which opened in 1922, has an X-shaped plan and consists of a raised two-story rusticated stone base, with four 11-story wings that connect to an octagonal 12-story central tower reaching 163 feet. The building's X-shaped form creates an exterior court on Fifth Avenue, and exterior courts above the base on East 105th and East 106th Streets. The rusticated base has arched first-floor windows (see **Figure F-5,** photos 5 and 6). The building's upper stories are clad in buff-colored stucco, with a row of arched windows under the bracketed cornice. A sidewalk shed covers the ground floor of the building along its street frontages. There is also scaffolding and netting covering the full height of the building on the recessed portion of the west façade, and at the building's northeast and southeast corners. As described in Attachment E, "Historic and Cultural Resources," the FHH Building was determined by the New York City Landmarks Preservation Commission (LPC) to appear eligible for listing on the State/National Registers of Historic Places (S/NR-eligible) (see **Appendix 1**, "Agency Correspondence").

STUDY AREA

Mid-rise and high-rise residential buildings, museums, schools, and parks characterize the study area. The topography is relatively flat. The street pattern is a typical Manhattan grid, with wider avenues running north-south and narrower cross streets running east-west. All cross streets terminate at Fifth Avenue to the west. East 105th and East 107th Streets extend only one block in the study area, between Madison and Fifth Avenues. The blocks between Fifth and Madison Avenues are rectangular in shape, with the shorter ends of the blocks facing the avenues and the longer ends facing the east-west streets. Central Park lies to the west of Fifth Avenue. Two superblocks containing the Carver Houses, a New York City Housing Authority (NYCHA) residential building complex, are located east of Madison Avenue with portions both north and

Cohen Building, view from the northeast on Madison Avenue and East 106th Street **3**

Vacant parking garage on Project Area, view from the southeast at Madison Avenue and East 105th Street **4**

Existing Conditions Photographs: Project Area

Figure F-4

Flower Hill Hospital Building, view from the southwest on Fifth Avenue and East 105th Street **5**

Flower Hill Hospital Building, view from the northwest on Fifth Avenue and East 106th Street **6**

Existing Conditions Photographs: Project Area

Figure F-5

south of East 106th Street (see **Figures F-1 and F-2**). Street furniture within the study area includes modern street lamps; traffic lights; bus stop signs; fire hydrants; trash cans; bike racks; newspaper boxes; mailboxes; and sidewalk fences.

Madison Avenue is an 80-foot-wide, northbound street that carries five lanes of one-way traffic, with parking along the outer lanes (see **Figure F-6**, photos 7 through 9). The urban design character of Madison Avenue is less cohesive than the east-west streets, and includes a variety of building types, designs, and heights. Buildings on the east side of Madison Avenue are generally set back from the lot line, while most buildings on the west side of Madison Avenue are built to the lot line. As noted above, the east side of Madison Avenue is largely occupied by the Carver Houses, which include multiple brick-faced residential buildings ranging in height from 6 to 15 stories located within a landscaped setting that includes grassy lawns, mature trees, play areas, a plaza, and an amphitheater (see **Figure F-7**, photo 10 and Attachment E, "Historic and Cultural Resources" Figure E-7, photos 12 and 13). Public walkways between the residential buildings are paved with a mix of decorative pavers and poured concrete. Street trees line Madison Avenue, but are less-densely planted on the sidewalks between East 104th and East 106th Streets. The west side of Madison Avenue has a more varied urban design character, with buildings ranging in height from 5 to 24 stories, including tall apartment buildings and shorter residential buildings with ground-floor retail.

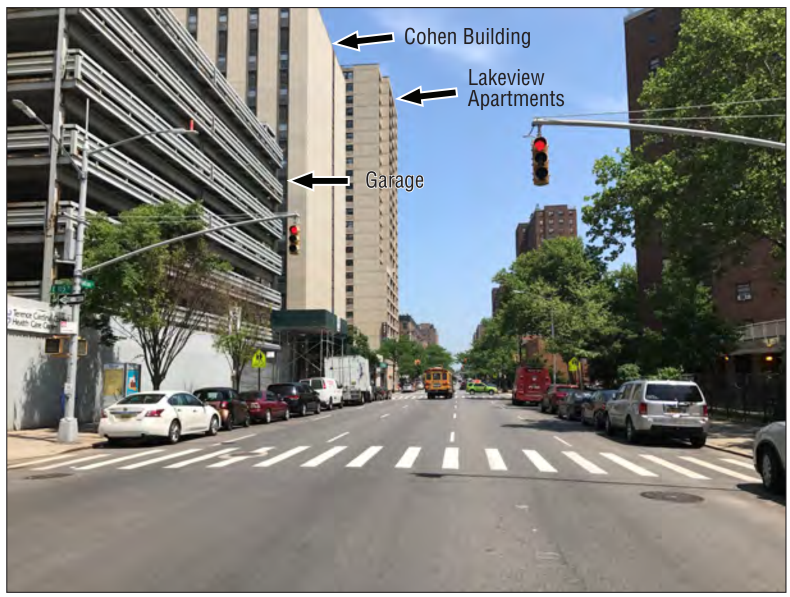
On the block south of the Project Area, the west side of Madison Avenue includes mixed-use residential and commercial buildings with ground-floor retail and a paved surface parking lot with stackers. The east façade of the five-story Public School/ International School (P.S./I.S.) 171 Patrick Henry School occupies the entire blockfront on Madison Avenue between East 103rd and East 104th Streets but is set back from Madison Avenue beyond the school's playground. The school's east façade is prominent from Madison Avenue. The Lakeview Apartments are located north of the Project Area on Madison Avenue, occupying the entire block between Fifth and Madison Avenues and East 106th and 107th Streets (see Attachment E, "Historic and Cultural Resources" Figure E-8, photos 14 and 15). The Lakeview Apartments comprise two 10-story (approximately 89-foot-tall) residential buildings, two 24-story (approximately 201-foot-tall) residential towers, a one-story parking garage, and a below-grade area that contains commercial uses. One of the 24-story towers rises from the lot line at Madison Avenue between East 106th and East 107th Streets and contains ground-floor retail along Madison Avenue and East 106th Street.

Fifth Avenue is a 100-foot-wide street that carries two lanes of south-bound traffic, plus a dedicated bus lane and a lane of curbside parking (see **Figure F-7,** photo 11, and **Figure F-8,** photos 11 and 12). Fifth Avenue runs parallel to Central Park. The urban design character of Fifth Avenue includes mid-rise buildings including six- to ten-story buildings, with many institutional buildings that generally occupy the full blockfronts, with west elevations facing Central Park. The Lakeview Apartments include buildings with ten-story and eight-story façades fronting on Fifth Avenue, with fencing at the southwest corner that encloses a plaza area within the apartment complex.

On Fifth Avenue south of the Project Area, each blockfront is also occupied by a single building. El Museo del Barrio is located between East 104th and East 105th Streets and is an H-shaped, six-story building (see Attachment E, "Historic and Cultural Resources" Figure E-6, photo 9). The museum occupies the full Fifth Avenue frontage with an open court fronting on Fifth Avenue. The building has a stone base with arched windows, with the upper stories clad in brick. The approximately 55-foot-tall, five-story Museum of the City of New York is located between East 104th and East 103rd Streets (see Attachment E, "Historic and Cultural Resources" Figure E-6, photo 10). This building's U-shaped plan also creates an open court along Fifth Avenue, slightly

Madison Avenue, view south from East 106th Street with the Project Area to the right **7**

Madison Avenue, view south from East 107th Street with the Project Area to the right in the distance **8**



Madison Avenue, view north from East 105th Street with the Project Area to the left **9**

Madison Avenue, view east from Project Area toward the Carver Houses Building Complex **10**

Fifth Avenue, view south from East 106th Street with the Project Area to the left **11**

Fifth Avenue, view north from East 105th Street with the Project Area to the right and street trees and Central Park to the left **12**

Fifth Avenue, view north on sidewalk on west side of Fifth Avenue with street trees and Central Park to the left **13** elevated above street level and accessed by a low, wide stair. This building is clad in brick with a prominent temple front on the central Fifth Avenue portion of the façade.

The sidewalks on Fifth Avenue are shaded by mature street trees (see **Figure F-8**, photos 12 and 13). Benches are located adjacent to Central Park's perimeter stone wall on the west side of Fifth Avenue , and several concrete planters are located on the east side of the street between East 106th and East 107th Streets. The sidewalk adjacent to Central Park, on the west side of Fifth Avenue, is paved with a mix of hexagonal and Belgian block pavers. A low stone wall establishes the eastern perimeter of Central Park, with a park entrance located at East 106th Street that is marked by stone piers. The gated Vanderbilt Entrance to Central Park is just south of East 105th Street and consists of a tall wrought iron gate with gilded details.

East-west streets in the study area generally have a more cohesive urban design character at the midblock, including older five- to six-story residential buildings that are built to the lot line. East 104th, East 105th, and East 107th Streets are 60-foot-wide one-way streets with one lane of traffic and curbside parking on both sides of the street (see **Figure F-9**, photos 14 and 15). Brick and stone are the primary cladding materials used for these buildings. East of Madison Avenue within the study area, the urban design of the east-west streets is largely defined by three 15-story residential towers of the Carver Houses building complex (see **Figure F-7**, photo 10 and Attachment E, "Historic and Cultural Resources" Figure E-7, photos 12 and 13).

East 106th Street is a 100-foot-wide east-west street. Also known as Julia De Burgos Boulevard, the street has a single lane of traffic in each direction, a dedicated bicycle lane, curbside parking on the north side of the street, and angled parking on a portion of the south side of the street between Fifth and Madison Avenues. The urban design of East 106th Street is characterized by modern taller buildings, including the East 106th Street façades of the 10- and 24-story Lakeview Apartments buildings and the two 15-story, approximately 135-foot-tall X-shaped towers in the Carver Houses complex (see **Figures F-10 and F-11** and Attachment E, "Historic and Cultural Resources" Figure E-7, photos 12 and 13). These buildings are clad in concrete and brick. Street furniture includes different types of streetlights—iron Type M pole streetlights (a reproduction of a historic form with scrolled brackets and a single arm) and standard cobrahead streetlights. Street furniture also includes bus stops, mailboxes, magazine stands, CityBenches, and a CitiBike docking station on the sidewalk on the south side of East 106th Street at Madison Avenue.

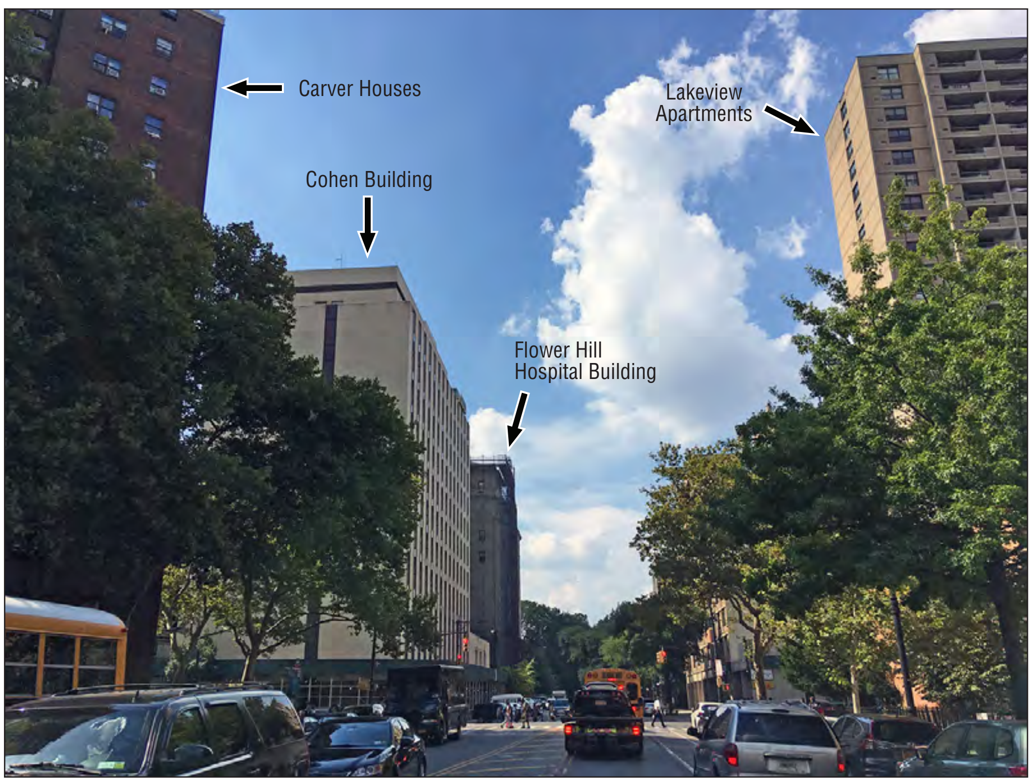
Overall, the study area is characterized by residential buildings of varying heights and architectural styles from different development periods. Six- to seven-story red brick and stone residential buildings are built to or are slightly recessed from the lot lines throughout the study area, particularly along the east-west streets. Other, taller residential buildings are located generally east of Madison Avenue and north of East 106th Street, including 10- to 24-story residential buildings. The Carver Houses residential towers on the east side of Madison Avenue occupy the superblocks between East 99th and East 106th Streets. The 15-story red brick-clad buildings and six-story yellow brick-clad buildings have X- and I-shaped forms and are set back from the street within a landscaped campus, with a playground east of Madison Avenue across from the Project Area and pedestrian walkways throughout the superblock (see **Figure F-7**, photo 10 and **Figure F-11**, photo 18). North of the Project Area, the Lakeview Apartments building at 1250 Fifth Avenue is a concrete building with tile detailing on the primary façade. The building has a 10-story base and two 24-story towers built around a central private plaza, which is separated from the sidewalk by a tall metal fence (see **Figure F-11**, photo 19 and Attachment E, "Historic and Cultural Resources" Figure E-8, photos 14 and 15).

The study area also includes five- and six-story residential buildings with ground-floor retail. North and south of the Project Area on Madison Avenue are brick-faced five-story residential

East 105th Street, view west from Madison Avenue with the Project Area to the right **14**

East 107th Street, view east from Fifth Avenue **15**

East 106th Street, view east from Fifth Avenue with the Project Area to the right **16**



East 106th Street, view west with the Project Area to the left **17**

Walkways within the Carver Houses building complex, view west toward Project Area **18**

East 106th Street, Lakeview Apartments on north side of East 106th Street across from Project Area **19** buildings with ground-floor retail (see **Figure F-12**, photo 20). The Lakeview Apartments include ground-floor commercial space with a dry cleaner and dentist on Madison Avenue and East 106th Street, directly across from the Project Area (see **Figure F-12**, photo 21).

The study area includes three school buildings. The Jackie Robinson Educational Complex at 1573 Madison Avenue is a two-story red brick building complex set back from East 106th Street and Madison Avenue beyond a low iron fence and hedges. P.S./I.S. 171 Patrick Henry School, at 19 East 103rd Street, is a through-block building with frontages on East 103rd and East 104th Streets. This tall gothic-style gray brick-faced building is located adjacent to a fence-enclosed playground that occupies the blockfront along Madison Avenue. The Reece School at 25 East 104th Street is a five-story school building brown tile cladding at the ground floor and a multicolored and clear glass curtain wall on the upper floors.

The Conservatory Garden in Central Park is located across Fifth Avenue from the FHH Building in the Project Area. The garden is divided into three sections. The central circular formal garden surrounds a fountain and is lined with hedges and flowerbeds. The flanking gardens are square in shape and contain grass lawns surrounded by boxed hedges. The eastern edge of the park, bordering Fifth Avenue, is planted with mature trees and shrubs, obscuring views of Fifth Avenue (see **Figure F-13**, photos 22 and 23).

VISUAL RESOURCES AND VIEW CORRIDORS

PROJECT AREA

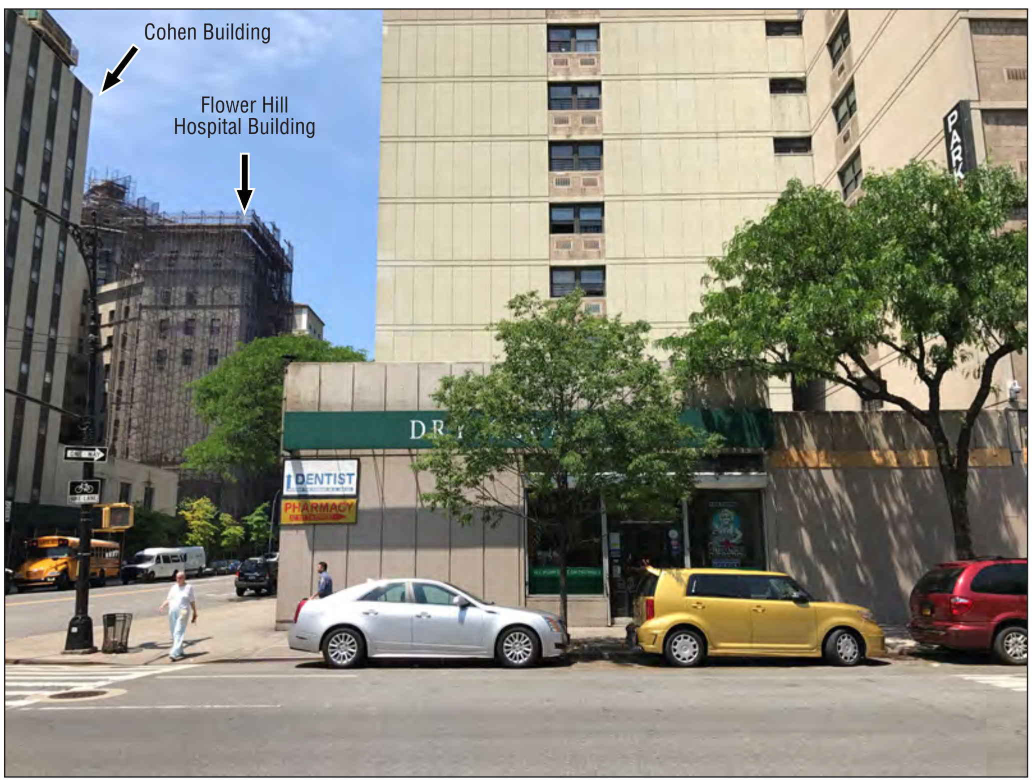
The *CEQR Technical Manual* defines a visual resource as the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources. As described above, the Project Area contains hospital buildings and a parking garage. The FHH Building at the west end of the Project Area is a visual resource with a distinctive design and visual prominence from nearby areas along Fifth Avenue. The building has a rusticated base with arched windows, and a molded cornice. Above the base, the FHH Building has an X-shaped plan with four wings. The upper stories of the central octagonal tower contain a loggia beneath a pyramidal roof (see **Figure F-5**, photos 5 and 6). This visual resource is visible from Central Park to the west, and from Fifth Avenue and East 106th and East 105th Streets from nearby vantage points along these streets (**Figure F-13**, photo 23). Views to the FHH Building from the east from greater distances are generally obscured or obstructed by existing buildings, including existing buildings on the Development Site and other intervening buildings. Distant views from the north and south on Fifth Avenue are obscured and obstructed by street trees and intervening tall buildings built to the lot line.

STUDY AREA

Visual resources that can be seen from the publicly accessible sidewalks adjacent to the Project Area include known architectural resources such as El Museo del Barrio on Fifth Avenue, the Museum of the City of New York on Fifth Avenue, and P.S./I.S. 171 Patrick Henry School on East 104th Street and Madison Avenue (see Attachment E, “Historic and Cultural Resources” for more detail).

Central Park is a prominent visual resource that is also a historic resource in the study area (see **Figure F-13**, photos 22 and 23 and Attachment E, “Historic and Cultural Resources”). The Conservatory Garden within Central Park allows for views of the west façade of the FHH Building. The tall cast iron Vanderbilt Gate is a visual resource that can be seen from nearby vantage points in the study area southwest of the Project Area. Views of Central Park are primarily

Madison Avenue residential buildings with ground-floor retail, view west on East 105th Street **20**



Madison Avenue, Lakeview Apartments commercial frontage across East 106th Street from Project Area, with the Project Area to the left **21**

Central Park, view east toward East 106th Street and the Project Area to the right **22**

Conservatory Garden in Central Park, view east to the Flower Hill Hospital Building in the Project Area **23** available from Fifth Avenue, though the park's tree cover and openness can be seen from Madison Avenue at East 107th, East 106th, East 105th, and East 104th Streets.

The Park Avenue Viaduct of New York Central and Hudson River (carrying the Metro-North Railroad) is a visual resource as it is a distinctive built feature that is visible from vantage points within the study area in eastward views on East 106th and East 104th Streets. The viaduct extends north-south along Park Avenue outside the study area to the east. East 106th and East 104th Streets pass through round-arched tunnels in the viaduct, which are visible at a distance from the study area (see **Figure F-14**, photo 24).

Views from the Project Area are generally limited to areas within the immediate vicinity of the four streets surrounding the Project Area. Madison Avenue is a wide street that offers long north-south views, although these views do not include any visual resources. East 106th Street also offers long views of Central Park to the west and the Park Avenue Viaduct to the east. Public walkways within the Carver Houses building complex provide views of the Project Area, including the garage and the upper stories of the Cohen Building.

Fifth Avenue is a view corridor in the study area. Although views are limited by dense foliage, views along Fifth Avenue include several visual resources such as Central Park, El Museo del Barrio, and the Museum of the City of New York.

D. FUTURE WITHOUT THE PROPOSED ACTIONS

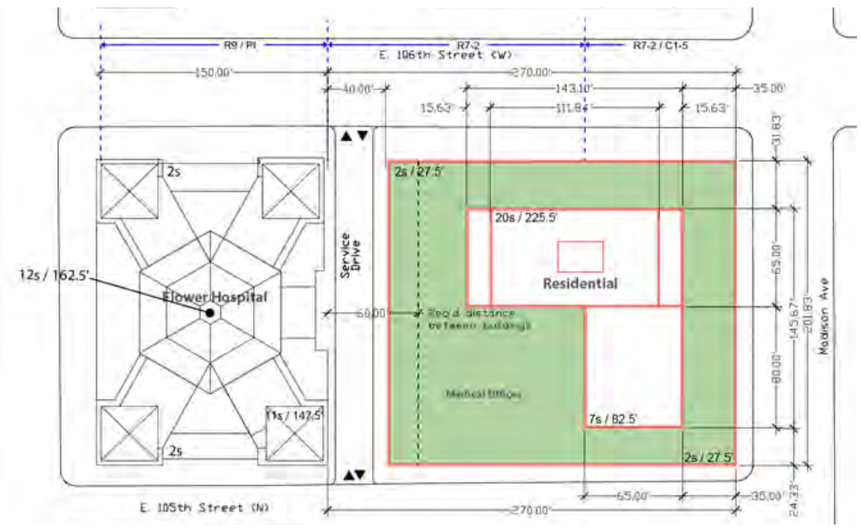
PROJECT AREA

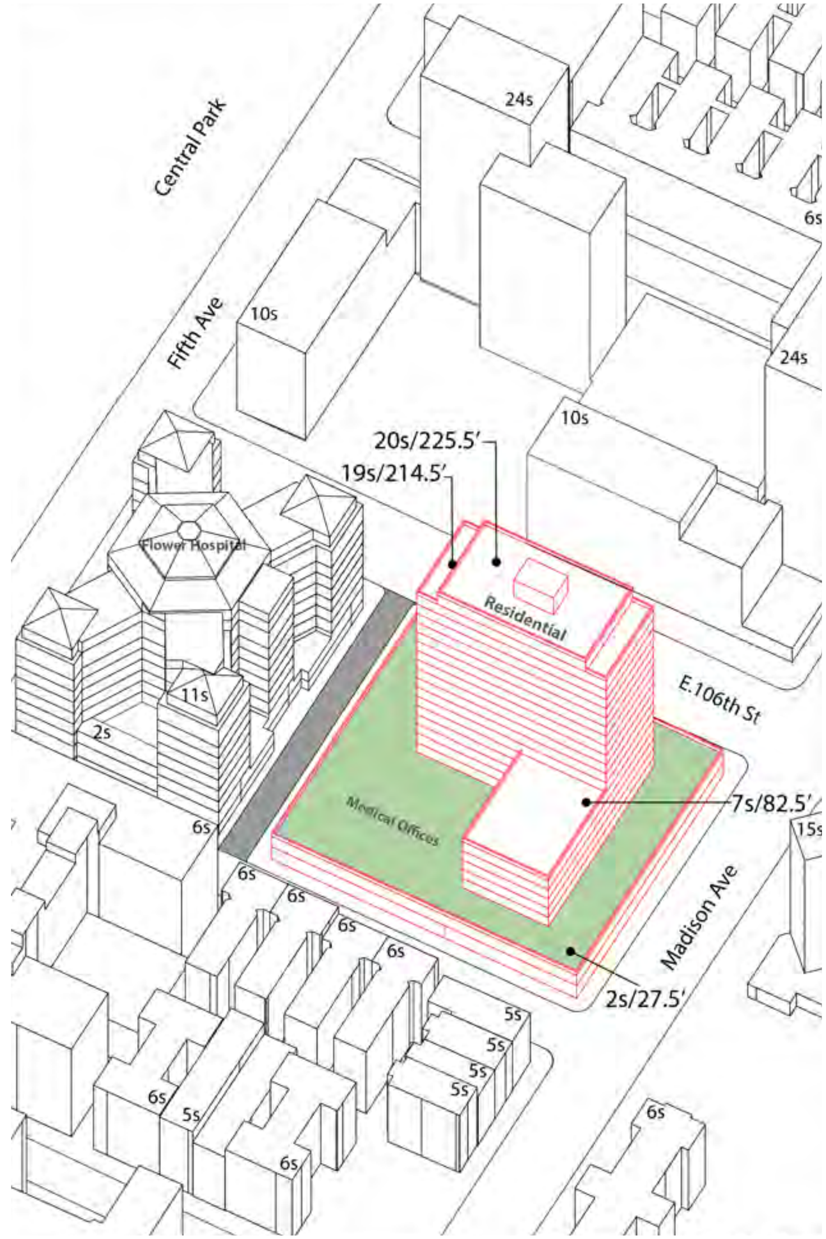
URBAN DESIGN

Absent the Proposed Actions, it is assumed that the Applicant will discontinue operations at the TCC and sell the FHH and Development Sites. It is assumed that the FHH Building will remain and will be adaptively reused as a residential use. It is expected that the three existing buildings on the Development Site will be demolished and the Development Site is expected to be redeveloped with an L-shaped, 7- and 20-story, mixed-use primary residential building set on a two-story base. The approximately 28-foot-tall base is expected to be built to the lot lines on East 106th and East 105th Streets, and Madison Avenue. The development is expected to contain approximately 20,788 gsf of retail space along Madison Avenue and approximately 215 dwelling units (DUs). It is assumed that approximately 70,655 gsf of medical office space will be built at the midblock (see **Figure F-15**). The development is also anticipated to include approximately 22,500 gsf of enclosed parking.

In the No Action condition, the building would have an uninterrupted street wall extending approximately 201 feet along Madison Avenue, and approximately 230 feet along East 105th and East 106th Streets. Above the two-story base, the building's upper floors are expected to have an L-shaped form, with the longer façades oriented on East 106th Street and Madison Avenue. It is expected that the 20-story portion of the L-shaped tower will be oriented east-west along East 106th Street and will be set back approximately 30 feet from East 106th Street and approximately 35 feet from Madison Avenue. The seven-story portion of the L-shaped tower will be oriented north-south along Madison Avenue and will be set back approximately 35 feet from Madison Avenue and approximately 24 feet from East 105th Street. The No Action building on the Development Site is anticipated to be separated from the FHH Building by an approximately 40-foot-wide service drive. The rehabilitation of the FHH Building is not expected to adversely affect

East 104th Street, view east to the Park Avenue Viaduct of New York Central and Hudson River/Metro-North Railroad **24**





Source: Michael Kwartler and Associates

No Action Site Plan & Axonometric View Looking North

Figure F-15

this visual resource as the building will be retained and adaptively reused, with most alterations being limited to the building's interior.

It is expected that the street wall with the No Action development will be similar to existing buildings on East 105th and East 106th Streets and on the west side of Madison Avenue, where the buildings are built to the lot line without setbacks. The No Action development also is expected to be consistent with existing building types in the study area. As described above, buildings on Madison Avenue and East 106th Street already include residential buildings with ground-floor retail.

VISUAL RESOURCES AND VIEW CORRIDORS

As described above, the FHH Building at the west end of the Project Area is a visual resource with a distinctive design on Fifth Avenue. Under the No Action condition, the FHH Building will remain visually prominent in views from Central Park. The cleaning and repair of the façades would not adversely affect the building's appearance. Further, views to this visual resource from nearby vantage points on Fifth Avenue and East 105th and East 106th Streets will remain available under the No Action condition on the Development Site. Although certain views to the building would change with the new development, more distant views to the FHH Building would remain similar to existing conditions, with longer views continuing to be obscured or obstructed by other nearby buildings, including buildings on the eastern end of the Development Site. Other longer views from the north and south on Fifth Avenue would continue to be obscured and obstructed by street trees and intervening tall buildings built to the lot line. The No Action development will not obstruct views of the FHH Building or any other visual resources in the Project Area.

STUDY AREA

As described in Attachment B, "Land Use, Zoning, and Public Policy," there are no new projects expected to be completed in the study area by the 2025 analysis year. Therefore, no notable changes to the study area's urban design or views to visual resources are expected.

E. FUTURE WITH THE PROPOSED ACTIONS

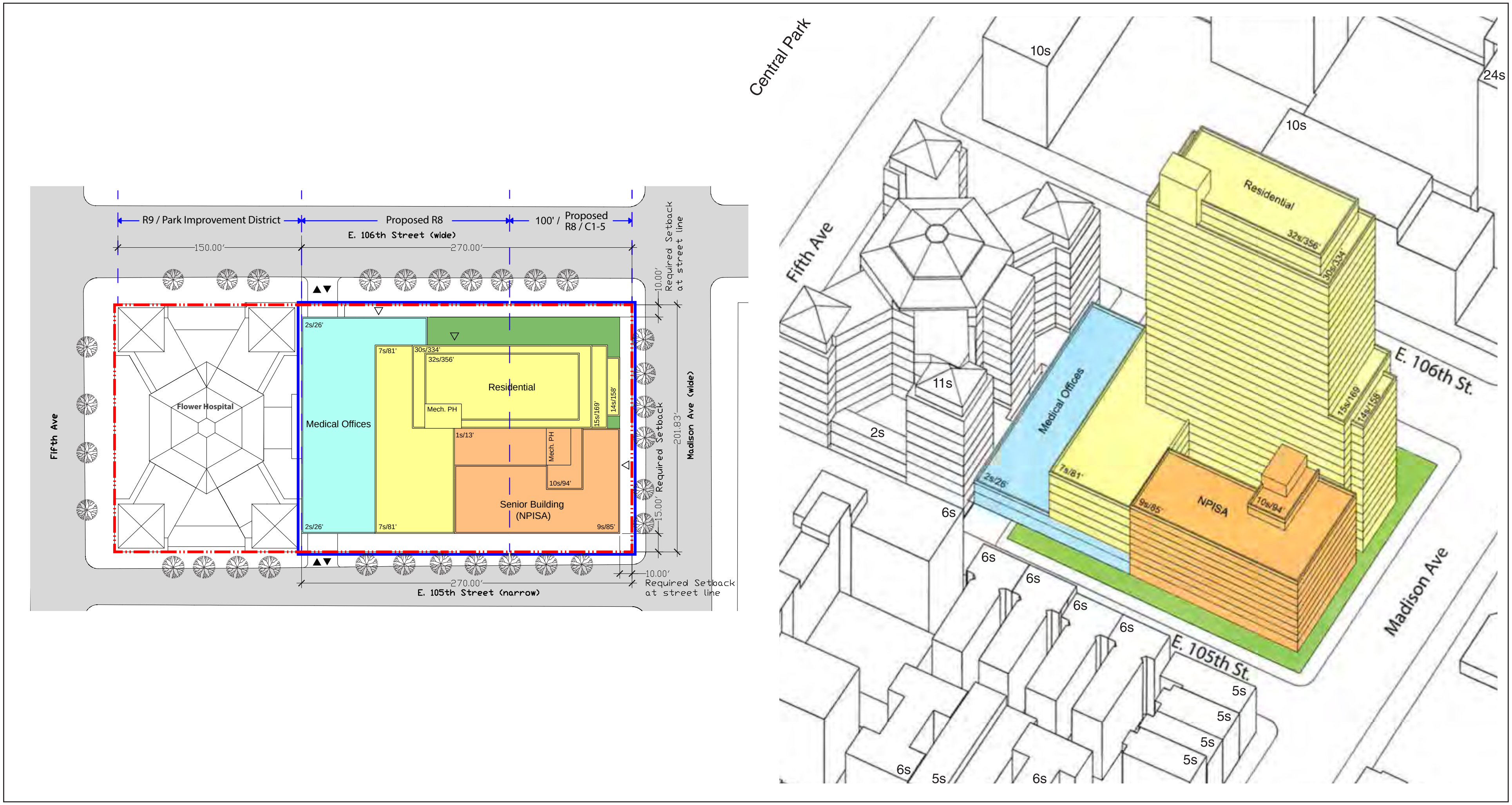
PROJECT AREA

As described above, because the zoning map amendment would allow for both community facility and residential development, this analysis considers two With Action scenarios (see **Figures F-2 and F-16 through F-21**).

WITH ACTION SCENARIO 1

With Action Scenario 1 would result in the rehabilitation of the FHH Building for use as the Joint Long-Term Care and Hospital Facility and the redevelopment of the Development Site with the 10-story Senior Building containing approximately 87,653 gsf, approximately 54,606 gsf of medical office space in a two-story medical office building, and a 32-story tower containing approximately 340,930 gsf of residential space (379 DUs) (see **Figure F-16**).

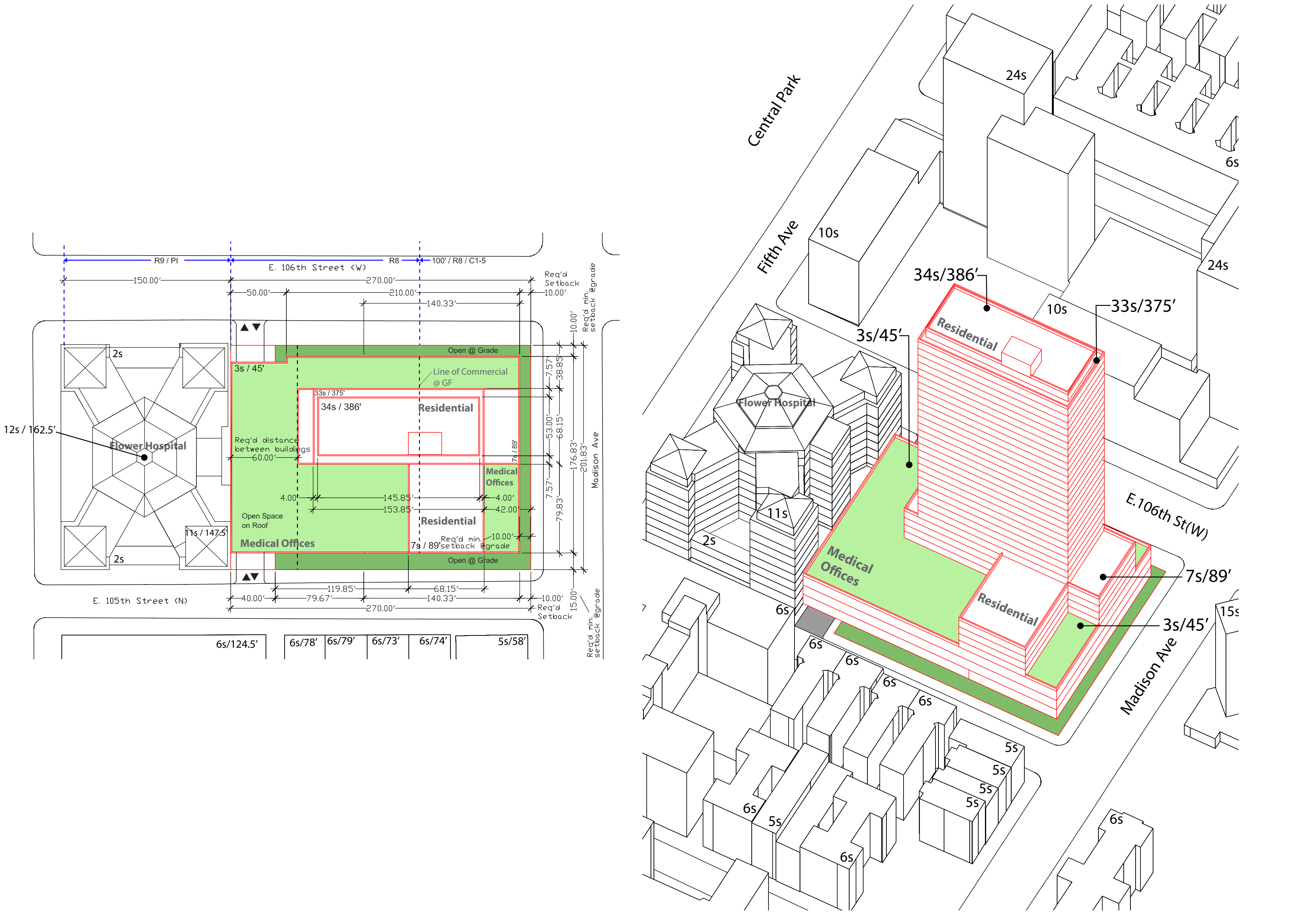
The new buildings that would be constructed on the Development Site would be set back from the East 105th Street lot line by 15 feet, from the Madison Avenue lot line by 10 feet, and from the East 106th Street lot line by at least 10 feet, as shown on **Figure F-16**. These lot line setbacks would function as sidewalk widenings adjacent to the Development Site. The 10-story (approximately 94-foot-tall) Senior Building would be built on the southeast portion of the Development Site, with



Source: Michael Kwartler and Associates

With Action Scenario 1 Site Plan & Axonometric View Looking North

Figure F-16



Source: Michael Kwartler and Associates

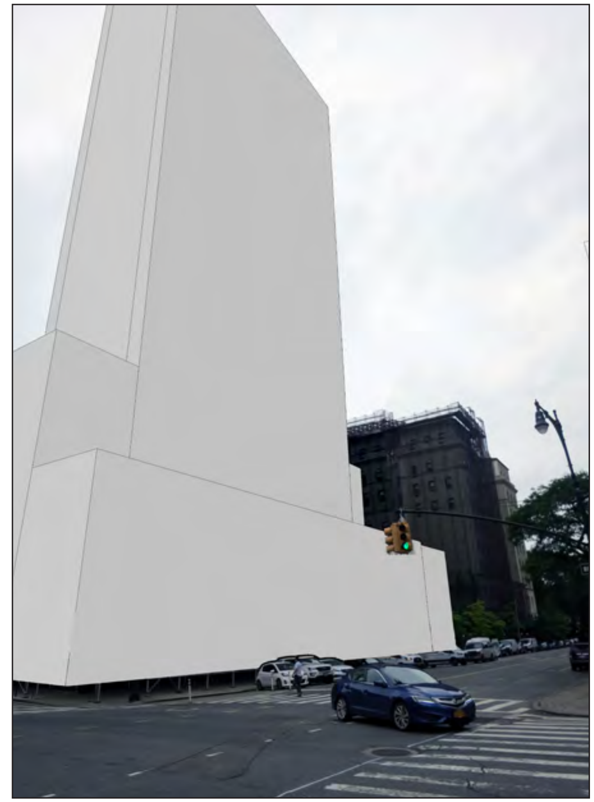
TERENCE CARDINAL COOKE REZONING

With Action Scenario 2 Site Plan & Axonometric View Looking North

Figure F-17

No Action **25A**

With Action Scenario 1 **25B**



With Action Scenario 2 **25C**

FOR ILLUSTRATIVE PURPOSES ONLY

No Action and With Action Comparative Views - View Southwest on East 106th Street from Madison Avenue

No Action **26A**

With Action Scenario 1 **26B**

With Action Scenario 2 **26C**

FOR ILLUSTRATIVE PURPOSES ONLY

No Action and With Action Comparative Views -
View Southwest on Madison Avenue from East 106th Street
toward the Project Area

Figure F-19

12.6.18

No Action **27A**

With Action Scenario 1 **27B**

FOR ILLUSTRATIVE PURPOSES ONLY

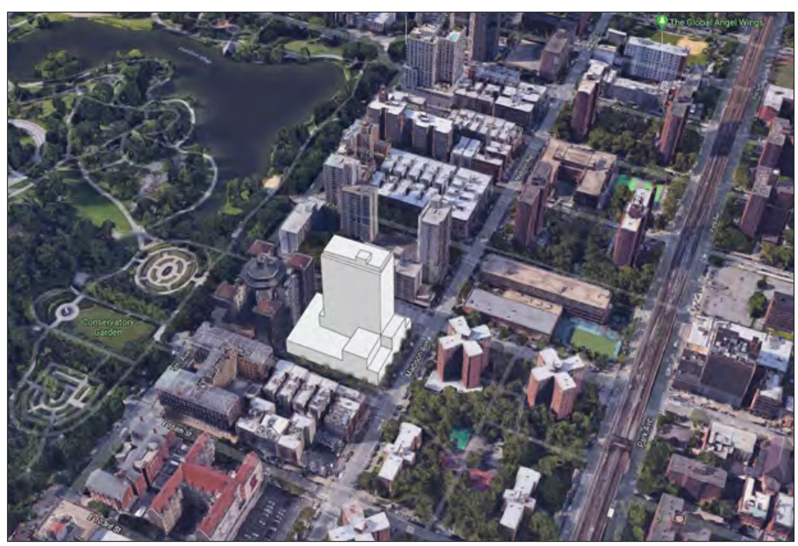
With Action Scenario 2 **27C**

No Action and With Action Comparative Views - View Northeast from Central Park Toward the Project Area

Figure F-20

No Action **A**

With Action Scenario 1 **B**



With Action Scenario 2 **C**

FOR ILLUSTRATIVE PURPOSES ONLY

No Action/With Action Conditions
Birds Eye View
Figure F-21

frontages on Madison Avenue and East 105th Street. The building would rise without setbacks (except at the 10th story). A 32-story (approximately 356-foot-tall) residential tower would be constructed at the northeast corner of the Development Site, set back from the lot lines on Madison Avenue and East 106th Street, as described above. On Madison Avenue, the tower would have setbacks at the 14th, 15th, and 30th stories, providing a 14-story street wall on Madison Avenue set back by approximately 10 feet from the lot line. On East 106th Street, the residential tower would be set back from the lot line by approximately 30 feet, creating a widened sidewalk and a landscaped area that would serve as an outdoor open area for the tenants of the new residential tower and the adjacent Senior Building At the midblock, the residential tower would have a seven-story wing that would extend to the south along East 105th Street. It would be adjacent to the two-story medical office building which would abut the base of the FHH Building's east façade.

Compared to the No Action condition, With Action Scenario 1 would result in a 32-story residential tower that would be 12 stories, or approximately 130 feet, taller than the residential building that would be developed in the No Action condition (see **Figures F-2 and F-18 through F-21**). The street fronts in With Action Scenario 1 would differ from those in the No Action condition. In the No Action condition, the building would have a large two-story base that would extend to the lot lines on each street frontage, with the seven- and 20-story towers set back from the base. In contrast to the With Action Scenario 1 development, the No Action development would not have lot line setbacks, and therefore, there would be no sidewalk widenings nor an outdoor open area for the tenants at the Development Site.In both the No Action condition and With Action Scenario 1, the midblock portions of the Development Site would have curb cuts on East 105th and East 106th Streets, however, an associated 40-foot-wide service drive would only be developed in the No Action condition. In both scenarios, the midblock area of the Development Site would be occupied by medical offices and part of the residential tower. In With Action Scenario 1, the massing of the new buildings would include the seven- and nine-story frontages on East 105th Street compared to the two-story base with deeply recessed towers that would be developed in the No Action condition. In With Action Scenario 1, the massings would create a consistent, taller street wall on East 105th Street compared to the two-story street wall in the No Action condition.

The development in With Action Scenario 1 would contain a total of approximately 708,465 gsf, approximately 209,466 gsf more than in the No Action condition. With Action Scenario 1 would have no ground-floor retail, in comparison to the approximately 20,788 gsf of ground-floor retail on Madison Avenue that is anticipated in the No Action condition. Instead, the development in With Action Scenario 1 would have less residential space than in the No Action condition, with approximately 340,930 gsf of residential space, compared to the approximately 385,056 gsf of residential space anticipated in the No Action condition. Also in contrast to the No Action condition, the development in With Action Scenario 1 would contain less medical office space than the No Action condition, with approximately 54,606 gsf of space in comparison to the anticipated approximately 70,655 gsf under the No Action condition. With approximately 31,800 gsf of parking, the With Action Scenario 1 development would have approximately 9,300 gsf more parking space than in the No Action condition.

WITH ACTION SCENARIO 2

In With Action Scenario 2 the FHH Building would be adaptively reused as a residential building with 215 DUs. The Development Site would be redeveloped with approximately 121,471 gsf of medial office space and a residential tower containing approximately 340,930 gsf (379 DUs) and approximately 20,788 gsf of ground-floor retail space on Madison Avenue (see **Figure F-17**).

In With Action Scenario 2, the Development Site would be redeveloped with a new residential building with a three-story base that would largely fill the Development Site, though it would be set back 10 feet from both Madison Avenue and East 106th Street and 15 feet from East 105th Street. The setback areas at the base of the building would be landscaped. The building's midblock portion would contain medical offices that would abut the east façade of the FHH Building. Above the building's base, the residential building would include a seven-story section facing East 105th Street and Madison Avenue similar to the development in the No Action condition, although the seven-story portion would not be set back from the base (see **Figures F-2 and F-18 through F-21**). A 34-story residential tower would be built parallel to East 106th Street and would be set back approximately 40 feet from East 106th Street and Madison Avenue, similar to the development in the No Action condition. The residential tower would have setbacks at the 7th and 33rd stories.

As with the development in the No Action condition, the With Action Scenario 2 development would also include a building with a lower height base, the short end of a lower height portion of the building along East 105th Street, and the building's taller and wider portion oriented east-west along East 106th Street. The 34-story residential building would be taller than the 7- and 20-story residential building that is anticipated in the No Action condition and the 34-story building would have a larger footprint. Compared to the No Action condition, the With Action Scenario 2 development would result in a residential building that would be 14 stories, or approximately 149 feet, taller than the development in the No Action condition. The seven-story portion of the residential building that would be developed in With Action Scenario 2 would be built to lot lines on Madison Avenue and East 105th Street, in contrast to the No Action condition where the seven-story portion of the residential building is expected to be set back from the lot line. In contrast to the No Action condition, With Action Scenario 2 would not have a midblock service drive; instead this portion of the Development Site would be occupied by medical offices adjacent to the FHH Building, creating uninterrupted street walls along both East 105th and East 106th Streets.

The With Action Scenario 2 development would have more floor area than the No Action condition, but the development would contain the same uses. With Action Scenario 2 would have a total of approximately 708,465 gsf, approximately 209,466 gsf more than in the No Action condition. The With Action Scenario 2 development would include approximately 20,788 gsf of ground floor retail, the same as in the No Action condition. The With Action Scenario 2 development would have approximately 534,406 gsf of residential space, compared with approximately 385,056 gsf of residential space expected under the No Action condition. Further, the With Action Scenario 2 development would have approximately 121,471 gsf of medical offices, an increase from the approximately 70,655 gsf planned under the No Action condition. With 31,800 gsf of parking, the With Action Scenario 2 development would have approximately 9,300 gsf more parking space than in the No Action condition.

STUDY AREA

WITH ACTION SCENARIO 1

Urban Design

As with the No Action development, in With Action Scenario 1 the proposed development would be built on an existing block and would therefore not alter street orientation, street patterns, block shapes, or natural resources in the study area.

Overall, the With Action Scenario 1 development would be consistent with the varied urban design character of the study area and would not adversely impact the experience of a pedestrian in the study area. As described above, the With Action Scenario 1 development would be compatible with the variety of building types, scales, and uses, which includes educational and institutional facilities and both large and small residential buildings, including residential buildings with ground-floor retail (see **Figures F-2, F-16, and F-18 through F-21**).

With Action Scenario 1's variation of building heights would also be compatible with the study area's urban design, which features buildings ranging from 5 to 24 stories. The With Action Scenario 1's 10- to 14-story street walls on Madison Avenue would be similar in height to the residential buildings of the Carver Houses complex on the east side of Madison Avenue.

At 32 stories, With Action Scenario 1's residential tower would be taller than existing study area buildings; however, the residential tower would only be eight stories taller than the 24-story towers at the Lakeview Apartments complex at 1250 Madison Avenue, directly across East 106th Street from the Project Area. The proposed residential tower would be set back from the lot lines on East 105th and East 106th Streets and Madison Avenue which would be consistent with the urban design character of the study area. As described above, the Lakeview Apartments include a plaza along East 106th Street, the residential buildings of the Carver Houses complex are set within landscaped grounds with buildings that area not built to the lot lines, and the street-facing courtyards of El Museo del Barrio and the Museum of the City of New York establish setbacks on Fifth Avenue. The With Action Scenario 1's residential tower would be comparable to existing nearby tall buildings on Fifth Avenue that front onto Central Park, including the 43-story tower located four blocks south of the Project Area at 10 East 102 Street and the two 34-story towers located five blocks north of the Project Area at 1309 Fifth Avenue.

As with the No Action condition, With Action Scenario 1 also would not result in any significant adverse impacts on the pedestrian experience. The increased height of the residential tower in With Action Scenario 1 would not be noticeable from street level, as the tower portions of the building would be set back above a 14- and 15-story base. The variety of building heights and setbacks would create a varied streetscape, and would be in keeping with the surrounding range of building heights and sizes. The setback of the building from the lot line would open up views from East 105th and East 106th Streets toward Central Park and to the FHH Building, a visual resource.

Visual Resources and View Corridors

The With Action Scenario 1 development would not obstruct views of visual resources. In eastward views, the proposed residential tower would be visible beyond the FHH Building. Further, the FHH Building's primary Fifth Avenue façade would remain prominently visible from Central Park and Fifth Avenue (see **Figure F-20**). The visibility of the FHH Building's East 105th Street and East 106th Street façades would also remain available from existing vantage points.

The With Action Scenario 1 development would not obscure views to visual resources in the study area, including El Museo del Barrio, the Museum of the City of New York, and P.S./I.S. 171 Patrick Henry School. From Central Park, the With Action Scenario 1 development would be visible due to its height, however, views would be obscured by vegetation in the park during warm weather months. However, views from Central Park to these visual resources already include a variety of nearby building heights and types. On the east-west streets, views of Central Park and the Park Avenue Viaduct would be maintained as the development would occur on an existing city block and would, therefore, not obstruct any east-west views. Similarly, the With Action Scenario 1 development would also not obstruct north-south views along the Fifth Avenue view corridor.

Overall, the With Action Scenario 1 development would result in new buildings on the Development Site, including a 32-story residential tower that would establish a continuous, though set back, street wall on East 105th Street and Madison Avenue and a more deeply recessed street wall on East 106th Street. Containing medical offices, a hospital and long-term care facility, and residences, With Action Scenario 1 would activate the blockfront and nearby streets and sidewalks. The development would not obscure views of Central Park from nearby view corridors or views to study area visual resources.

WITH ACTION SCENARIO 2

Urban Design

As with the No Action development, in With Action Scenario 2 the development would be built on an existing block and would therefore not alter street orientation, street patterns, block shapes, or natural resources in the study area.

Overall, the With Action Scenario 2 development would be consistent with the varied urban design character of the study area and would not adversely impact the experience of a pedestrian in the study area. As described above, the With Action Scenario 2 development would be compatible with the variety of building types, scales, massing, and uses. As with the No Action development, the ground-floor retail in the residential building's Madison Avenue frontage would be in keeping with the urban design character of the study area on Madison Avenue and would provide visual interest to the pedestrian compared to existing conditions, where there is currently a parking garage and a building with limited active ground-floor uses (see **Figures F-2 and F-17 through F-21**).

The With Action Scenario 2 development's three-story and seven-story street walls on Madison Avenue and East 105th Street would be in keeping with the urban design of the study area that includes lower height buildings. On East 106th Street across from the Development Site, the Lakeview Apartments complex includes a lower-height portion that is eight and ten stories. In addition, several study area buildings on the east-west streets and Madison Avenue also include buildings ranging from two to six stories.

Similar to With Action Scenario 1, With Action Scenario 2's residential tower would be taller than the No Action development, but would not be substantially taller than the 24-story towers at the Lakeview Apartments or other nearby tall buildings outside the study area.

As with the No Action condition, the With Action Scenario 2 development also would not result in significant adverse impacts to the pedestrian experience. The height of the residential tower would not be noticeable from street level, as the building would be set back above a three-story base at East 106th Street and a three- and seven-story base at East 105th Street and Madison Avenue. A wider setback from East 106th Street would provide more open views from nearby vantage points on East 105th and East 106th Streets near the Development Site, thereby maintaining existing views of Central Park and the FHH Building, a visual resource.

Visual Resources and View Corridors

The With Action Scenario 2 development would not obstruct views of visual resources. In eastward views, the proposed residential tower would be visible beyond the FHH Building (see **Figure F-20**). The FHH Building's primary Fifth Avenue façade would remain prominently visible from Central Park and Fifth Avenue. The visibility of the FHH Building's East 105th Street and East 106th Street façades would also remain available from existing vantage points.

Similar to With Action Scenario 1, the With Action Scenario 2 development would not obscure views to visual resources in the study area, including El Museo del Barrio, the Museum of the City of New York, P.S./I.S. 171 Patrick Henry School and the Park Avenue Viaduct. From Central

Park, the With Action Scenario 2 development would be visible due to its height, however, views would be obscured by vegetation in the park during warm weather months. However, views from Central Park to these visual resources already include a variety of nearby building heights and types. On the east-west streets, views of Central Park and the Park Avenue Viaduct would be maintained as the development would occur on an existing city block and would, therefore, not obstruct any east-west views. Similarly, the With Action Scenario 2 development would also not obstruct north-south views along the Fifth Avenue view corridor.

Overall, the With Action Scenario 2 development would result in new buildings on the Development Site, including a 34-story residential tower, that would establish a continuous, though recessed, street wall on the Development Site that is comparable to nearby buildings in the study area. Containing medical offices, retail, and residences, the With Action Scenario 2 development would activate the blockfront and nearby streets and sidewalks. Further, the ground-floor retail would enliven the pedestrian experience on Madison Avenue with new activity. The With Action Scenario 2 development would not obscure views of Central Park from nearby view corridors or views to study area visual resources.

F. CONCLUSION

Overall, although the Proposed Actions would result in physical alterations beyond those allowed by existing zoning, the Proposed Actions would not adversely affect urban design features in the study area so that the context of a natural or significant built resource is adversely altered. The Proposed Actions would have no significant adverse impacts on urban design or visual resources, or the pedestrian's experience of these characteristics of the built and natural environment. The Proposed Actions would not adversely impact the vitality, the walkability, or visual character of the area. Therefore, no further analysis is warranted. ✷

A. INTRODUCTION

This attachment addresses the potential for the presence of hazardous materials resulting from previous and existing uses both within the Project Area and the surrounding area, and potential risks with respect to any such hazardous materials. As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

This assessment is based on a June 2018 *Phase I Environmental Site Assessment* (ESA) prepared by AKRF, Inc. The ESA included the findings of a reconnaissance of the Project Area, an evaluation of readily available historical information, and selected environmental databases and electronic records in accordance with American Society for Testing and Materials (ASTM) E1527-13.

B. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The Project Area is approximately 20 feet above mean sea level. Groundwater is anticipated to be first encountered at approximately 13 feet below grade based on previous subsurface investigations cited in the regulatory databases and is assumed to flow in an easterly to southeasterly direction toward the Harlem River, located approximately 0.75 miles away. However, actual groundwater depth and flow may be affected by the many nearby subway tunnels or by the nearby Harlem Meer (which reportedly was excavated at the lowest-lying section of Central Park, and was previously a semi-brackish, partly tidal wetland, which drained slowly into the East River). Groundwater in the vicinity is not used as a source of potable water. Bedrock in the Project Area is anticipated to be shallow (within 15 feet below grade).

PHASE I ESA

The June 2018 Phase I ESA (see **Appendix 2**) identified evidence of Recognized Environmental Conditions (RECs), i.e., “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property,” including:

- Several closed and in-service diesel and fuel oil underground storage tanks (USTs) and aboveground storage tanks (ASTs) ranging in size from 50 to 20,000 gallons were registered for the TCC. A closed-status spill (No. 0403835) was reported in 2004 due to a leak in a No. 6 fuel oil UST discovered during tank removal activities, with surrounding soil/groundwater contamination and subsequent remedial activities, including vacuum-enhanced free-phase petroleum product recovery events in conjunction with monitoring. The spill achieved regulatory closure in March 2018 after New York State Department of Environmental Conservation (NYSDEC) determined that free-phase petroleum product had decreased following remedial actions.
- Historical Sanborn maps and the regulatory database information indicated nearby facilities, including two dry cleaning facilities within 100 feet (one of which is still active and listed as a generator of solvent wastes) and nearby historical automotive facilities and printers with some potential to have affected the TCC subsurface.
- Historic chemical handling associated with former laboratories and/or photo processing/development of x-rays from former hospital uses could have affected subsurface conditions at the TCC.

Other on-site environmental concerns identified in the ESA included:

- The TCC was listed in the database information as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous wastes typically associated with medical facilities, including corrosive wastes, ignitable wastes, pharmaceutical wastes, acetic acid, 1,4-dioxane and phenol, between 1982 and 2006. No violations were reported.
- The potential presence of polychlorinated biphenyls (PCBs) or mercury-containing components, asbestos-containing materials (ACMs), lead-based paint (LBP) in building components and/or buried demolition debris from historical on-site structures.

C. FUTURE WITHOUT THE PROPOSED ACTIONS

Absent the Proposed Actions, it is assumed that the FHH Building would remain and would be adaptively reused for residential use and the Development Site would be redeveloped with an L-shaped 20-story, mixed-use building with frontage along East 106th Street and Madison Avenue.

Redevelopment in the Future without the Proposed Actions (the “No Action” condition) would need to meet applicable regulatory requirements, e.g., removing asbestos prior to demolition, properly managing LBP during demolition and properly disposing of any excess soil, and reporting (and addressing) any encountered petroleum tanks or spills to NYSDEC. A Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP) would not be required in the No Action condition, and protective measures that exceed standard regulatory requirements (e.g., a vapor barrier) would therefore not apply.

D. FUTURE WITH THE PROPOSED ACTIONS

WITH ACTION SCENARIO 1

Under With Action Scenario 1, the Applicant would redevelop the Project Area with new medical facilities, a nonprofit senior supportive housing development (the "Senior Building"), and residential tower and modernize and consolidate TCC's functions within the existing FHH Building.

WITH ACTION SCENARIO 2

Under With Action Scenario 2, the Development Site would be developed with new residential, medical office, and retail space and the FHH Building would be converted to residential use.

Similar to the No Action condition, both With Action scenarios would result in demolition and ground disturbance, potentially increasing exposure to hazardous materials. Although this could increase pathways for human exposure to any contaminated materials present in the existing structures or subsurface, impacts would be avoided by incorporating the following as part of the Proposed Actions:

- Demolition would be conducted in compliance with applicable regulatory requirements, e.g., for ACMs, LBP, etc.
- A subsurface investigation involving the collection of subsurface samples for laboratory analysis would be conducted prior to ground disturbance in accordance with a scope of work pre-approved by the New York City Office of Environmental Remediation (OER). Based on the investigation findings, a RAP and associated CHASP would be prepared and implemented during the subsurface disturbance associated with the Proposed Actions. The RAP would address requirements for items such as soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should additional underground petroleum storage tanks or soil/groundwater contamination be unexpectedly encountered. It would also address any measures required to be incorporated into the new buildings, such as vapor controls. The purpose of the CHASP is to provide for contingencies that may arise during construction at the site, including specifying appropriate measures to be implemented if USTs, soil and groundwater contamination, or other unforeseen environmental conditions are encountered. In a letter dated October 24, 2018 the New York City Department of Environmental Protection (DEP) indicated it had reviewed the Phase I ESA and concurred with the above approach and the placement of an (E) Designation, as discussed below.
- As a part of the redevelopment of the Development Site and to protect future occupants in the new construction, a vapor barrier (minimum thickness of 15 mil) would be installed below the building's foundation and outside of the subgrade walls.
- Applicable regulatory requirements would be followed, e.g., properly disposing of any excess soil; reporting to NYSDEC any signs of a petroleum spill (removing and registering encountered tanks); and following DEP requirements should dewatering be required.

In connection with the requested zoning changes, an (E) Designation (E-531) would be mapped on the Project Area (Block 1611, Lots 1 and 15) requiring implementation of the above-described measures. The text of the (E) Designation is as follows:

Task 1

The Applicant submits to OER, for review and approval, a Phase 1 ESA of the site along with a soil and groundwater testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum-based contamination and non-petroleum-based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER. If remediation is indicated from the test results, a proposed remediation plan must be submitted to OER for review and approval. The Applicant must complete such remediation as determined necessary by OER. The Applicant should then provide proper documentation that the work has been satisfactorily completed. An OER-approved construction-related health and safety plan would be implemented during excavation and construction and activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation. All demolition or rehabilitation would be conducted in accordance with applicable requirements for disturbance, handling and disposal of suspect lead-paint and asbestos-containing materials. For all projected and potential development sites where no (E) Designation is recommended, in addition to the requirements for LBP and ACMs, requirements (including those of NYSDEC) should petroleum tanks and/or spills be identified and for off-site disposal of soil/fill would need to be followed.

E. CONCLUSION

With these measures included as part of the Proposed Actions, no significant adverse impacts related to hazardous materials would occur. ✷

A. INTRODUCTION

This attachment examines the potential impacts of the Proposed Actions on the study area transportation systems.

As described in Attachment A, “Project Description,” the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a 599-bed skilled nursing facility and 50-bed specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the “Project Area”) (see **Figure H-1**). The facility is currently comprised of four buildings: the Flower Hill Hospital (FHH) Building on Fifth Avenue (the “FHH Site”), the Annex, the Cohen Building and a parking garage.

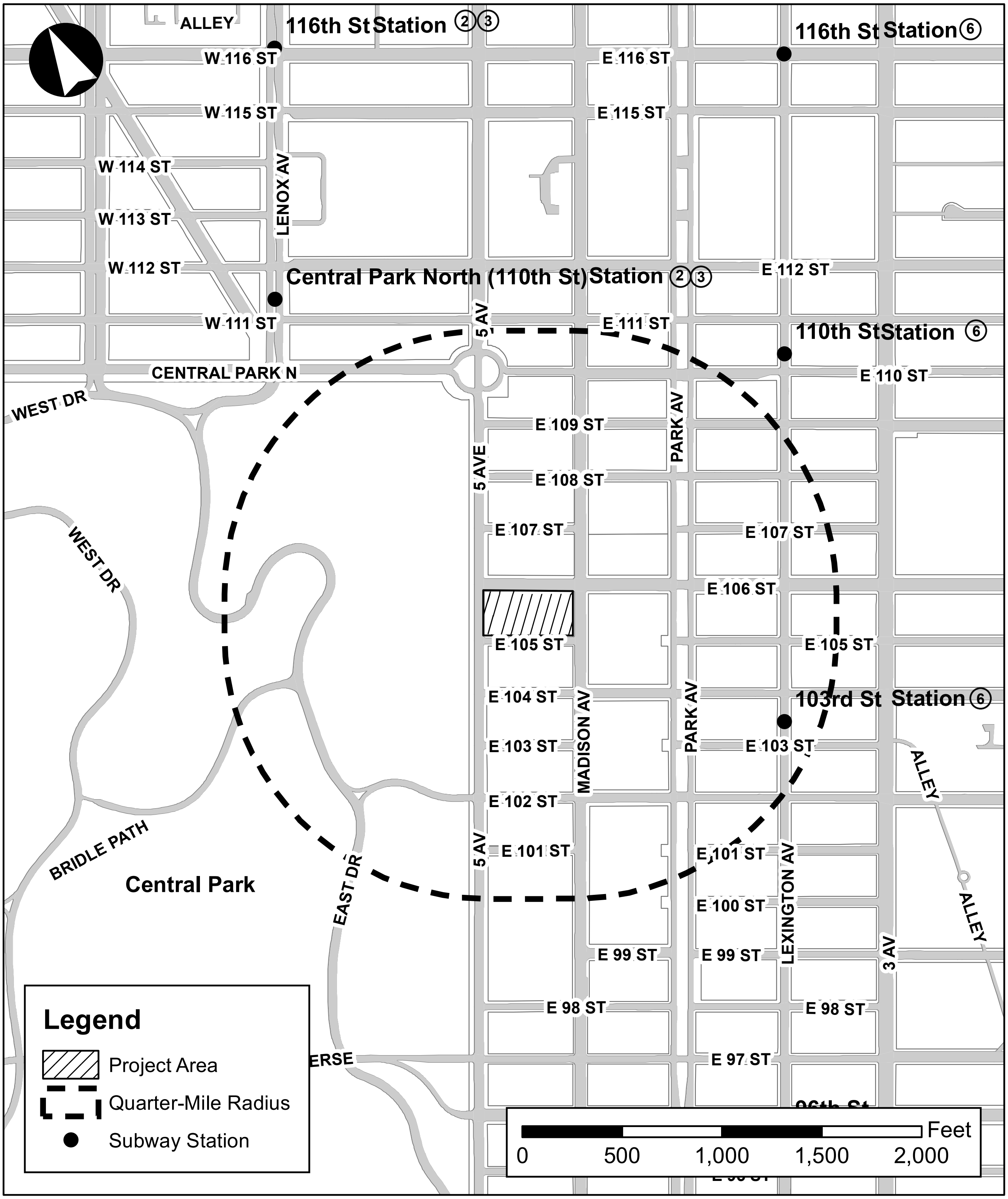
The Proposed Actions would facilitate the consolidation and modernization of TCC’s skilled nursing facility and specialty hospital (the “Joint Long-Term Care and Hospital Facility”) at the FHH Site, and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the “Rezoning Area” or “Development Site”). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC’s Program of All-Inclusive Care for the Elderly (collectively, the “Proposed Project”). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

In order to assess the potential effects of the Proposed Actions, a reasonable worst case development scenario (RWCDS) for both the Future without the Proposed Actions (the “No Action” condition) and the Future with the Proposed Actions (the “With Action” condition) was analyzed for the 2025 analysis year.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant’s Proposed Project (“With Action Scenario 1”); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use (“With Action Scenario 2”).

Based on a travel demand forecast, With Action Scenario 2 would generate a greater number of overall person trips and vehicular trips in each peak hour than With Action Scenario 1. Therefore, With Action Scenario 2 was used in this analysis to determine the potential for significant adverse transportation impacts from the Proposed Actions. The assessment concluded that the Proposed Actions would not result in any significant adverse impacts to traffic, transit, pedestrian or parking conditions.

1.7.19



Source: PHA

Project Location

Figure H-1

B. PRELIMINARY ANALYSIS METHODOLOGY

The 2014 *City Environmental Quality Review (CEQR) Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation analysis (Level 1) to estimate the volume of person and vehicle trips attributable to the Proposed Actions. If the Proposed Actions are expected to result in fewer than 50 peak-hour vehicle trips and fewer than 200 peak-hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are to be performed to estimate the incremental trips at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the Proposed Actions would generate 50 or more peak-hour vehicle trips at an intersection, 200 or more peak-hour subway trips at a station, 50 or more peak-hour bus trips in one direction along a bus route, or 200 or more peak-hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

C. LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted to estimate the numbers of person and vehicle trips by mode expected to be generated by the Proposed Actions during the weekday AM, midday, afternoon, and PM peak hours. These estimates were then compared to the *CEQR Technical Manual* analysis thresholds to determine if a Level 2 screening and quantified operational analyses would be warranted. The travel demand assumptions used for the assessment are described below along with a summary of the travel demand that would be generated by the RWCDS.

BACKGROUND

As described above, two With Action scenarios are considered. As shown in **Table H-1**, With Action Scenario 1 would include 379 DUs in a new residential building and a total of 335,735 sf of community facility space, including 54,606 sf of medical center (PACE community facility) space, a 193,476-sf skilled nursing facility with 300 skilled nursing beds and 50 specialty hospital beds in the FHH Building, and an 87,653-gsf Senior Building containing approximately 150 SH units. Compared to the No Action condition, With Action Scenario 1 would result in a net incremental decrease of 49 DUs and 20,788 sf of local retail space, and a net increase of 265,080 sf of community facility space.

Table H-1
No Action and With Action Land Uses
With Action Scenario 1

Land Use	No Action Condition	With Action Condition	Net Increment
Residential			
Residential	428 DU	379 DU	-49 DU
Commercial			
Local Retail	20,788 sf	0 sf	-20,788 sf
Total Commercial	20,788 sf	0 sf	-20,788 sf
Community Facility			
Medical Center	70,655 sf[1]	54,606 sf[2]	-16,049 sf
Skilled Nursing Facility	0 sf	193,476 sf (350 beds)[3]	+193,476 sf (+350 beds)
Nonprofit Senior Housing	0 sf	87,653 sf (150 beds)	+87,653 sf (+150 beds)
Total Community Facility	70,655 sf	335,735 sf	+265,080 sf
Parking			
Accessory Parking Spaces	75	106	31

Notes:
[1] Outpatient medical office space.
[2] PACE community facility.
[3] Includes 300 skilled nursing beds and 50 specialty hospital beds.

As shown in **Table H-2**, With Action Scenario 2 would include a total of 594 DUs in the FHH Building and a new residential building, 121,471 sf of outpatient medical center space and 20,788 sf of retail space. Compared to the No Action condition, With Action Scenario 2 would result in a net incremental increase of 166 DUs and 50,816 sf of community facility space.

Table H-2
No Action and With Action Land Uses
With Action Scenario 2

Land Use	No Action Condition	With Action Condition	Net Increment
Residential			
Residential	428 DU	594 DU	+ 166 DU
Commercial			
Local Retail	20,788 sf	20,788 sf	0 sf
Total Commercial	20,788 sf	20,788 sf	0 sf
Community Facility			
Medical Center[1]	70,655 sf	121,471 sf	+ 50,816 sf
Nonprofit Senior Housing	0 sf	0 sf	0 sf
Total Community Facility	70,655 sf	121,471 sf	+50,816 sf
Parking			
Accessory Parking Spaces	75	106	31

Note:
[1] Outpatient medical office space.

TRANSPORTATION PLANNING FACTORS

The transportation planning factors used to forecast travel demand for the RWCDS land uses are shown in **Table H-3**. The trip generation rates, temporal distributions, modal splits, vehicle occupancies, and truck trip factors for each of the land uses were primarily based on the *CEQR*

Technical Manual, 2011–2015 American Community Survey (ACS) journey-to-work (JTW) data, American Association of State Highway and Transportation Officials (AASHTO) Census Transportation Planning Products Program (CTPP) reverse (JTW) 5-year (2006–2010) data, and factors developed for other recent environmental reviews. Factors are shown for the weekday AM and PM peak hours (typical peak periods for commuter travel demand), the weekday midday and Saturday peak hours (typical peak periods for retail demand), and a weekday afternoon peak hour (a peak period for travel demand from skilled nursing/senior housing facilities). Additional details on the transportation planning factors used for the travel demand forecast are presented in the *Transportation Planning Factors and Travel Demand Forecast* technical memorandum.

Table H-3
Transportation Planning Factors

					Skilled Nursing/Nonprofit Senior Housing						Medical Center			
Land Use	**Local Retail**		**Residential**		**Staff**		**Visitors**		**Admissions/ Discharge**		**Staff**		**Visitors**	
Trip Generation	(1)		(1)		(4,10)		(4,10)		(4,10)		(2)		(2)	
Weekday	205		8.075		2.2		1.4		0.1		10.0		33.6	
Saturday	204		9.6		2.2		1.4		0.1		4.3		14.5	
	per 1,000 sf		per DU		per bed		per bed		per bed		per 1,000 sf		per 1,000 sf	
Temporal Distribution	(1,8)		(1,7)		(4,10)		(4,10)		(4,10)		(2,8)		(2,8)	
AM	3.0%		10.0%		21.0%		1.0%		0.0%		24.0%		6.0%	
Midday	19.0%		5.0%		1.0%		10.0%		9.0%		17.0%		9.0%	
Afternoon	7.0%		5.0%		19.0%		10.0%		15.0%		19.5%		4.1%	
PM	10.0%		11.0%		10.0%		10.0%		6.0%		24.0%		5.0%	
Saturday	10.0%		8.0%		19.0%		10.0%		15.0%		17.0%		9.0%	
Modal Splits	(2) All Periods		(5) All Periods		(3) AM/AN/PM/SA	MD	(9) All Periods		(4) All Periods		(3) AM/AN/PM/SA	MD	(2) All Periods	
Auto	2.5%		7.0%		24.1%	2.0%	32.0%		100.0%		24.1%	2.0%	25.0%	
Taxi	0.5%		1.1%		2.1%	3.0%	11.0%		0.0%		2.1%	3.0%	25.0%	
Subway/Railroad	16.5%		61.9%		44.7%	6.0%	34.8%		0.0%		44.7%	6.0%	29.0%	
Bus	4.0%		13.6%		11.7%	6.0%	0.0%		0.0%		11.7%	6.0%	11.0%	
Walk/Other	76.5%		16.4%		17.3%	83.0%	22.2%		0.0%		17.3%	83.0%	10.0%	
Total	100.0%		100.0%		100.0%	100.0%	100.0%		100.0%		100.0%	100.0%	100.0%	
In/Out Splits	(2,7)		(2,7)		(4,10)		(4,10)		(4,10)		(2)		(2,8)	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	50%	50%	16%	84%	73%	27%	100%	0%	0%	0%	100%	0%	90%	10%
Midday	50%	50%	50%	50%	27%	73%	62%	38%	33%	67%	50%	50%	50%	50%
Afternoon	50%	50%	60%	40%	34%	66%	52%	48%	20%	80%	50%	50%	54%	46%
PM	50%	50%	67%	33%	3%	97%	47%	53%	0%	100%	0%	100%	30%	70%
Saturday	50%	50%	53%	47%	34%	66%	52%	48%	20%	80%	50%	50%	50%	50%
Vehicle Occupancy	(2) All Periods		(5,6) AM/PM	MD/AN/SA	(2,3) All Periods		(4) All Periods		(4) All Periods		(2,3) All Periods		(2) All Periods	
Auto	2.00		1.16	1.62	1.12		1.60		1.00		1.12		1.65	
Taxi	2.00		1.40	1.96	1.40		1.40		1.00		1.40		1.20	
Truck Trip Generation	(1)		(1)		(4,11)		N/A		N/A		(2)		N/A	
Weekday	0.35		0.06		0.07						0.40			
Saturday	0.04		0.02		0.07						0.00			
	Per 1,000 sf		Per DU		Per bed						Per 1,000sf			
Truck Temporal Distribution	(1)		(1)		(2,4,11)		N/A		N/A		(2)		N/A	
AM	8.0%		12.0%		17.0%						9.7%			
Midday	11.0%		9.0%		13.0%						7.8%			
Afternoon	2.0%		2.0%		2.0%						5.1%			
PM	2.0%		2.0%		2.0%						5.1%			
Saturday	11.0%		9.0%		13.0%						0.0%			
Truck In/Out Splits	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	N/A	N/A	N/A	N/A	50.0%	50.0%	N/A	N/A

Source:
(1) *CEQR Technical Manual*
(2) 2017 *East Harlem Rezoning FEIS*
(3) AASHTO CTPP 2006–2010 Reverse JTW 5-Year data for Manhattan Census Tracts 166, 168, 172, and 174.01
(4) 2014 *Jewish Home Lifecare EIS*
(5) 2011–2015 ACS JTW 5-Year data for Manhattan Census Tracts 166, 168, 172, and 174.01
(6) Midday and afternoon vehicle occupancy determined by applying a multiplier (1.4) to the AM/PM rate.
(7) Afternoon temporal and directional distributions for local retail and residential uses based on data from 2004 *Hudson Yard Rezoning and Development Program FGEIS*
(8) Afternoon temporal distribution for medical center use based on data provided by NYCDCP.
(9) Data from the 2018 *Oxford Nursing Home EAS*
(10) Saturday peak hour trip generation rate, temporal distribution and in/out split assumed to be similar to the weekday afternoon peak hour.
(11) Saturday peak hour truck trip generation and temporal distribution assumed to be similar to the weekday midday peak hour.

TRAVEL DEMAND FORECAST

The net incremental change in person and vehicle trips expected to result from the With Action Scenario 2 by the 2025 analysis year were derived based on the net change in land uses shown in **Tables H-1 and H-2** and the transportation planning factors shown in **Table H-3**. **Tables H-4 and H-5** show estimates of the net incremental change in peak-hour person trips and vehicle trips (versus the No Action condition) that would occur in 2025 with implementation of With Action Scenario 1 and With Action Scenario 2, respectively. **Tables H-6 and H-7** compare the numbers of person trips and vehicle trips that would be generated by the two With Action scenarios in each peak hour.

As shown in **Table H-6**, under With Action Scenario 1, the Proposed Actions would generate net decreases of approximately two person trips (in + out combined) in the weekday AM peak hour, 820 in the midday, 88 in the afternoon, 356 in the PM and 284 in the Saturday peak hour. These overall net decreases primarily reflect walk and transit trips associated with the net reductions in local retail, residential and medical center uses under With Action Scenario 1 when compared to the No Action condition. By contrast, as shown in **Table H-7**, peak hour vehicle trips (including auto, truck and taxi trips) would decrease by a net total of approximately 11 trips (in + out combined) in the weekday midday peak hour but increase by approximately 25, 51, 15 and 55 trips in the weekday AM, afternoon and PM, and Saturday peak hours, respectively. These vehicle-trip totals assume that approximately 25 percent of taxis arriving with passengers also pick up outbound passengers, consistent with *CEQR Technical Manual* guidance for project sites in Upper Manhattan. As shown in **Table H-6**, peak-hour subway trips would increase by a net total of 32 trips and 35 trips in the AM and afternoon periods, respectively, and decrease by 138 trips and 49 trips during the midday and PM periods, respectively. There would be no net change in total subway trips in the Saturday peak hour. Peak hour bus trips would increase by approximately 7 trips and 3 trips during the AM and afternoon periods, respectively, and decrease by approximately 41 trips, 19 trips and 6 trips during the weekday midday and PM, and Saturday periods, respectively. Lastly, trips made entirely on foot (walk-only trips) would decrease by approximately 71, 628, 188, 312 and 342 during the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively.

As also shown in **Tables H-6 and H-7**, under With Action Scenario 2, the Proposed Actions would generate a net increase of approximately 362 person trips (in + out combined) in the AM peak hour, 310 in the midday, 240 in the afternoon peak hour, 354 in the PM peak hour and 234 in the Saturday peak hour. Peak hour vehicle trips would increase by a net total of approximately 97, 90, 70, 92 and 55 (in + out combined) in the weekday AM, midday, afternoon, and PM, and Saturday peak hours, respectively. Peak hour subway trips would increase by a net total of 169, 94, 107, 170 and 115 during these same periods, respectively, while bus trips would increase by approximately 44, 32, 30, 44 and 29, respectively. Lastly, walk-only trips would increase by 54, 100, 36, 54 and 33 during the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively.

Overall, as shown in **Tables H-6 and H-7**, With Action Scenario 2 would generate a greater amount of travel demand in each peak hour compared to With Action Scenario 1, with a net total of 364 more person trips in the AM, 1,130 more in the midday, 328 more in the afternoon, 710 more in the PM and 202 more in the Saturday peak hour. Much of this difference would be in trips by the subway and walk-only modes, and would reflect the negative net increment in DUs, local retail, and medical center space (compared to the No Action condition) that would occur under With Action Scenario 1. With Action Scenario 2 would also generate a greater number of vehicle trips in each weekday peak hour compared to With Action Scenario 1, with 72 more in the AM, 101 more in the midday, 19 more in the afternoon, and 77 more in the PM, and the same number of trips in the Saturday peak hour.

Table H-4
Travel Demand Forecast—With Action Scenario 1

Land Use	Local Retail (-20,788 sf)		Residential (-49 DUs)		Skilled Nursing/Nonprofit Senior Housing: Staff (500 beds)		Skilled Nursing/Nonprofit Senior Housing: Visitors (500 beds)		Skilled Nursing/Nonprofit Senior Housing: Admissions/Discharge (500 beds)		Medical Center: Staff (-16,049)		Medical Center: Visitors (-16,049)		Total	
Peak Hour Trips																
AM	-128		-40		232		8		0		-40		-34		-2	
Midday	-810		-20		12		70		6		-28		-50		-820	
Afternoon	-300		-20		210		70		8		-32		-24		-88	
PM	-428		-44		110		70		4		-40		-28		-356	
Saturday	-500		-38		210		70		8		-12		-22		-284	
Person Trips by Mode																
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-2	-2	0	-2	41	15	3	0	0	0	-10	0	-8	-1	24	10
Taxi	0	0	0	0	4	1	1	0	0	0	-1	0	-8	-1	-4	0
Subway	-11	-11	-4	-21	76	28	2	0	0	0	-17	0	-9	-1	37	-5
Bus	-3	-3	-1	-5	20	7	0	0	0	0	-5	0	-3	0	8	-1
Walk/Other	-48	-48	-1	-6	29	11	2	0	0	0	-7	0	-3	0	-28	-43
Total	-64	-64	-6	34	170	62	8	0	0	0	-40	0	-31	-3	37	-39
Midday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-10	-10	-1	-1	0	0	14	9	2	4	0	0	-6	-6	-1	-4
-67Taxi	-2	-2	0	0	0	0	5	3	0	0	0	0	-6	-6	-3	-5
Subway	-67	-67	-6	-6	0	1	14	9	0	0	-1	-1	-7	-7	-67	-71
Bus	-16	-16	-1	-1	0	1	0	0	0	0	-1	-1	-3	-3	-21	-20
Walk/Other	-310	-310	-2	-2	3	7	10	6	0	0	-12	-12	-3	-3	-314	-314
Total	-405	-405	-10	-10	3	9	43	27	2	4	-14	-14	-25	-25	-406	-414
Afternoon	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-4	-4	-1	-1	17	33	12	11	2	6	-4	-4	-3	-3	19	38
Taxi	-1	-1	0	0	2	3	4	4	0	0	0	0	-3	-3	2	3
Subway	-25	-25	-7	-5	32	63	12	12	0	0	-7	-7	-4	-4	1	34
Bus	-6	-6	-2	-1	8	16	0	0	0	0	-2	-2	-1	-1	-3	6
Walk/Other	-114	-114	-2	-1	12	24	8	7	0	0	-3	-3	-1	-1	-100	-88
Total	-150	-150	-12	-8	71	139	36	34	2	6	-16	-16	-12	-12	-81	-7
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-5	-5	-2	-1	1	26	11	12	0	4	0	-10	-2	-5	3	21
Taxi	-1	-1	0	0	0	2	4	4	0	0	0	-1	-2	-5	1	-1
Subway	-35	-35	-18	-9	1	48	11	13	0	0	0	-17	-2	-6	-43	-6
Bus	-9	-9	-4	-2	0	13	0	0	0	0	0	-5	-1	-2	-14	-5
Walk/Other	-164	-164	-5	-3	1	18	7	8	0	0	0	-7	-1	-2	-162	-150
Total	-214	-214	-29	-15	3	107	33	37	0	4	0	-40	-8	-20	-215	-141
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-6	-6	-1	-1	17	33	12	11	2	6	-1	-1	-3	-3	20	39
Taxi	-1	-1	0	0	2	3	4	4	0	0	0	0	-3	-3	2	3
Subway	-41	-41	-12	-12	32	62	12	12	0	0	-3	-3	-3	-3	-15	15
Bus	-10	-10	-3	-3	8	16	0	0	0	0	-1	-1	-1	-1	-7	1
Walk/Other	-192	-192	-3	-3	13	24	8	7	0	0	-1	-1	-1	-1	-176	-166
Total	-250	-250	-19	-19	72	138	36	34	2	6	-6	-6	-11	-11	-176	-108
Vehicle Trips																
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-1	-1	0	-2	37	13	2	0	0	0	-9	0	-5	-1	24	9
Taxi[1]	0	0	0	0	3	3	1	1	0	0	-1	-1	-7	-7	-4	-4
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-1	-1	0	-2	40	16	3	1	0	0	-10	-1	-12	-8	20	5
Midday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-5	-5	-1	-1	0	0	9	6	2	4	0	0	-4	-4	1	0
Taxi[1]	-2	-2	0	0	0	0	5	5	0	0	0	0	-9	-9	-6	-6
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-7	-7	-1	-1	0	0	14	11	2	4	0	0	-13	-13	-5	-6
Afternoon	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-2	-2	-1	-1	15	29	8	7	2	6	-4	-4	-2	-2	16	33
Taxi[1]	-2	-2	0	0	3	3	5	5	0	0	0	0	-5	-5	1	1
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-4	-4	-1	-1	18	32	13	12	2	6	-4	-4	-7	-7	17	34
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-3	-3	-2	-1	1	23	7	8	0	4	0	-9	-1	-3	2	19
Taxi[1]	-2	-2	0	0	1	1	5	5	0	0	-1	-1	-6	-6	-3	-3
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-5	-5	-2	-1	2	24	12	13	0	4	-1	-10	-7	-9	-1	16
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-3	-3	-1	-1	15	29	8	7	2	6	-1	-1	-2	-2	18	35
Taxi[1]	-2	-2	0	0	3	3	5	5	0	0	0	0	-5	-5	1	1
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-5	-5	-1	-1	18	32	13	12	2	6	-1	-1	-7	-7	19	36

Note:
[1] Taxi Trips are balanced to reflect that 25 percent of inbound taxis are available for outbound trips.

Table H-5
Travel Demand Forecast—With Action Scenario 2

Land Use	Residential (166 DUs)		Medical Center: Staff (50,816 sf)		Medical Center: Visitors (50,816 sf)		Total	
Peak Hour Trips								
AM	136		122		104		362	
Midday	68		88		154		310	
Afternoon	68		100		72		240	
PM	148		122		86		356	
Saturday	128		38		68		234	
Person Trips by Mode								
AM	In	Out	In	Out	In	Out	In	Out
Auto	2	8	29	0	23	3	54	11
Taxi	0	1	3	0	23	3	26	4
Subway	13	70	55	0	27	4	95	74
Bus	3	16	14	0	10	1	27	17
Walk/Other	4	19	21	0	9	1	34	20
Total	22	114	122	0	92	12	236	126
Midday	In	Out	In	Out	In	Out	In	Out
Auto	2	2	1	1	19	19	22	22
Taxi	0	0	1	1	19	19	20	20
Subway	21	21	3	3	23	23	47	47
Bus	5	5	3	3	8	8	16	16
Walk/Other	6	6	36	36	8	8	50	50
Total	34	34	44	44	77	77	155	155
Afternoon	In	Out	In	Out	In	Out	In	Out
Auto	3	2	12	12	10	8	25	22
Taxi	0	0	1	1	10	8	11	9
Subway	25	17	22	22	11	10	58	49
Bus	6	4	6	6	4	4	16	14
Walk/Other	7	4	9	9	4	3	20	16
Total	41	27	50	50	39	33	130	110
PM	In	Out	In	Out	In	Out	In	Out
Auto	7	3	0	29	6	15	13	47
Taxi	1	1	0	3	6	15	7	19
Subway	61	30	0	54	8	17	69	101
Bus	13	7	0	14	3	7	16	28
Walk/Other	16	8	0	21	3	6	19	35
Total	98	49	0	121	26	60	124	230
Saturday	In	Out	In	Out	In	Out	In	Out
Auto	5	4	5	5	9	9	19	18
Taxi	1	1	0	0	9	9	10	10
Subway	42	37	8	8	10	10	60	55
Bus	9	8	2	2	4	4	15	14
Walk/Other	11	10	4	4	2	2	17	16
Total	68	60	19	19	34	34	121	113
Vehicle Trips								
AM	In	Out	In	Out	In	Out	In	Out
Auto	2	7	26	0	14	2	42	9
Taxi[1]	1	1	2	2	19	19	22	22
Truck	0	0	1	1	0	0	1	1
Total	3	8	29	3	33	21	65	32
Midday	In	Out	In	Out	In	Out	In	Out
Auto	1	1	1	1	12	12	14	14
Taxi[1]	0	0	2	2	28	28	30	30
Truck	0	0	1	1	0	0	1	1
Total	1	1	4	4	40	40	45	45
Afternoon	In	Out	In	Out	In	Out	In	Out
Auto	3	2	11	11	6	5	20	18
Taxi[1]	0	0	2	2	13	13	15	15
Truck	0	0	1	1	0	0	1	1
Total	3	2	14	14	19	18	36	34
PM	In	Out	In	Out	In	Out	In	Out
Auto	6	3	0	26	4	9	10	38
Taxi[1]	2	2	2	2	17	17	21	21
Truck	0	0	1	1	0	0	1	1
Total	8	5	3	29	21	26	32	60
Saturday	In	Out	In	Out	In	Out	In	Out
Auto	3	2	4	4	5	5	12	11
Taxi[1]	2	2	0	0	14	14	16	16
Truck	0	0	0	0	0	0	0	0
Total	5	4	4	4	19	19	28	27

Notes:
[1] Taxi trips are balanced to reflect that 25 percent of inbound taxis are available for outbound trips.

Table H-6
Comparison of Incremental Peak Hour Person Trips With Action Scenario 1 vs. With Action Scenario 2

Mode	Scenario 1			Scenario 2			Difference Scenario 2—Scenario 1		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Peak Hour									
Auto	24	10	34	54	11	65	30	1	31
Taxi	-4	0	-4	26	4	30	30	4	34
Subway	37	-5	32	95	74	169	58	79	137
Bus	8	-1	7	27	17	44	19	18	37
Walk/Other	-28	-43	-71	34	20	54	62	63	125
Total	37	-39	-2	236	126	362	199	165	364
Midday Peak Hour									
Auto	-1	-4	-5	22	22	44	23	26	49
Taxi	-3	-5	-8	20	20	40	23	25	48
Subway	-67	-71	-138	47	47	94	114	118	232
Bus	-21	-20	-41	16	16	32	37	36	73
Walk/Other	-314	-314	-628	50	50	100	364	364	728
Total	-406	-414	-820	155	155	310	561	569	1,130
Afternoon Peak Hour									
Auto	19	38	57	25	22	47	6	-16	-10
Taxi	2	3	5	11	9	20	9	6	15
Subway	1	34	35	58	49	107	57	15	72
Bus	-3	6	3	16	14	30	19	8	27
Walk/Other	-100	-88	-188	20	16	36	120	104	224
Total	-81	-7	-88	130	110	240	211	117	328
PM Peak Hour									
Auto	3	21	24	13	47	60	10	26	36
Taxi	1	-1	0	7	19	26	6	20	26
Subway	-43	-6	-49	69	101	170	112	107	219
Bus	-14	-5	-19	16	28	44	30	33	63
Walk/Other	-162	-150	-312	19	35	54	181	185	366
Total	-215	-141	-356	124	230	354	339	371	710
Saturday Peak Hour									
Auto	20	39	59	19	18	37	-1	-21	-22
Taxi	2	3	5	10	10	20	8	7	15
Subway	-15	15	0	60	55	115	75	40	115
Bus	-7	1	-6	15	14	29	22	13	35
Walk/Other	-176	-166	-10	17	16	33	193	182	43
Total	-176	-108	-68	121	113	134	297	221	202

Table H-7
Comparison of Peak Hour Vehicle Trips
With Action Scenario 1 vs. With Action Scenario 2

Mode	Scenario 1			Scenario 2			Difference Scenario 2—Scenario 1		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Peak Hour									
Auto	24	9	33	42	9	51	18	0	18
Taxi[1]	-4	-4	-8	22	22	44	26	26	52
Truck	0	0	0	1	1	2	1	1	2
Total	20	5	25	65	32	97	45	27	72
Midday Peak Hour									
Auto	1	0	1	14	14	28	13	14	27
Taxi[1]	-6	-6	-12	30	30	60	36	36	72
Truck	0	0	0	1	1	2	1	1	2
Total	-5	-6	-11	45	45	90	50	51	101
Afternoon Peak Hour									
Auto	16	33	49	20	18	38	4	-15	-11
Taxi[1]	1	1	2	15	15	30	14	14	28
Truck	0	0	0	1	1	2	1	1	2
Total	17	34	51	36	34	70	19	0	19
PM Peak Hour									
Auto	2	19	21	10	38	48	8	19	27
Taxi[1]	-3	-3	-6	21	21	42	24	24	48
Truck	0	0	0	1	1	2	1	1	2
Total	-1	16	15	32	60	92	33	44	77
Saturday Peak Hour									
Auto	18	35	53	12	11	23	-6	-24	-30
Taxi[1]	1	1	2	16	16	32	15	15	30
Truck	0	0	0	0	0	0	0	0	0
Total	19	36	55	28	27	55	9	-9	0

Note:
[1] Taxi trips are balanced to reflect that 25 percent of taxis arriving with passengers also pick up outbound passengers, consistent with *CEQR Technical Manual* guidelines.

As it would generate a comparable or greater number of overall person trips and vehicle trips in each peak hour, With Action Scenario 2 was selected as the With Action RWCDS for this analysis for determining the potential significant adverse transportation impacts from the Proposed Actions. As noted previously, TCC's objective is to modernize its facilities, as laid out in With Action Scenario 1. However, the EAS analyzes the effect of the Proposed Actions under With Action Scenario 2 where it would be more conservative to do so. The following evaluates the traffic, transit, and pedestrian trips that would be generated by Scenario 2 in each peak hour with respect to the *CEQR Technical Manual* Level 1 screening analysis thresholds.

TRAFFIC

As shown in **Table H-7**, under With Action Scenario 2, the number of incremental peak-hour vehicle trips generated by the Proposed Actions—97, 90, 70, 92 and 55 in the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively—would exceed the 50-trip threshold in each period, and a Level 2 screening assessment was conducted to determine if a quantified analysis is warranted.

TRANSIT

According to the general thresholds used by the Metropolitan Transportation Authority and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus and/or subway analysis would be warranted. Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.

As shown in **Table H-6**, under With Action Scenario 2, the Proposed Actions would not generate an incremental demand of 200 or more new subway passengers or 50 or more new bus passengers in any peak hour. Therefore, detailed subway and bus analyses were not warranted.

PEDESTRIANS

According to *CEQR Technical Manual* guidance, a quantified analysis of pedestrian conditions is typically required if a proposed action would result in 200 or more peak hour pedestrian trips at any pedestrian element (sidewalk, corner area or crosswalk). As shown in **Table H-6**, under With Action Scenario 2, the Proposed Actions would generate an incremental demand of 267, 226, 173, 268 and 177 walk-only trips and pedestrians en route to and from area subway stations and bus stops in the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively. It is also estimated that there would be an additional 55, 40, 42, 51 and 26 pedestrian trips en route to and from nearby off-site public parking in each of these periods, respectively.[1] A Level 2 screening analysis is therefore warranted to determine which, if any, pedestrian elements would require quantified analysis.

D. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network and pedestrian elements, and the identification of specific locations where the incremental increase in demand may potentially exceed *CEQR Technical Manual* analysis thresholds and therefore require a quantitative analysis.

VEHICULAR TRAFFIC

As discussed above, under With Action Scenario 2 there would be 97, 90, 70, 92 and 55 incremental vehicle trips in the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively. These traffic volumes would exceed the *CEQR Technical Manual* threshold of 50 peak-hour vehicle trips for Level 1 screening and, therefore, a Level 2 screening was performed to help identify intersections for detailed analysis.

The *CEQR Technical Manual* Level 2 screening threshold for detailed analysis is also 50 peak-hour vehicles, but this threshold applies to individual intersections rather than total trips generated. Peak hour project increment traffic volumes were therefore assigned to the street network in proximity to the Project Area to identify the intersections that would potentially exceed the 50-trip threshold during one or more periods. The assignments of auto and taxi trips were based on the anticipated origins and destinations of vehicle trips associated with the different land uses under With Action Scenario 2 (i.e., residential and medical center) as well as the network's street directions. The commuter origin-destination (O–D) of residential trips were based upon 2006–2010 ACS (JTW) data, while the origins/destinations of the medical center staff trips were based on 2006–2010 ACS reverse (JTW) data. O–D for trips by medical center visitors, which are mostly local in nature, were

[1] As the Proposed Actions would include 106 spaces of on-site accessory parking, not all persons traveling by auto would walk to and from nearby off-site public parking.

based on population density in proximity to the Project Area and surrounding neighborhoods within a 1-mile radius. (Additional data on the distributions of auto and taxi trips by land use are presented in the *Transportation Planning Assumptions and Travel Demand Forecast Technical Memorandum*.) Based on the O–D data, auto and taxi trips were first assigned to various portals on the periphery of the Project Area, and from there via the most direct route to the vicinity of the Project Area. Auto trips generated by residential uses were assumed to utilize the proposed 106-spaces of on-site accessory parking provided under the RWCDS, while other project-generated auto demand was assigned to the nearest off-street public parking facility with available capacity. Taxis were assumed to pick-up/drop-off at Project Area frontages. Truck trips were assigned to designated local truck routes (Lexington and Third Avenues) and then to the most direct paths to and from the Project Area's service entrance on East 106th Street and exit on East 105th Street.

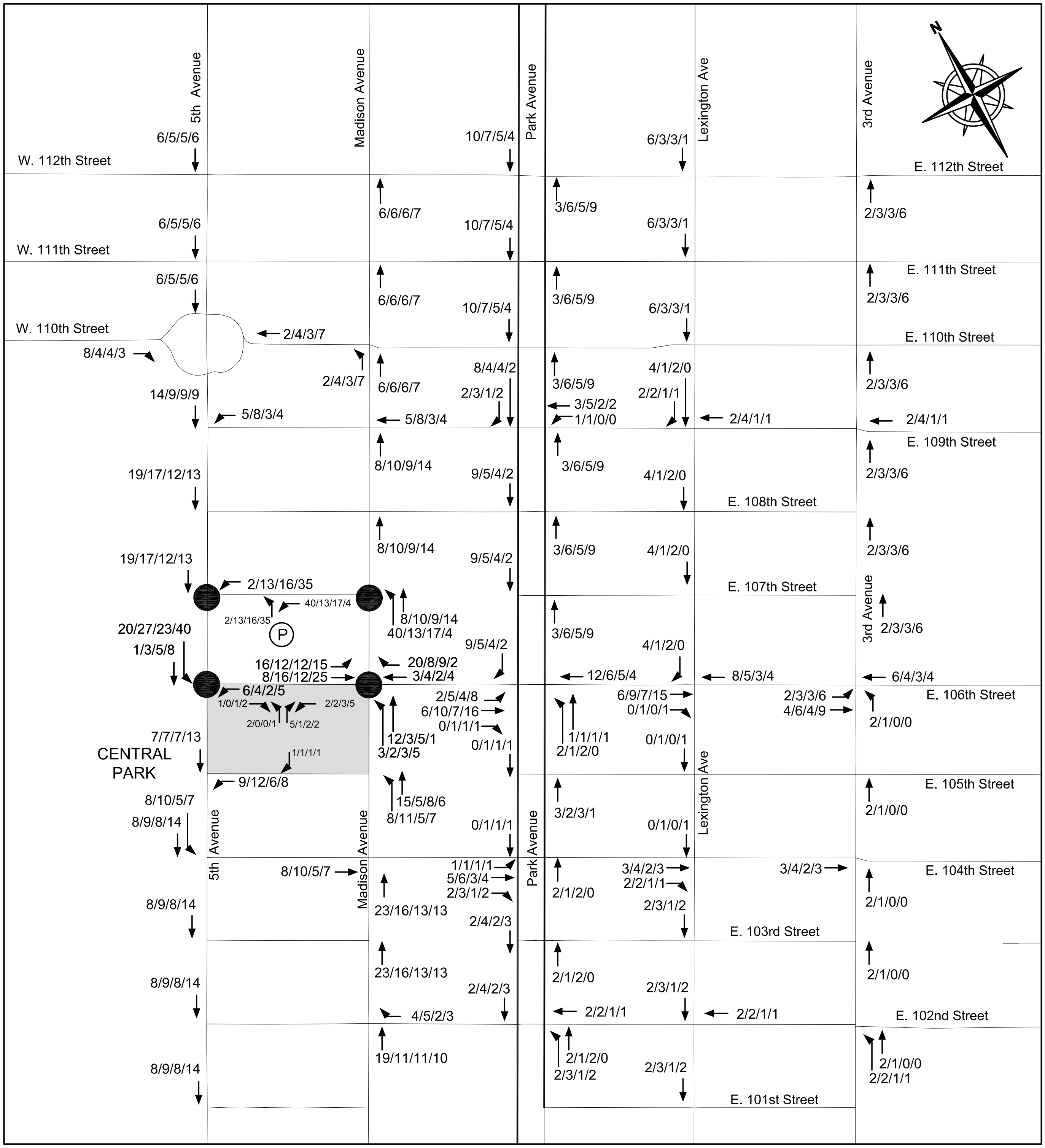
The assignments of net incremental peak-hour vehicle trips at intersections in proximity to the Project Area under With Action Scenario 2 are shown in **Figure H-2**. As shown in **Figure H-2**, based on these assignments, two intersections (both signalized) are expected to exceed the 50-trip analysis threshold in the AM and/or PM peak hours and were selected for detailed analysis—Fifth Avenue at East 106th Street and Madison Avenue at East 106th Street. In consultation with DCP, two additional signalized intersections where incremental demand would be just below the 50-trip threshold—Fifth Avenue at East 107th Street (48 trips in the PM) and Madison Avenue at East 107th Street (48 trips in the AM)—were also included for detailed analysis. As no intersection would experience 50 or more incremental trips in the weekday, midday, or Saturday peak hours, these periods were not included in the analysis.

PEDESTRIANS

As discussed above, With Action Scenario 2 would generate a total incremental pedestrian demand of approximately 267, 226, 173, 268 and 177 trips in the weekday AM, midday, afternoon and PM, and Saturday peak hours, respectively. Based on the auto-trip assignments, it is also estimated that there would be an additional 55, 40, 42, 51 and 26 pedestrian trips en route to and from nearby off-site public parking in each of these periods, respectively. These pedestrian trips are expected to utilize entrances to the anticipated residential and medical center components located on both East 105th and East 106th streets and would be en route to and from area subway stations, bus stops, off-site parking, and other local destinations. Based on likely travel patterns, it is anticipated that incremental pedestrian demand would exceed the *CEQR Technical Manual* 200-trip analysis threshold in the AM and/or PM peak hours at two locations—the northwest corner of the Madison Avenue/East 105th Street intersection and the southwest corner of the Madison Avenue/East 106th Street intersection (i.e., the southeast and northeast corners of the Project Area, respectively). These two corner areas, shown in **Figure H-3**, have therefore been selected for detailed analysis focusing on the AM and PM periods. As project-generated pedestrian demand would become increasingly dispersed with increasing distance from the Project Area, it is unlikely that any other sidewalk, corner area or crosswalk would experience 200 or more new trips in any one peak hour as a result of the Proposed Actions.

PARKING

Parking demand from community facility and retail uses typically peaks in the weekday midday period and declines during the afternoon and evening. By contrast, residential parking demand typically peaks during the overnight period.



Legend:

= **Analyzed Intersection**

= **Project Area**

19/11/11/10 = AM/ Midday/ Afternoon/ PM

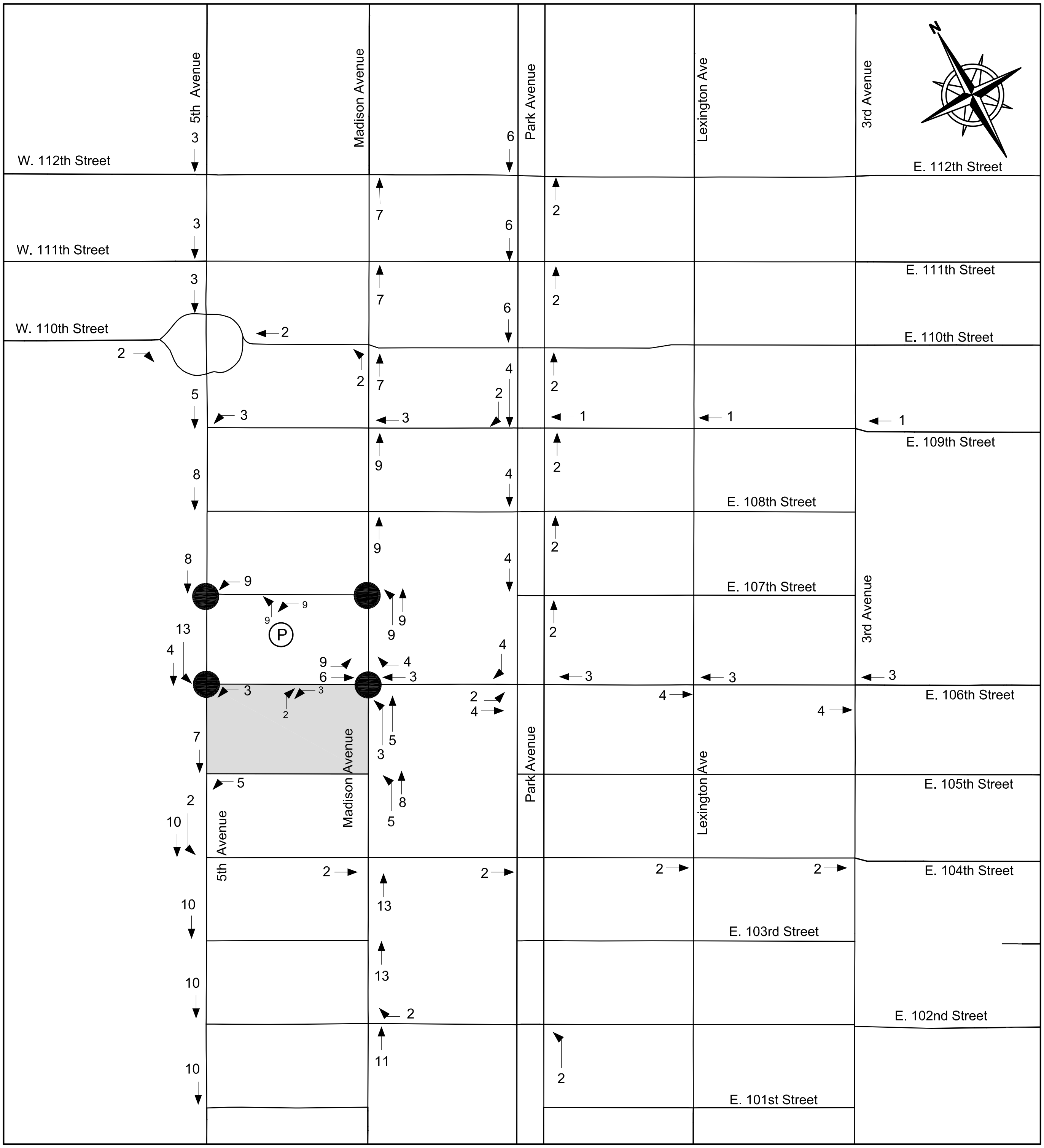
Source: PHA

Project Increment Weekday Peak Hour Traffic Volumes

TERENCE CARDINAL COOKE REZONING

Figure H-2a

1.7.19



Legend:

= **Analyzed Intersection**

= **Project Area**

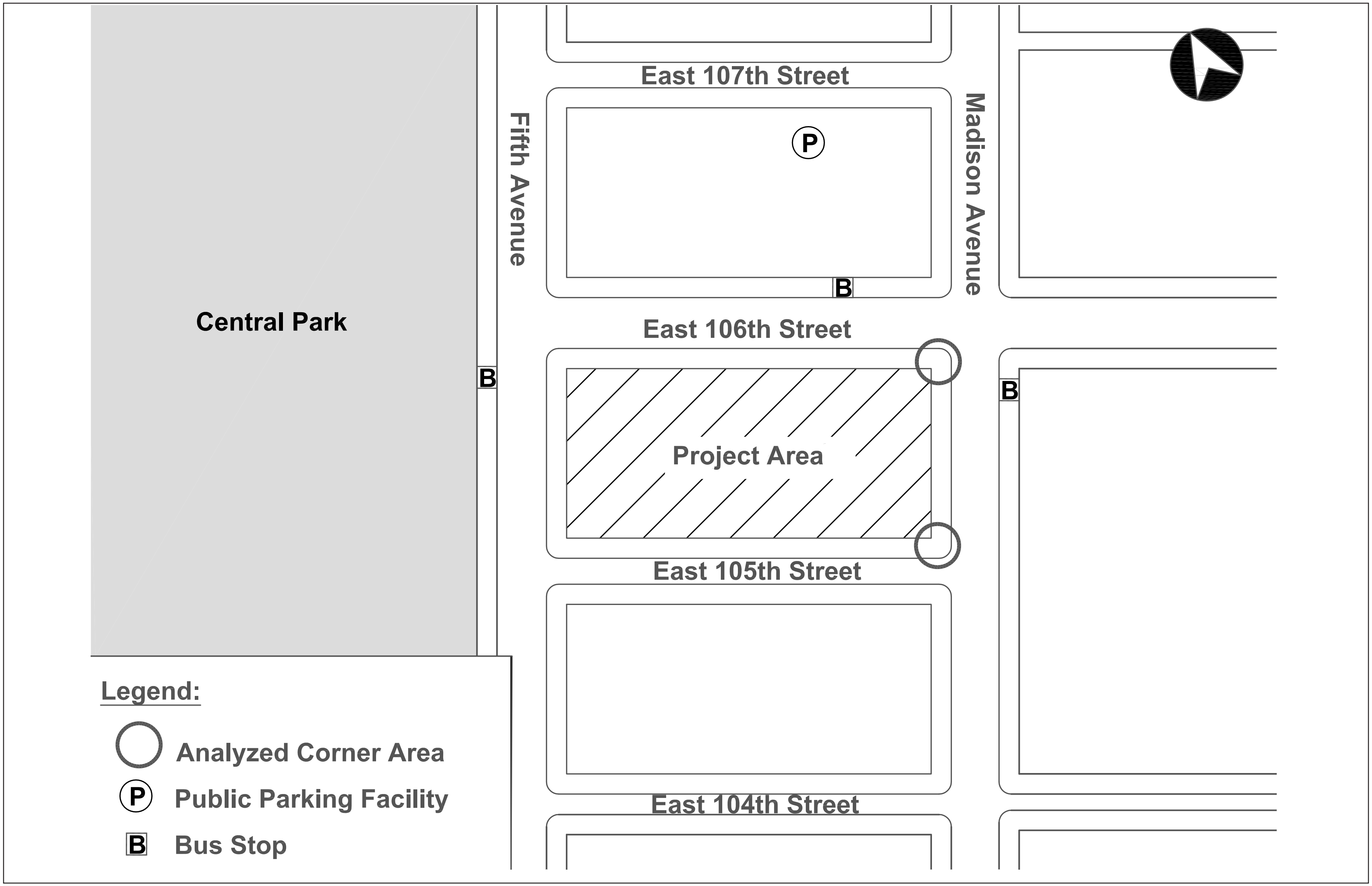
Source: PHA

Project Increment Saturday Peak Hour Traffic Volumes

TERENCE CARDINAL COOKE REZONING

Figure H-2b

1.7.19



Source: PHA

TERENCE CARDINAL COOKE REZONING

Pedestrian Analysis Locations

Figure H-3

It is anticipated that the 106 spaces of on-site accessory parking would not be sufficient to accommodate the demand that would be generated by the Proposed Actions. As such, a detailed analysis of off-street public parking conditions in the weekday midday and overnight periods under With Action Scenario 2 is provided. The analysis assesses the existing supply and demand during each period within a study area extending ¼-mile from the Project Area, and changes in parking supply and utilization under both No Action and With Action conditions.

E. TRANSPORTATION ANALYSES METHODOLOGIES

TRAFFIC

ANALYSIS METHODOLOGY

The traffic analysis examines conditions in the weekday AM and PM peak periods when the increased travel demand would exceed the 50-trip analysis threshold at one or more intersections. Based on existing traffic volumes in the vicinity of the Project Area, the peak hours selected for analysis are 7:30 AM–8:30 AM and 5:00 PM–6:00 PM.

The capacity analyses at intersections are based on the methodology presented in the 2000 *Highway Capacity Manual* (HCM) Software HCS+ Version 5.5. Traffic data required for these analyses include the hourly volumes on each approach, turning movements, the percentage of trucks and buses, and pedestrian volumes at crosswalks. Field inventories are also necessary to document the physical layout and street widths, lane markings, curbside parking regulations, and other relevant characteristics needed for the analysis.

The HCM methodology produces a volume-to-capacity (v/c) ratio for each signalized intersection approach. The v/c ratio represents the ratio of traffic volume on an approach to the approach's carrying capacity. A v/c ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio between 0.95 and 1.0, near-capacity conditions are reached and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses the quality of traffic flow in terms of level of service (LOS), which is based on the amount of delay that a driver typically experiences at an intersection. Levels of service range from A, representing minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

Table H-8 shows the LOS/delay relationship for signalized intersections using the HCM methodology. LOS A, B, and C generally represent highly favorable to fair levels of traffic flow. At LOS D, the influence of congestion becomes noticeable. LOS E is considered to be the limit of acceptable delay, and LOS F is considered to be unacceptable to most drivers. In this traffic impact analysis, a signalized lane grouping operating at LOS E or F or a v/c ratio of 0.90 or more is identified as congested.

Table H-8
Intersection LOS Criteria
For Signalized Intersections

LOS	Description	Average Delay per Vehicle (seconds)
A	Satisfactory—Little/No Delay	Less than 10.1
B	Satisfactory—Minor Delay	10.1 to 20.0
C	Satisfactory—With Some Delay	20.1 to 35.0
D	Borderline Congestion	35.1 to 55.0
E	Marginally Acceptable Congestion	55.1 to 80.0
F	Unsatisfactory—Highly Congested	Greater than 80.0
Source: *HCM*		

SIGNIFICANT IMPACT CRITERIA

The identification of significant adverse traffic impacts at analyzed intersections is based on guidance presented in the *CEQR Technical Manual*. If a lane group in the With Action condition would be LOS A, B, or C, or marginally acceptable LOS D (i.e., delay less than or equal to 45.0 seconds/vehicle for a signalized intersection), the impact is not considered significant. If the lane-group LOS would deteriorate from LOS A, B, or C in the No Action condition to worse than mid-LOS D or to LOS E or F in the With Action condition, a significant traffic impact is identified. For a lane group that would operate at LOS D in the No Action condition, an increase in delay of 5 or more seconds in the With Action condition is considered a significant impact if the With Action delay would exceed mid-LOS D. For a lane group that would operate at LOS E in the No Action condition, a projected With Action increase in delay of 4 or more seconds is considered a significant impact. For a lane group that would operate at LOS F in the No Action condition, a projected With Action increase in delay of 3 or more seconds is considered a significant impact.

PEDESTRIANS

ANALYSIS METHODOLOGY

Data on peak period pedestrian flow volumes were collected at the analyzed corner areas at the Project Area in May 2018. Peak hours were determined by comparing rolling hourly averages, and the highest 15-minute volumes within the selected peak hours were used for analysis. Based on existing pedestrian volumes, the weekday AM and PM peak hours selected for analysis are 7:45 AM–8:45 AM and 5:00 PM–6:00 PM.

Peak 15-minute pedestrian flow conditions during the weekday AM and PM peak hours were analyzed using HCM methodology and procedures outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity, and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a “time-space” analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS

A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table H-9** defines the LOS criteria for pedestrian crosswalk/corner area conditions, as based on HCM methodology.

Table H-9
Pedestrian Crosswalk/Corner Area
LOS Descriptions

LOS	Description	Average Pedestrian Space (SFP)
A	Unrestricted	> 60
B	Slightly Restricted	> 40 to 60
C	Restricted but fluid	> 24 to 40
D	Restricted, necessary to continuously alter walking stride and direction	> 15 to 24
E	Severely restricted	> 8 to 15
F	Forward progress only by shuffling; no reverse movement possible	≤ 8

Notes:
Based on average conditions for 15 minutes
SFP—square feet per pedestrian
Source:
CEQR Technical Manual

SIGNIFICANT IMPACT CRITERIA

The *CEQR Technical Manual* impact criteria for a central business district (CBD) location were used to identify potential significant adverse impacts. These criteria define a significant adverse corner area or crosswalk impact to have occurred if the average pedestrian space under the No Action condition is greater than 21.5 SFP and, under the With Action condition, the average pedestrian space decreases to 19.5 SFP or less (mid-LOS D or worse). If the pedestrian space under the With Action condition is greater than 19.5 SFP (mid-LOS D or better), the impact should not be considered significant. If the average pedestrian space under the No Action condition is between 5.1 and 21.5 SFP, a decrease in pedestrian space under the With Action condition should be considered significant based on **Table H-10**, which shows a sliding-scale that identifies what decrease in pedestrian space under the With Action condition is considered a significant impact for a given amount of pedestrian space in the No Action condition. If the decrease in pedestrian space is less than the value in **Table H-10**, the impact is not considered significant. If the average pedestrian space under the No Action condition is less than 5.1 SFP, then a decrease in pedestrian space under the With Action condition greater than or equal to 0.2 SFP should be considered significant.

Table H-10
Significant Impact Criteria for Corners and Crosswalks in a CBD Location

No Action Condition Pedestrian Space (SFP)	With Action Condition Pedestrian Space Reduction to be Considered a Significant Impact (SFP)
> 21.5	With Action Condition < 19.5
21.3 to 21.5	Reduction ≥ 2.1
20.4 to 21.2	Reduction ≥ 2.0
19.5 to 20.3	Reduction ≥ 1.9
18.6 to 19.4	Reduction ≥ 1.8
17.7 to 18.5	Reduction ≥ 1.7
16.8 to 17.6	Reduction ≥ 1.6
15.9 to 16.7	Reduction ≥ 1.5
15 to 15.8	Reduction ≥ 1.4
14.1 to 14.9	Reduction ≥ 1.3
13.2 to 14	Reduction ≥ 1.2
12.3 to 13.1	Reduction ≥ 1.1
11.4 to 12.2	Reduction ≥ 1.0
10.5 to 11.3	Reduction ≥ 0.9
9.6 to 10.4	Reduction ≥ 0.8
8.7 to 9.5	Reduction ≥ 0.7
7.8 to 8.6	Reduction ≥ 0.6
6.9 to 7.7	Reduction ≥ 0.5
6 to 6.8	Reduction ≥ 0.4
5.1 to 5.9	Reduction ≥ 0.3
< 5.1	Reduction ≥ 0.2
Source: *CEQR Technical Manual*	

VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Under *CEQR Technical Manual* guidance, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high crash locations. These are defined as locations with 48 or more total reportable and non-reportable crashes or where 5 or more pedestrian/bicyclist injury crashes have occurred in any consecutive 12 months of the most recent 3-year period for which data are available. For these locations, crash trends would be identified to determine whether projected vehicular and pedestrian traffic would further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new trips. The determination of potential significant safety impacts depends on the type of area where the Project Area is located, traffic and pedestrian volumes, crash types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety should be identified and coordinated with the New York City Department of Transportation (DOT).

PARKING

ANALYSIS METHODOLOGY

The parking analysis identifies the supply of off-street public parking near a proposed project and determines the extent to which the supply is utilized in existing conditions and in the No Action and With Action conditions. The analysis considers anticipated changes in the study area's parking supply and demand, and compares project-generated parking demand with future parking availability to determine if a parking shortfall is likely to result. The displacement of existing parking capacity attributable to the proposed action or project is also considered. Typically, the analysis encompasses the parking facilities—public parking lots and garages—that vehicular traffic destined to a project site or area would likely utilize. According to the *CEQR Technical Manual*, a ¼-mile radius around a project site is generally assumed as the distance that someone driving to the site would be willing to walk. Therefore, the parking analysis utilizes a ¼-mile radius around the Project Area under both No Action and With Action conditions.

SIGNIFICANT IMPACT CRITERIA

Should a proposed action generate the need for more parking than it provides, a shortfall of spaces may be considered significant. The availability of off-street parking spaces within a convenient walking distance beyond the study area (about ¼- to ½-mile)—as well as the availability of alternative modes of transportation—are considered in making this determination.

Under *CEQR Technical Manual* guidance, different criteria for determining significance are applied based on whether or not a proposed project is located in residential or commercial areas designated as Parking Zones 1 and 2 as shown in Map 16-2 (CEQR Parking Zones) in the *CEQR Technical Manual*. As the Project Area is located within Zone 1 as shown in Map 16-2, the inability of the Proposed Actions or the surrounding area to accommodate future parking demands would be considered a parking shortfall, but would generally not be considered significant due to the magnitude of available alternative modes of transportation.

F. TRAFFIC

EXISTING CONDITIONS

PROJECT AREA STREET NETWORK

As shown in **Figure H-1**, the street network in proximity to the Project Area is composed of the typical Manhattan grid system of north-south avenues and east-west cross-streets. South of East 110th Street most cross-streets end at Fifth Avenue, which borders Central Park. The primary north-south corridors serving the Project Area include Third, Lexington, Park, Madison, and Fifth Avenues. Primary cross-streets include East 96th Street, East 106th Street and East 110th Street (Central Park North). One limited access roadway—the Franklin D. Roosevelt (FDR) Drive—located approximately 0.7-mile to the east of the Project Area also provides non-commercial vehicles with access to other areas of Manhattan to the north and south.

In proximity to the Project Area, Third Avenue operates with five northbound travel lanes plus parking along both curbs. It is a designated local truck route, and is traversed by New York City Transit (NYCT) M98, M101, M102, and M103 local buses in proximity to the Project Area. Lexington Avenue, which functions as a southbound couplet to northbound Third Avenue, is relatively narrow and operates with one to two moving lanes plus parking along both curbs in proximity to the Project Area. Like Third Avenue, it is traversed by M98, M101, M102 and M103 local buses and is a designated local truck route.

Park Avenue is a two-way corridor composed of northbound and southbound roadways separated by a viaduct used by Metro-North Railroad trains. In proximity to the Project Area it operates with a single moving lane plus a parking lane in each direction. To the west of Park Avenue is the northbound Madison Avenue/southbound Fifth Avenue couplet. Madison Avenue typically operates with three moving lanes plus parking along each curb. Fifth Avenue also operates with three moving lanes plus parking along each curb north of Duke Ellington Circle (East 110th Street) at the northeast corner of Central Park. To the south of the circle it operates with two moving lanes plus parking along each curb, except between the hours of 7 AM and 10 AM, Monday through Friday, when the west curb lane functions as a dedicated bus lane. Both Madison Avenue and Fifth Avenue function as major bus corridors. M1 local buses traverse both corridors north of East 110th Street, while to the south, M1 buses are joined by M2, M3, M4, and M106 local buses. A number of express bus routes also traverse Madison and Fifth Avenues in proximity to the Project Area.

Primary east-west crosstown corridors in the vicinity of the Project Area include the East 96th Street/East 97th Street couplet to the south, East 106th Street, and East 110th Street to the north. East 96th Street is a two-way street that operates with two moving lanes plus parking in each direction. At Fifth Avenue it functions as an outlet for the eastbound 97th Street Transverse across Central Park. East 97th Street, which provides access to the westbound Transverse, operates one-way westbound with one moving lane plus parking along both curbs. M96 local buses traverse East 96th Street in both directions east of Madison Avenue, and in the eastbound direction only (along with M106 buses) to the west of Madison Avenue. Westbound M96 buses use East 97th Street west of Madison Avenue to access the westbound 97th Street Transverse. Both East 96th Street and the portion of East 97th Street west of Madison Avenue are designated local truck routes, as is the Transverse across Central Park.

East 106th Street, which borders the Project Area on the north, extends from Fifth Avenue to the East River and typically operates with one moving lane, a bike lane, and a parking lane in each direction. The eastbound and westbound lanes are separated by a striped median, and left-turn bays are provided at many locations. The corridor is traversed by M106 local buses.

East 110th Street operates one-way eastbound with two moving lanes plus parking along both curbs to the east of Madison Avenue, and one-way westbound with one moving lane plus parking along the south curb from Madison Avenue to Duke Ellington Circle (Fifth Avenue). West of Duke Ellington Circle, the roadway is designated as Central Park North and operates two-way with one moving lane plus parking in each direction. M2, M3, and M4 local buses traverse East 110th Street to the west of Madison Avenue.

Also of note is East 105th Street, which borders the Project Area on the south. The street operates one-way westbound with one moving lane plus parking along both curbs to the east of Park Avenue and from Madison Avenue to Fifth Avenue. (Between Park and Madison Avenues is the New York City Housing Authority’s [NYCHA] Carver Houses complex). Most other east-west cross-streets in proximity to the Project Area typically operate with one to two moving lanes plus parking along each curb.

To the east of the Project Area is FDR Drive, a limited-access parkway restricted to non-commercial vehicles that runs along the west bank of the East River to South Ferry in Lower Manhattan. North of the Robert F. Kennedy (RFK) Bridge, the parkway becomes the Harlem River Drive, which continues along the west bank of the Harlem River to Tenth Avenue and Dyckman Street in Inwood and provides access to and from the George Washington Bridge (I-95) to New Jersey. Access ramps to and from the FDR Drive are located at East 96th Street, East 100th Street (southbound only), East 105th Street (southbound exit only) and East 116th Street (southbound only).

Bus Routes

NYCT local bus routes primarily operate along the following study area corridors:

- Fifth Avenue (M1, M2, M3, M4, M106)

- Madison Avenue (M1, M2, M3, M4, M106)
- Lexington Avenue (M98, M101, M102, M103)
- Third Avenue (M98, M101, M102, M103)
- East 96th Street (M96)
- East 106th Street (M106)
- Central Park North/110th Street (M2, M3, M4)

Truck Routes

New York City has established local and through truck routes to manage the flow of trucks and improve the quality of neighborhoods. It defines a truck as "a vehicle which is designed for transportation of property, which has either of the following characteristics: two axles and six tires or three or more axles." Trucks must generally travel on local truck routes to reach the intersection nearest their destinations. In proximity to the Project Area, local truck routes have been designated along First, Second, Third, and Lexington Avenues, East 96th Street and East 97th Street (west of Madison Avenue). Through trucks are defined as having neither an origin nor a destination within Manhattan. The nearest designated through truck routes in proximity to the Project Area are in The Bronx and include I-87 (the Major Deegan Expressway) and I-278 (the Bruckner Expressway), which also crosses the RFK Bridge between The Bronx and Queens.

Bicycle Lanes

As shown in **Figure H-4**, protected bicycle lanes have been installed along First and Second Avenues. There are also protected bicycle paths within Central Park. Conventional bicycle lanes are present along East 106th, East 110th, and East 111th Streets, and a shared lane is present along East 102nd Street east of Second Avenue. Potential future bicycle routes include West 110th and West 111th Streets to the west of Fifth Avenue, East 102nd Street west of Second Avenue and along Fifth Avenue.

TRAFFIC CONDITIONS

To establish the existing conditions traffic network, a traffic data collection program—including 3 days of turning movement counts—was undertaken in May 2018. Physical inventory data needed for operational analysis—e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations—were also collected in May 2018. Signal timing plans for the analyzed intersections area were obtained from DOT. **Figure H-5** shows existing traffic volumes during weekday AM and PM peak hours.

INTERSECTION CAPACITY ANALYSIS

The lane group v/c ratios, delays, and LOS at the four analyzed intersections under existing conditions are shown in **Table H-11**. A lane group is considered congested if it operates at LOS E or F and/or with a v/c ratio of 0.90 or above. A v/c ratio of 1.00 or above reflects a lane group operating at or over capacity. As shown in **Table H-11**, only the intersection of Madison Avenue and East 106th Street is experiencing congestion under existing conditions, with the eastbound approach operating at a v/c ratio of 0.91 (LOS D). All other lane groups at the four analyzed intersections are currently operating at LOS D or better with v/c ratios of less than 0.90 in both the AM and PM peak hours.

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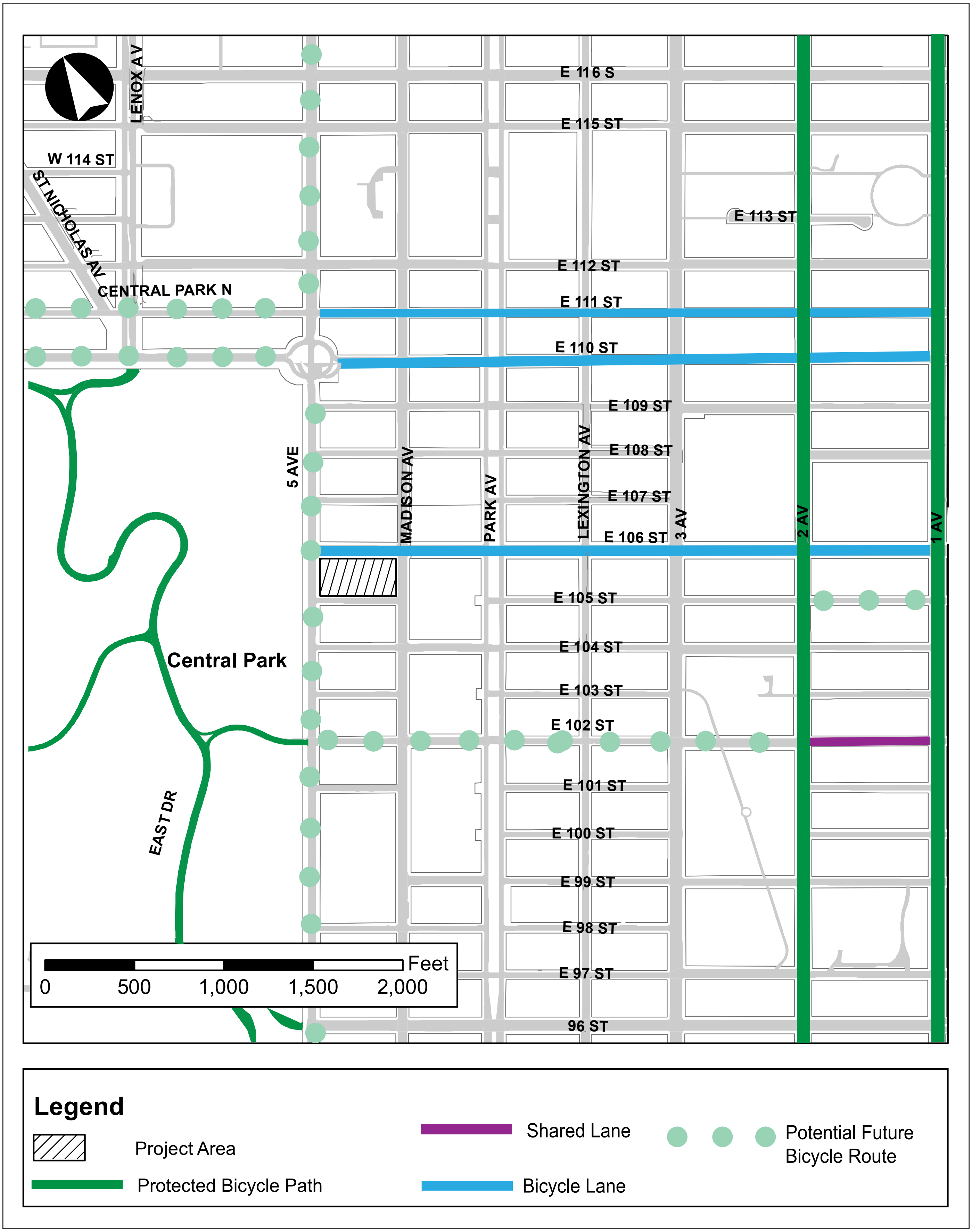
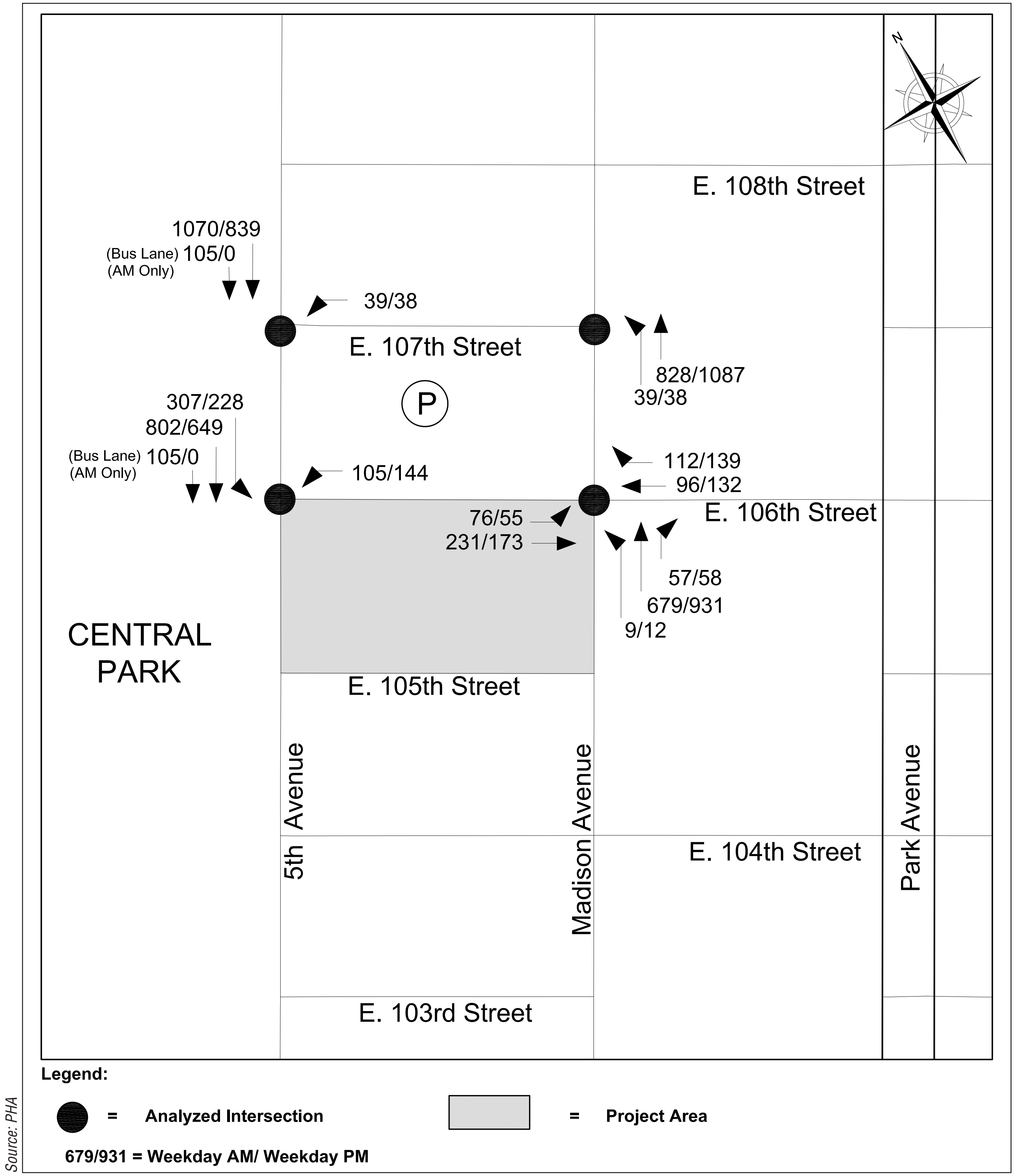


Source: PHA

Area Bicycle Routes

Figure H-4



Existing Peak Hour Traffic Volumes

Figure H-5

Table H-11
Existing Peak Hour Traffic Conditions

Intersection	Lane Group	Weekday AM Peak Hour v/c ratio	Weekday AM Peak Hour Delay (sec/veh)	Weekday AM Peak Hour LOS	Weekday PM Peak Hour v/c ratio	Weekday PM Peak Hour Delay (sec/veh)	Weekday PM Peak Hour LOS
Madison Avenue (N) at East 106th Street (E-W)	EB-LT	0.91	55.0	D	0.61	31.2	C
	WB-TR	0.64	33.0	C	0.75	37.9	D
	NB-LT	0.39	12.4	B	0.47	13.2	B
	NB-R	0.15	10.9	B	0.14	10.7	B
Madison Avenue (N) at East 107th Street (W)	NB-LT	0.44	13.0	B	0.53	14.0	B
Fifth Avenue (S) at East 106th Street (E-W)	WB-L	0.39	30.7	C	0.49	32.8	C
	SB-LT	0.87	25.2	C	0.74	19.2	B
Fifth Avenue (S) at East 107th Street (E-W)	WB-L	0.12	20.7	C	0.09	20.3	C
	SB-T	0.76	19.8	B	0.66	17.1	B

Notes:
EB = eastbound, WB = westbound, NB = northbound, SB = southbound
L = left, T = through, R = right, DfL = analysis considers a defacto left-turn lane on this approach
* denotes a congested lane group (LOS E or F, or v/c ratio greater than or equal to 0.9)
Analysis is based on the HCM methodology (HCS+ version 5.5)

FUTURE WITHOUT THE PROPOSED ACTIONS

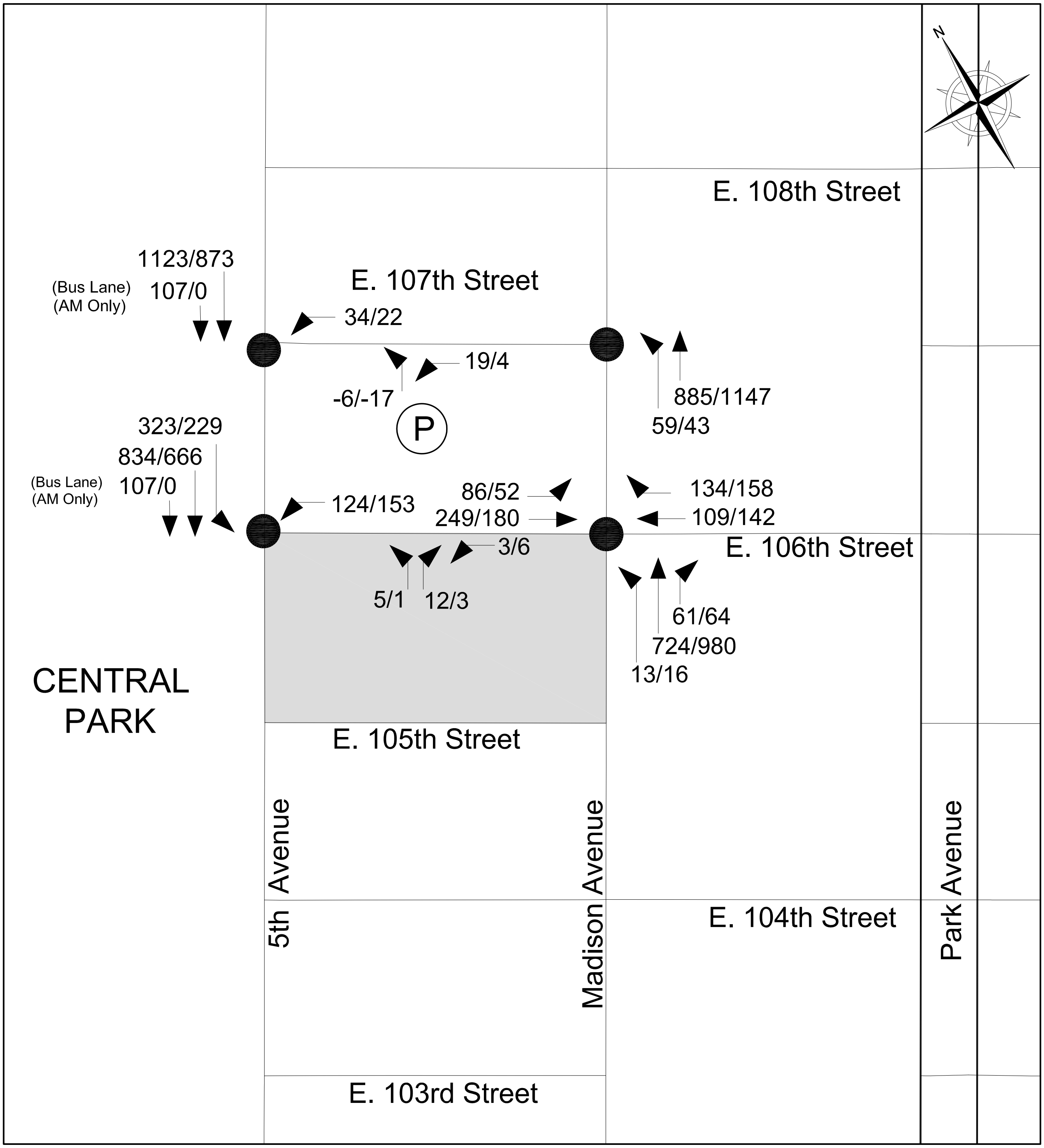
NO ACTION TRAFFIC GROWTH

Between 2018 and 2025, it is expected that transportation demands in the vicinity of the Project Area will increase due to long-term background growth as well as development that could occur pursuant to existing zoning. It is anticipated that in the No Action condition the Joint Long-Term Care and Hospital Facility uses on the Project Area (a total of 609 beds) would be replaced by 428 DUs, 70,655 sf of medical center uses, and 20,788 sf of local retail uses.

In order to forecast future No Action traffic conditions, the development that would occur under the No Action condition was considered along with three anticipated development projects located in the vicinity of the Project Area as well as projected development expected to occur by 2025 under the East Harlem Rezoning. The No Action traffic volumes also reflect annual background growth rates of 0.25 percent per year for the 2018 through 2023 period and 0.125 percent for the 2023 through 2025 period. These background growth rates, recommended in the *CEQR Technical Manual* for projects in Manhattan, are applied to account for smaller projects and general increases in travel demand not attributable to specific development projects. **Figure H-6** shows the total No Action traffic volumes during the weekday AM and PM peak hours.

INTERSECTION CAPACITY ANALYSIS

The lane group v/c ratios, delays, and LOS at the four analyzed intersections under No Action conditions are shown in **Table H-12**. As shown in **Table H-12**, the eastbound East 106th Street approach at Madison Avenue would remain congested in the AM peak hour, operating over capacity at LOS F with a v/c ratio of 1.12 in the No Action condition versus LOS D and a v/c ratio of 0.91 under existing conditions. In addition, the southbound Fifth Avenue approach at East 106th Street would become newly congested in the AM peak hour with a No Action v/c ratio of 0.91 (LOS C) versus a v/c ratio of 0.87 (LOS C) under existing conditions. All other lane groups at the four analyzed intersections would continue to operate at LOS D or better with v/c ratios of less than 0.90 in both the AM and PM peak hours in the No Action condition.



Legend:

= Analyzed Intersection

= Project Area

724/980 = Weekday AM/ Weekday PM

Source: PHA

No Action Peak Hour Traffic Volumes

Figure H-6

Table H-12
No Action Peak Hour Traffic Conditions

Intersection	Lane Group	Weekday AM Peak Hour						Weekday PM Peak Hour					
		2018 Existing			2025 No Action			2018 Existing			2025 No Action		
		v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS
Madison Avenue (N) at East 106th Street (E-W)	EB-LT	0.91	55.0	D	1.12	112.9	F	0.61	31.2	C	0.64	32.6	C
	WB-TR	0.64	33.0	C	0.75	39.2	D	0.75	37.9	D	0.83	44.9	D
	NB-LT	0.39	12.4	B	0.42	12.8	B	0.47	13.2	B	0.49	13.6	B
	NB-R	0.15	10.9	B	0.16	11.0	B	0.14	10.7	B	0.16	10.8	B
Madison Avenue (N) at East 107th Street (W)	NB-LT	0.44	13.0	B	0.48	13.5	B	0.53	14.0	B	0.56	14.4	B
Fifth Avenue (S) at East 106th Street (E-W)	WB-L	0.39	30.7	C	0.46	32.4	C	0.49	32.8	C	0.51	33.6	C
	SB-LT	0.87	25.2	C	0.91	28.7	C	0.74	19.2	B	0.75	19.7	B
Fifth Avenue (S) at East 107th Street (E-W)	WB-L	0.12	20.7	C	0.10	20.5	C	0.09	20.3	C	0.05	19.9	B
	SB-T	0.76	19.8	B	0.80	21.2	C	0.66	17.1	B	0.69	17.8	B

Notes:
EB = eastbound, WB = westbound, NB = northbound, SB = southbound
L = left, T = through, R = right, DfL = analysis considers a defacto left-turn lane on this approach
* denotes a congested lane group (LOS E or F, or v/c ratio greater than or equal to 0.9)
Analysis is based on the HCM methodology (HCS+ version 5.5)

FUTURE WITH THE PROPOSED ACTIONS

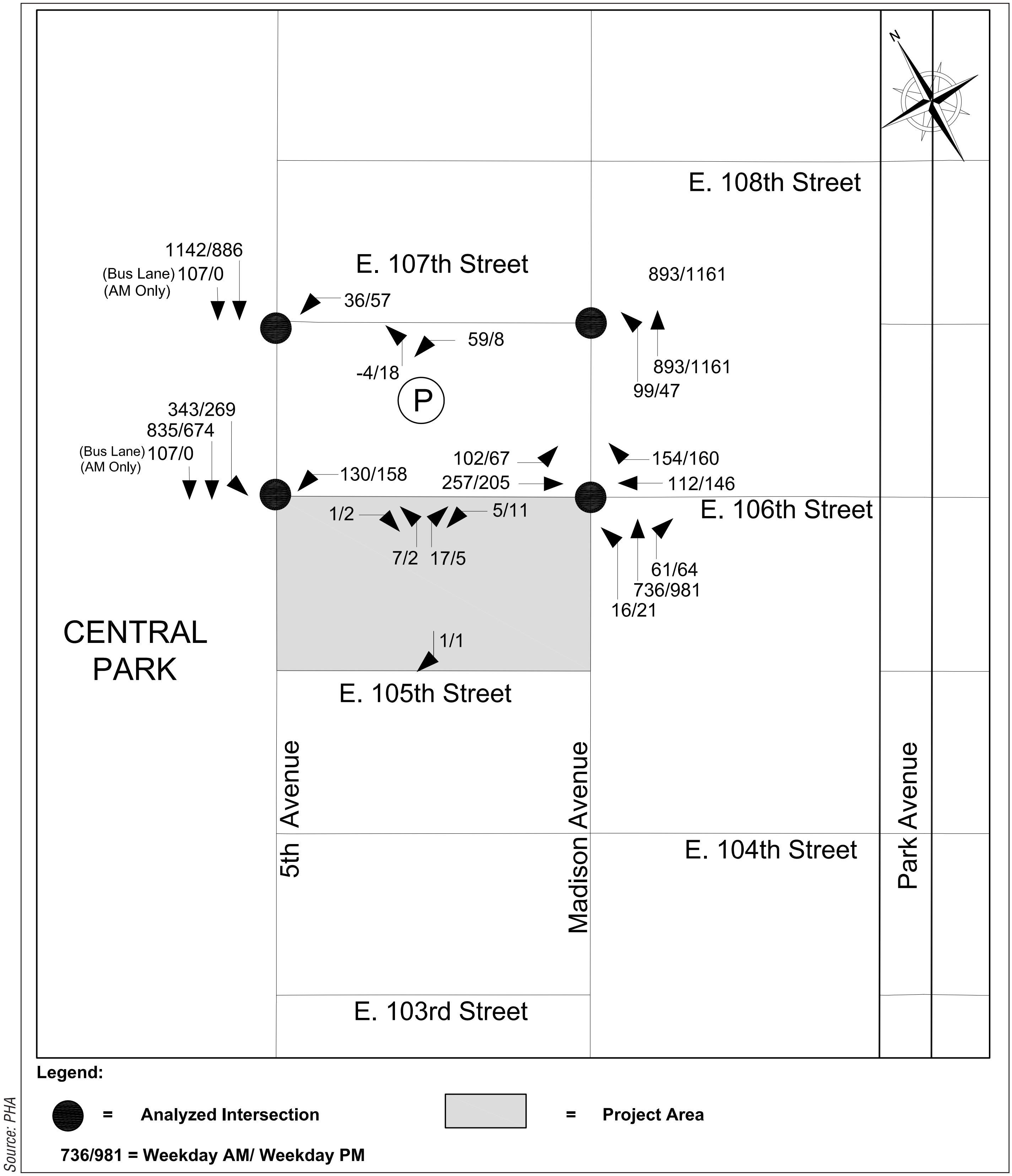
WITH ACTION TRAFFIC GROWTH

As shown in **Table H-7**, under With Action Scenario 2, there would be a total of approximately 97 and 92 additional vehicle trips (auto, taxi, and truck) during the weekday AM and PM peak hours, respectively. The assignments of auto and taxi trips to the street network in proximity to the Project Area were based on the anticipated O–D of vehicle trips associated with the different land uses under With Action Scenario 2 (i.e., residential and medical office) as well as the network's street directions. The O–D of residential trips used for the assignments were based upon 2006–2010 ACS JTW data, while the O–D of medical center staff trips were based on 2006–2010 ACS reverse JTW data. O–D for medical center visitors are based on population density in proximity to the Project Area and surrounding neighborhoods within a 1-mile radius. (Additional auto and taxi trip distribution data are provided in the *Transportation Planning Factors and Travel Demand Forecast Technical Memorandum*.)

Using the distribution data, auto and taxi trips were first assigned to various portals on the periphery of the Project Area, and from there via the most direct route to the vicinity of the Project Area. Auto trips generated by residential uses were assumed to utilize the proposed 106 spaces of on-site accessory parking provided under With Action Scenario 2, while other project-generated auto demand was assigned to the nearest off-street public parking facility with available capacity. Taxis were assumed to pick-up/drop-off at Project Area frontages. Truck trips were assigned to the designated local truck routes along Lexington and Third Avenues and then to the most direct paths to and from the Project Area's service entrance on East 106th Street and exit on East 105th Street.

The assignment of incremental vehicle trips (auto, taxi, and truck) generated during the analyzed weekday AM and PM peak hours under the Proposed Actions is shown in **Figure H-2**. **Figure H-7** shows the total weekday AM and PM peak hour traffic volumes in the 2025 With Action condition. The volumes shown are the combination of the No Action condition volumes and the net incremental traffic volumes generated by the RWCDS.

To accommodate the additional project demand, the Proposed Actions would include implementation of a minor signal timing change at the intersection of Madison Avenue and East



With Action Peak Hour Traffic Volumes

106th Street. The Applicant will notify DOT upon completion of the project to request the signal timing change. **Table H-13** shows this proposed signal timing change.

Table H-13
Proposed Signal Timing Change

Intersection	Approach	No Action Signal Timing (seconds) [1]		With Action Signal Timing (seconds) [1]		Proposed Improvement
		AM	PM	AM	PM	
Madison Ave (N) at East 106th Street (EB/WB)	EB/WB	36	36	39	37	Transfer 3s of green time from NB to EB/WB in the AM and 1s in the PM.
	NB	54	54	51	53	

Note: [1] Signal timings shown reflect green time plus yellow and all red times for each phase.

INTERSECTION CAPACITY ANALYSIS

The lane group v/c ratios, delays, and LOS at the four analyzed intersections under With Action Scenario 2 are shown in **Table H-14**. The analysis shown in **Table H-14** reflects conditions with the proposed signal timing change.

Table H-14
With Action Scenario 2 Peak Hour Traffic Conditions

Intersection	Lane Group	Weekday AM Peak Hour 2025 No Action v/c ratio	Delay (sec/veh)	LOS	2025 With Action v/c ratio	Delay (sec/veh)	LOS	Weekday PM Peak Hour 2025 No Action v/c ratio	Delay (sec/veh)	LOS	2025 With Action v/c ratio	Delay (sec/veh)	LOS
Madison Avenue (N) at East 106th Street (E-W)	EB-LT	1.12	112.9	F	1.13	113.2	F	0.64	32.6	C	0.79	40.9	D
	WB-TR	0.75	39.2	D	0.75	36.7	D	0.83	44.9	D	0.82	43.0	D
	NB-LT	0.42	12.8	B	0.46	14.8	B	0.49	13.6	B	0.51	14.3	B
	NB-R	0.16	11.0	B	0.18	12.7	B	0.16	10.8	B	0.16	11.4	B
Madison Avenue (N) at East 107th Street (W)	NB-LT	0.48	13.5	B	0.51	13.8	B	0.56	14.4	B	0.56	14.5	B
Fifth Avenue (S) at East 106th Street (E-W)	WB-L	0.46	32.4	C	0.48	33.0	C	0.51	33.6	C	0.53	34.2	C
	SB-LT	0.91	28.7	C	0.93	30.8	C	0.75	19.7	B	0.79	21.2	C
Fifth Avenue (S) at East 107th Street (E-W)	WB-L	0.10	20.5	C	0.11	20.6	C	0.05	19.9	B	0.13	20.8	C
	SB-T	0.80	21.2	C	0.82	21.8	C	0.69	17.8	B	0.70	18.1	B

Notes:
EB = eastbound, WB = westbound, NB = northbound, SB = southbound
L = left, T = through, R = right, DfL = analysis considers a defacto left-turn lane on this approach
* denotes a congested lane group (LOS E or F, or v/c ratio greater than or equal to 0.9)
Analysis is based on the HCM methodology (HCS+ version 5.5)

As shown in **Table H-14**, in With Action Scenario 2 the eastbound East 106th Street approach to Madison Avenue would continue to operate over capacity in the AM peak hour at LOS F with a v/c ratio of 1.13 compared to LOS F and a v/c ratio of 1.12 in the No Action condition. However, this lane group would not experience an increase in delay of 3 or more seconds and therefore would not be considered significantly adversely impacted based on the *CEQR Technical Manual* impact criteria discussed previously in Section E. The southbound Fifth Avenue approach would also remain congested in the AM peak hour with a v/c ratio of 0.93 (LOS C) versus a v/c ratio of 0.91 (LOS C) in the No Action condition. This lane group would also not be considered significantly adversely impacted based on *CEQR Technical Manual* criteria. All other lane groups at the four analyzed intersections would continue to operate at mid-LOS D (i.e., less than 45 seconds of delay) or better and with v/c ratios below 0.90 in both the AM and PM peak hours in With Action Scenario 2. Therefore, no significant adverse traffic impacts are anticipated under the Proposed Actions.

G. PEDESTRIANS

EXISTING CONDITIONS

Pedestrian elements (sidewalks, corners, and crosswalks) in the vicinity of the Project Area are characterized by relatively light to moderate pedestrian flows during peak periods. Demand increases at the start and end of the school day as students arrive and depart the nearby Jackie Robinson Educational Complex at the northeast corner of Madison Avenue and East 106th Street.

As discussed in "Level 2 Screening Assessment," and shown in **Figure H-3**, the analysis of pedestrian conditions focuses on the northwest corner at Madison Avenue and East 105th Street (the southeast corner of the Project Area) and the southwest corner at Madison Avenue and East 106th Street (the northeast corner of the Project Area) where it is anticipated that project pedestrian demand would be most concentrated and most likely to meet the *CEQR Technical Manual* 200-trip analysis threshold. The sidewalk adjacent to the Project Area along Madison Avenue is approximately 13 feet wide, as is the adjacent sidewalk along East 105th Street. An approximately 20-foot-wide sidewalk borders the Project Area along East 106th Street. The connecting crosswalks at the northwest corner at Madison Avenue/East 105th Street are approximately 12 feet in width. At the southwest corner of Madison Avenue and East 106th Street, an approximately 15-foot-wide crosswalk spans East 106th Street while the Madison Avenue crosswalk increases in width from approximately 15 feet at its eastern end to approximately 30 feet at its western end. An approximately 18-foot-wide painted sidewalk extension (bulb out) protected by delineator posts extends the corner area into the East 106th Street parking lane.

Table H-15 shows the peak hour volumes, average pedestrian space in SFP and LOS at the two analyzed corner areas in the analyzed weekday AM and PM peak hours. As shown in **Table H-15**, both analyzed corner areas currently operate at an uncongested LOS A in each peak hour.

Table H-15
Existing Corner Conditions

Location	Corner	Pedestrian Space (SFP)		LOS	
		AM	PM	AM	PM
Madison Avenue and East 106th Street	SW	785.1	1116.6	A	A
Madison Avenue and East 105th Street	NW	347.4	882.0	A	A

FUTURE WITHOUT THE PROPOSED ACTIONS

Between 2018 and 2025, it is expected that transportation demands in the vicinity of the Project Area will increase due to long-term background growth as well as development that could occur pursuant to existing zoning. As discussed previously, it is anticipated that in the No Action condition the existing skilled nursing facility and specialty hospital uses on the Project Area (a total of 609 beds) would be replaced by 428 DUs, 70,655 sf of medical center uses, and 20,788 sf of retail uses.

In order to forecast future No Action pedestrian conditions, the development that would occur under the No Action condition was considered along with other anticipated developments located in the vicinity of the Project Area. These include projected development sites associated with the 2017 East Harlem Rezoning that are expected to be completed by 2025. The Future No Action pedestrian volumes also reflect annual background growth rates of 0.25 percent per year for the 2018 through 2023 period and 0.125 percent for the 2023 through 2025 period. These background growth rates, recommended in the *CEQR Technical Manual* for projects in Manhattan, are applied to account for smaller projects and general increases in travel demand not attributable to specific development projects. Traffic and pedestrian mitigation measures associated with these development projects were also considered.

Table H-16 shows the peak hour volumes, average pedestrian space, and levels of service at the two analyzed corner areas in the No Action condition. As shown in **Table H-16**, both analyzed corner areas are expected to continue to operate at an uncongested LOS A in the analyzed AM and PM peak hours.

Table H-16
No Action Corner Conditions

Location	Corner	Pedestrian Space (SFP)		LOS	
		AM	PM	AM	PM
Madison Avenue and East 106th Street	SW	545.8	471.5	A	A
Madison Avenue and East 105th Street	NW	124.8	90.4	A	A

FUTURE WITH THE PROPOSED ACTIONS

The Proposed Actions would generate new pedestrian demand at the two analyzed corner areas by 2025. This new demand would include trips made solely by walking, as well as pedestrian trips en route to and from subway station entrances, bus stops and off-site public parking. Pedestrian trips generated by the Proposed Actions are expected to be most concentrated in proximity to the Project Area and along corridors connecting the site to area transit services and nearby off-street public parking facilities.

As shown in **Table H-6**, With Action Scenario 2 is expected to generate a net total of approximately 267 and 268 walk-only trips and pedestrians en route to and from area subway stations and bus stops in the weekday AM and PM peak hours, respectively. As not all project-generated parking demand would be accommodated on-site, it is estimated that there would also be an additional 55 and 51 pedestrian trips en route to and from nearby off-site public parking in each of these periods, respectively. These pedestrian volumes were added to the projected No Action volumes to generate the With Action pedestrian volumes for analysis.

Under the illustrative site plan for Proposed Actions, the proposed buildings would be set back from the lot line by 10 feet along both Madison Avenue and East 106 Street, and by 15 feet along East 105th Street. Although this would provide additional pedestrian space at the two analyzed corner areas, to be conservative, the analysis of With Action scenarios does not reflect the proposed setbacks.

Table H-17 shows the total With Action Scenario 2 pedestrian volumes, average pedestrian space, and levels of service at the two analyzed corner areas. As shown in **Table H-17**, both would continue to operate at an uncongested LOS A or B in the analyzed AM and PM peak hours and the average pedestrian space would remain well above levels at which pedestrian significant adverse impacts may occur. Therefore, based on the *CEQR Technical Manual* criteria shown in **Table H-10** in Section E, there would be no significant adverse impacts to either analyzed corner area in either the AM or PM peak hour as a result of the Proposed Actions.

Table H-17
With Action Scenario 2 Corner Conditions

Location	Corner	Pedestrian Space (SFP)		LOS	
		AM	PM	AM	PM
Madison Avenue and East 106th Street	SW	434.5	363.2	A	A
Madison Avenue and East 105th Street	NW	88.1	58.9	A	B

H. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

RECENT DOT INITIATIVES

VISION ZERO MANHATTAN PEDESTRIAN SAFETY ACTION PLAN

New York City's Vision Zero initiative seeks to eliminate all deaths from traffic crashes regardless of whether on foot, bicycle, or inside a motor vehicle. In an effort to drive these fatalities down, DOT and the New York City Police Department (NYPD) developed a set of five plans, each of which analyzes the unique conditions of one New York City borough and recommends actions to address the borough's specific challenges to pedestrian safety. These plans pinpoint the conditions and characteristics of pedestrian fatalities and severe injuries; they also identify priority corridors, intersections, and areas that disproportionately account for pedestrian fatalities and severe injuries, prioritizing them for safety interventions. The plans outline a series of recommended actions comprised of engineering, enforcement, and education measures that intend to alter the physical and behavioral conditions on City streets that lead to pedestrian fatality and injury.

The *Vision Zero Manhattan Pedestrian Safety Action Plan* was released on February 18, 2015. Based on a review of the plan's findings, there are no Priority Corridors, Intersections, or Areas located in proximity to the Project Area.

SAFE STREETS FOR SENIORS

Safe Streets for Seniors is a pedestrian safety initiative for older New Yorkers. The Safe Streets for Seniors program studies crash data, and then develops and implements mitigation measures to improve the safety of seniors and other pedestrians, as well as all road users in New York City. Under this program, DOT has identified Senior Pedestrian Focus Areas (SPFAs) throughout the city based on the density of senior pedestrian (age 65+) crashes resulting in fatalities or severe injuries in a 5-year period, as well as variables such as senior trip generators, concentrations of senior centers, and senior housing locations. In 2012, DOT designated an SPFA in East Harlem extending from East 91st Street to East 110th Street between First and Fifth Avenues. Subsequent improvements implemented to address senior concerns have included:

- Modification of 129 traffic signals to accommodate slower walking speeds;
- Installation of countdown signals at 95 intersections along First, Second, Third, Lexington, Park, Madison, and Fifth Avenues;
- Installation of 33 pedestrian islands on First Avenue and 26 pedestrian islands on Second Avenue;
- Removal of one travel lane in each direction and installation of flush center medians with left-turn bays along East 106th Street, along with the installation of pedestrian safety islands at key intersections; and
- Installation of new benches under the CityBench program.

STUDY AREA HIGH CRASH LOCATIONS

Crash data for intersections in the vicinity of the Project Area were obtained from DOT for the 3-year period between January 1, 2014, and December 31, 2016 (the most recent 3-year period for which data are available). The data quantify the total number of reportable (involving a fatality, injury, or more than $1,000 in property damage) and non-reportable crashes as well as the total number of crashes involving injuries to pedestrians or bicyclists. During the 3-year reporting period, a total of 97 reportable and non-reportable crashes and 34 pedestrian/bicyclist-related injury crashes (including two fatalities—a bicyclist at Park Avenue at East 108th Street in 2014 and a pedestrian at Fifth Avenue and East 108th Street in 2016) occurred in the vicinity of the Project Area. **Table H-18** provides a summary of these crashes by year and location, including a breakdown of pedestrian and bicycle crashes.

Table H-18
Summary of Motor Vehicle Crash Data 2014–2016

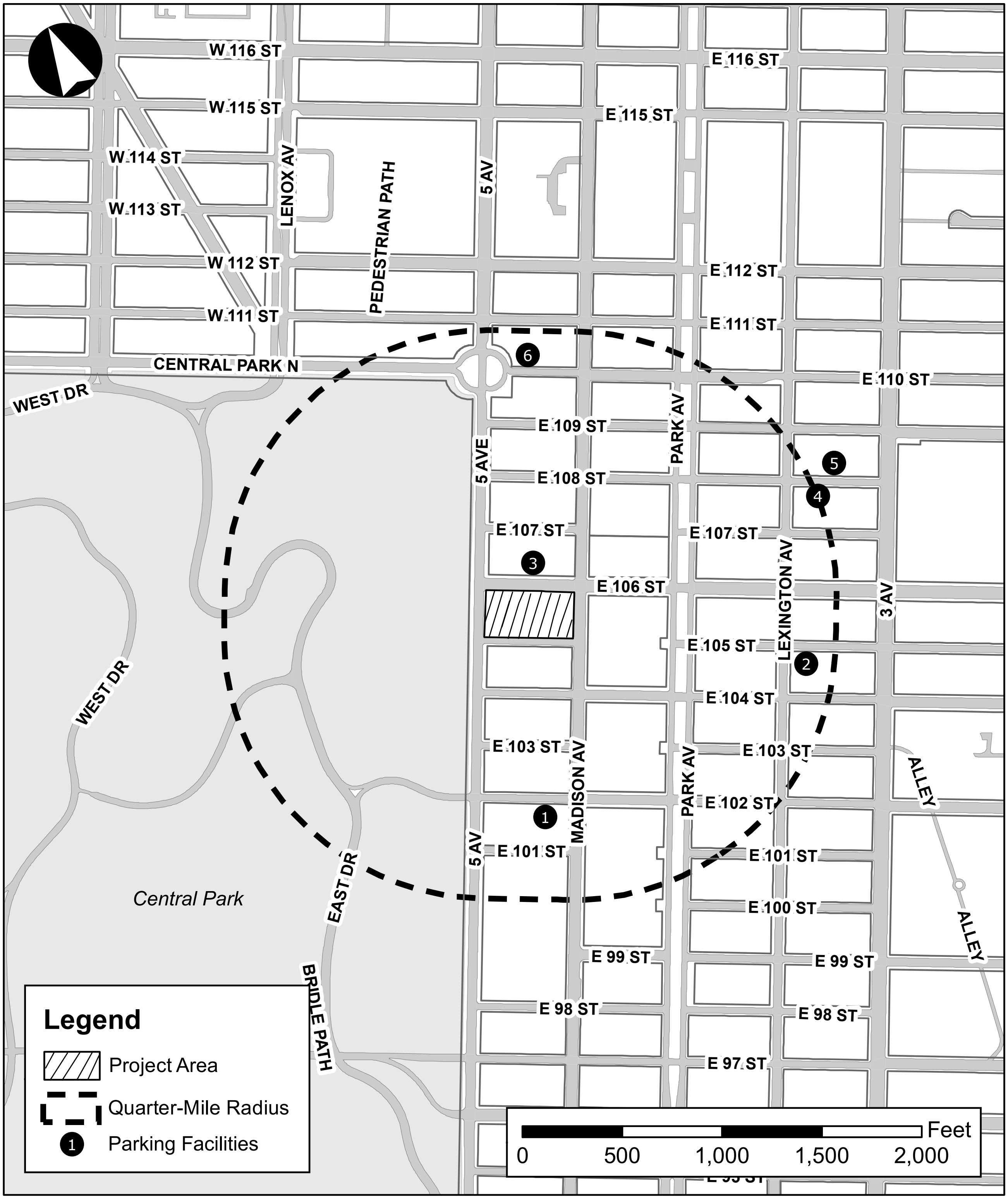
Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicycle Injury Crashes			Total Crashes (Reportable & Non-Reportable)		
		2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Fifth Avenue	East 104th Street	0	1	1	0	1	0	0	2	1	2	2	2
	East 105th Street	0	0	0	0	0	0	0	0	0	1	0	0
	East 106th Street	2	3	2	0	1	0	2	4	2	3	5	4
	East 107th Street	0	0	0	0	1	0	0	1	0	1	1	1
	East 108th Street	0	0	1	0	0	0	0	0	1	4	2	2
Madison Avenue	East 104th Street	1	1	1	1	0	0	2	1	1	3	1	1
	East 105th Street	0	0	0	1	0	0	1	0	0	1	1	1
	East 106th Street	0	2	0	0	1	0	0	3	0	0	6	1
	East 107th Street	1	0	0	1	0	0	2	0	0	5	1	1
	East 108th Street	1	0	1	0	0	0	1	0	1	1	2	3
Park Avenue	East 104th Street	0	0	0	0	0	0	0	0	0	1	3	2
	East 105th Street	0	2	0	0	0	0	0	2	0	1	3	2
	East 106th Street	2	0	0	1	1	0	3	1	0	6	4	6
	East 107th Street	0	0	0	0	0	0	0	0	0	0	1	0
	East 108th Street	1	0	0	1	1	0	2	1	0	4	5	1

According to the *CEQR Technical Manual*, a high crash location is one where there were 48 or more reportable and non-reportable crashes or 5 or more pedestrian/bicyclist-related crashes in any consecutive 12 months within the most recent 3-year period for which data are available. As shown in **Table H-18**, no intersections experienced 48 or more reportable and non-reportable crashes within a consecutive 12-month period during the 2014 to 2016 period, and none experienced 5 or more pedestrian/bicyclist-related crashes within a consecutive 12-month period. Therefore, no intersection in proximity to the Project Area is considered a high accident location based on *CEQR Technical Manual* guidance.

I. PARKING

EXISTING CONDITIONS

There are currently six off-street public parking facilities located within approximately ¼-mile of the Project Area. **Figure H-8** shows the locations of these parking facilities and **Table H-19** provides a summary of their names, addresses, license numbers, capacities, and estimated weekday midday and overnight utilization. Based on data cited in the *East Harlem Rezoning FEIS* and field observations and interviews with parking attendants conducted in May 2018, the six parking facilities have a combined licensed capacity of 1,526 spaces during the midday. This falls to 1,302 spaces during the overnight period when two facilities (Nos. 4 and 6 in **Table H-19**) are closed. During the midday period, approximately 74 percent of spaces within the parking study area are utilized, leaving a residual supply of approximately 393 available parking spaces. During the overnight period, approximately 29 percent of spaces are utilized, leaving a residual supply of approximately 928 available parking spaces.



Source: PHA

Existing Off-Street Public Parking Facilities

Table H-19
Existing Off-Street Public Parking Facilities

Map No.	Name	Address	License No.	Hours of Operation	Licensed Capacity	Weekday Midday Estimated Utilization (%)	Weekday Midday Available Capacity	Weekday Overnight Estimated Utilization (%)	Weekday Overnight Available Capacity
1[(a)]	MP 102 LLC	10 E. 102nd St	1439520	24 Hrs Daily	188	70%	56	5%	178
2	East 105th Street Parking LLC	156 E. 105th St	1109621	24 Hrs Daily	89	75%	22	33%	60
3	Merit Parking LLC	12 E. 107th St	760802	24 Hrs Daily	1,000	75%	250	33%	670
4	Lease Parking Lot, Inc.	158 E. 108th St	1249153	M-F 7 AM–7 PM Sa 8 AM–6 PM	44	50%	22	CLOSED	CLOSED
5	Park and Go LLC	179 E. 108th St	1227293	24 Hrs Daily	25	72%	7	20%	20
6	MP Uptown LLC	1295 5th Ave	1306114	M-F 6 AM–10 PM Sa 8 AM–6 PM	180	80%	36	CLOSED	CLOSED
	Total				**1,526**	**74%**	**393**	**29%**	**928**

Notes:
(a) Source is May 2018 PHA field surveys and interview with parking facility operator
Source:
East Harlem Rezoning FEIS

FUTURE WITHOUT THE PROPOSED ACTIONS

Between 2018 and 2025, it is expected that parking demand in the vicinity of the Project Area will increase due to long-term background growth as well as development that could occur on the Project Area and in the surrounding area pursuant to existing zoning. The forecast of parking demand generated by residential development in the No Action condition was based on 2012–2016 ACS 5-year auto ownership data. Parking demands from other uses (i.e., local retail and community facility) were derived from the forecasts of daily auto trips from these uses.

It is anticipated that approximately 75 accessory parking spaces would be provided on-site in the No Action condition. As these new accessory spaces would not be sufficient to accommodate all of the weekday midday and overnight parking demand generated by the new No Action uses, some of the demand is expected to utilize off-street public parking facilities or park on-street.

The forecast of future No Action parking conditions also considers the potential for new demand from developments located in the vicinity of the Project Area. ACS auto ownership data and auto trip forecasts were used to forecast the parking demands from these developments except where site-specific data were available from secondary sources such as previous environmental studies. Data cited in the *East Harlem Rezoning FEIS* were used for development sites associated with that project. In addition, the forecast of future No Action parking conditions incorporates annual background growth rates of 0.25 percent per year for the 2018 through 2023 period and 0.125 percent per year for the 2023 through 2025 period. These background growth rates, recommended in the *CEQR Technical Manual* for projects in Manhattan, are applied to account for smaller projects and general increases in parking demand not attributable to specific development projects.

As shown in **Table H-20**, based on the increased demand under the No Action condition, midday off-street public parking demand within ¼-mile of the Project Area is expected to total 102 percent of capacity, with a deficit of 32 spaces during this period. Overnight utilization is expected to increase to 48 percent of capacity with a total of 666 parking spaces available at the four 24-hour public parking facilities.

Table H-20
No Action Off-Street Public Parking Capacity, Demand and Utilization

	Midday	Overnight[6]
Capacity		
Existing Capacity[1]	1,495	1,276
Capacity Displaced by No Action Developments[2]	0	0
Total No Action Capacity	1,495	1,276
Demand		
Existing Demand	1,133	374
Demand From Background Growth[3]	17	6
Incremental Demand from No Action Condition[4]	107	19
Incremental Demand from Off-Site No Action Development[5]	270	211
Total No Action Demand	1,527	610
Utilization		
No Action Utilization	102%	48%
No Action Off-Street Parking Surplus/(Deficit)	(32)	666

Notes:
[1] Analysis conservatively assumes that facilities are fully utilized at 98 percent of licensed capacity.
[2] No existing public parking facilities would be displaced in the No Action condition.
[3] Reflects annual background growth rates of 0.25 percent per year for the 2018 through 2023 period and 0.125 percent for the 2023 through 2025 period.
[4] Demand from No Action condition not accommodated by accessory parking.
[5] Demand from developments in proximity to the Project Area not accommodated by accessory parking.
[6] Existing public parking facilities Nos. 4 and 6 are closed during the overnight period.

FUTURE WITH THE PROPOSED ACTIONS

Under With Action Scenario 2 a total of 106 accessory parking spaces would be provided on the Project Area, and no existing off-street public parking spaces would be displaced. **Table H-21** shows the hourly net incremental change in parking demand for each land use under the With Action Scenario 2 compared to the No Action condition. The forecast of parking demand generated by the residential component of the RWCDS was based on 2012–2016 ACS 5-year data on average vehicles per household for Manhattan Census Tracts 166, 168, 172, and 174.01 which encompass the area around the Project Area. Parking demands from the retail and medical center uses were derived from the forecasts of daily auto trips for these uses.

As shown in **Table H-21**, parking demand generated by the medical center use that would be developed under With Action Scenario 2 would typically peak during the midday hour, whereas residential parking demand would typically peak during the overnight period. There would be no net increase in parking demand from retail uses under With Action Scenario 2 as the amount of retail space would remain unchanged from the No Action condition. Overall, development associated with Scenario 2 would generate a peak net parking demand of approximately 106 spaces in the weekday midday (12 PM–1 PM) period and 37 spaces in the overnight period.[2]

[2] By comparison, development associated with Scenario 1 would generate a peak net parking demand of approximately 50 spaces in the weekday midday (1 PM–2 PM) period, and would result in a net decrease of 11 spaces during the overnight period versus the No Action condition.

Table H-21
With Action Scenario 2 Net Incremental
Weekday Hourly Parking Demand by Land Use

	Local Retail	Residential	Medical Center Visitors	Medical Center Staff	Total Demand
12 AM–1 AM	0	37	0	0	37
1 AM–2 AM	0	37	0	0	37
2 AM–3 AM	0	37	0	0	37
3 AM–4 AM	0	37	0	0	37
4 AM–5 AM	0	37	0	1	38
5 AM–6 AM	0	36	0	2	38
6 AM–7 AM	0	34	0	4	38
7 AM–8 AM	0	32	6	4	42
8 AM–9 AM	0	27	18	30	75
9 AM–10 AM	0	26	34	29	89
10 AM–11 AM	0	26	48	29	103
11 AM–12 PM	0	25	51	30	106
12 PM–1 PM	0	25	51	30	106
1 PM–2 PM	0	25	45	30	100
2 PM–3 PM	0	25	42	30	97
3 PM–4 PM	0	26	43	30	99
4 PM–5 PM	0	28	33	31	92
5 PM-6 PM	0	31	28	5	64
6 PM–7PM	0	34	18	0	52
7 PM–8 PM	0	36	6	0	42
8 PM–9 PM	0	36	2	0	38
9 PM–10 PM	0	35	0	0	35
10 PM–11 PM	0	37	0	0	37
11 PM–12 AM	0	37	0	0	37

Notes:
Parking accumulation patterns based on data from the *East Harlem Rezoning FEIS.*
Residential parking demand assumes 0.22 spaces/DU based on 2012–2016 5-year ACS data on average vehicles/household for Manhattan Census Tracts 166, 168, 172, and 174.01.

Under With Action Scenario 2, it is anticipated that up to 106 accessory parking spaces would be provided on the Project Area compared to 75 accessory spaces in the No Action condition. No existing public parking facilities would be displaced, and no new public parking capacity would be developed. After accounting for new parking demand and the number of accessory spaces provided on-site, it is estimated that compared to the No Action condition, incremental parking demand from With Action Scenario 2 would total approximately 75 spaces at off-street public parking facilities and on-street in the weekday midday period, and six spaces during the overnight period.

As shown in **Table H-22**, in With Action Scenario 2, demand for off-street public parking in the study area would total approximately 1,602 spaces in the weekday midday, and 616 spaces during the overnight period. Off-street public parking facilities within approximately ¼-mile of the Project Area would be operating at an estimated 107 percent of capacity with a deficit of 107 spaces in the weekday midday, and at 48 percent of capacity with a surplus of 660 spaces during the overnight period.[3] While some drivers traveling to the Project Area in the midday would

[3] By comparison, there would be a lower midday deficit under Scenario 1, with off-street public parking operating at an estimated 103 percent of capacity with a 51-space shortfall in the weekday midday, and at 46 percent of capacity with a surplus of 685 spaces during the overnight period.

potentially have to find on-street parking or travel a greater distance (e.g., between ¼- and ½-mile) to find available off-street public parking, the shortfall in this period would not be considered a significant adverse impact based on *CEQR Technical Manual* criteria due to the magnitude of available alternative modes of transportation. Therefore, the Proposed Actions are not expected to result in significant adverse parking impacts.

Table H-22
With Action Scenario 2 Off-Street Public Parking Capacity, Demand and Utilization

	Midday	Overnight[3]
Capacity		
No Action Capacity	1,495	1,276
Capacity Displaced by With Action Development[1]	0	0
Total With Action Capacity	1,495	1,276
Demand		
No Action Demand	1,527	610
Incremental Demand from With Action Development[2]	75	6
Total With Action Demand	1,602	616
Utilization		
With Action Utilization	107%	48%
With Action Off-Street Parking Surplus/(Deficit)	(107)	660

Notes:
[1] Proposed Actions would not displace any existing public parking capacity.
[2] Includes demand not otherwise accommodated in on-site accessory parking. The numbers reflect the net incremental change compared to the No Action condition.
[3] Existing public parking facilities Nos. 4 and 6 are closed during the overnight period.

J. CONCLUSION

Overall, the Proposed Actions would not result in significant adverse impacts on transportation within the study area. ✷

A. INTRODUCTION

This attachment assesses the potential for air quality impacts associated with the Proposed Actions. As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

In order to assess the potential effects of the Proposed Actions, a reasonable worst-case development scenario (RWCDS) was analyzed for the 2025 analysis year. As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the Environmental Assessment Statement (EAS) considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

As described in Attachment H, "Transportation," the maximum hourly increase in traffic volume due to the Proposed Actions would not exceed the 2014 *City Environmental Quality Review (CEQR) Technical Manual* carbon monoxide (CO) screening threshold of 170 auto trips for peak hour trips at nearby intersections in the study area, nor would it exceed the particulate matter (PM) emission screening threshold discussed in Chapter 17, Sections 210 and 311 of the CEQR Technical Manual. Therefore, no mobile source analysis is required.

New buildings constructed as a result of the Proposed Actions would include fossil fuel-fired heat and hot water systems; therefore, a stationary source analysis was conducted to evaluate the potential impact from these new sources on air quality. In addition, the potential effects of emissions from the future FHH Building's heating and hot water systems on the Proposed Project were assessed. As discussed in detail below, the Proposed Actions would not result in any significant adverse impacts on air quality.

B. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

WITH ACTION SCENARIO 1

Under With Action Scenario 1, the Applicant would redevelop the Project Area with new medical facilities, a nonprofit senior supportive housing development (the "Senior Building"), and residential tower and modernize and consolidate TCC's functions within the existing FHH Building. An initial analysis was performed to evaluate heat and hot water systems for With Action Scenario 1 using the screening procedures outlined in the *CEQR Technical Manual*. Based on the results of the screening analysis, a refined analysis was required using the U.S. Environmental Protection Agency (EPA)-approved AERMOD model to evaluate potential air quality impacts.

The 1-hour average nitrogen dioxide (NO_2) and PM smaller than 2.5 micrometers in diameter ($PM_{2.5}$) 24-hour and annual average impacts were modeled. Potential 1-hour average NO_2 concentrations, added to representative background concentrations in the area, were compared with the National Ambient Air Quality Standards (NAAQS). Potential increases in 24-hour and annual average concentrations of $PM_{2.5}$ were compared with the $PM_{2.5}$ guidance thresholds defined in the *CEQR Technical Manual:*

- Predicted increase of more than half the difference between the background concentration and the 24-hour standard;
- Annual average $PM_{2.5}$ concentration increments which are predicted to be greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources); or
- Annual average $PM_{2.5}$ concentration increments which are predicted to be greater than 0.3 $\mu g/m^3$ at a discrete location (elevated or ground level).

DISPERSION MODEL

Potential impacts on air quality from With Action Scenario 1's heat and hot water systems' emissions were evaluated using the EPA/ American meteorological Society (AMS) AERMOD refined 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 interactions between the plume and terrain.

The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data, and is capable of calculating pollutant concentrations at locations where the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. The analyses of potential impacts from exhaust stacks was performed assuming stack tip downwash, urban dispersion and surface roughness length (with and without building downwash), and elimination of calms.

The AERMOD Model also incorporates the algorithms from the Plume Rise Model Enhancements (PRIME) downwash algorithm, which is designed to predict concentrations in the "cavity region" (i.e., the area around a structure which, under certain conditions, may affect an exhaust plume, causing a portion of the plume to become entrained in a recirculation region). The Building Profile Input Program (BPIP) for the PRIME module (BPIPPRM) was used to determine the projected building dimensions modeling with the building downwash algorithm enabled. The modeling of downwash from sources accounts for all obstructions within a radius equal to five obstruction heights of the stack.

The analysis was performed both with and without downwash in order to assess potential impacts at both ground level and elevated receptors.

METEOROLOGICAL DATA

The meteorological data set consists of 5 consecutive years of meteorological data: surface data collected at LaGuardia Airport (2012–2016), 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 elevations over the 5-year period. These data sets 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 surface meteorological station were classified using categories defined in digital United States Geological Survey (USGS) maps to determine surface parameters used by the AERMET program.

EMISSION RATES AND STACK PARAMETERS

Annual fuel usage rates for heating and hot water systems were calculated using an energy intensity factor from the *CEQR Technical Manual* Air Quality Appendix, based on the size (in gross square feet [gsf]) and type of development (residential), and applying NO_2 and $PM_{2.5}$ emissions factors for natural gas-fired low NO_x boilers,[1] including both the filterable and condensable fractions. The short-term emission rates were calculated by scaling the annual emissions to account for a 100-day heating season. The exhaust from the heating and hot water systems for the residential/medical office and senior housing buildings were each assumed to be vented through a single stack at a minimum height of 3 feet above the highest roof.

The exhaust velocity was calculated based on the exhaust flowrate for the specified boiler capacity, exhaust temperature, and EPA's fuel factors.[2] Assumptions for stack diameter and exhaust temperature for the proposed systems were obtained from a survey of boiler exhaust data prepared and provided by New York City Department of Environmental Protection (DEP), and were used to calculate the exhaust velocity. The emission rates and exhaust stack parameters used in the modeling analyses are presented in **Table I-1**.

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[1] EPA. *Compilations of Air Pollutant Emission Factors AP-42*. Fifth Edition, Volume I, Chapter 1, Section 3. September, 1998

[2] EPA. *Standards of Performance for New Stationary Sources.* 40 CFR Chapter I Subchapter C Part 60. Appendix A-7, Table 19-2. 2013.

Table I-1
Exhaust Stack Parameters and Emission Rates: With Action Scenario 1

Parameter	Residential Tower and Medical Office Space	Senior Housing
Floor Area (square feet)	395,536	87,653
Stack Height (feet)	359	88
Stack Diameter (feet)	3.2	2.0
Exhaust Velocity (meters/second)	1.55	0.88
Exhaust Temperature (degrees Fahrenheit) (1)	307.8	307.8
NO_2 (1-hour average)	0.123	0.010
NO_2 (Annual average)	0.034	0.003
$PM_{2.5}$ (24-hour average)	0.009	0.002
$PM_{2.5}$ (Annual average)	0.003	0.001

Note:
(1) Stack parameters are based on boiler specifications from example DEP Boiler Permits.
Source:
EPA. Compilations of Air Pollutant Emission Factors AP-42. Fifth Edition, Volume I, Chapter 1, Section 3. September, 1998.

NO_2 Concentrations

The 1-hour average NO_2 concentration increments from the boiler systems are estimated using the AERMOD model's Plume Volume Molar Ratio Method (PVMRM) module to analyze chemical transformation within the model. The PVMRM module incorporates hourly background ozone concentrations to estimate NO_x transformation within the source plume. Ozone concentrations were obtained from the New York State Department of Environmental Conservation (NYSDEC) Botanical Garden monitoring station that is the most representative ozone monitoring station that has complete 5 years of hourly data available. An initial NO_2 to NO_x ratio of 10 percent at the source exhaust stack was assumed.[3]

The potential NO_2 1-hour concentrations represent the 5-year average of the annual 98th percentile of the maximum daily 1-hour average, added to background concentrations (see "Background Concentrations" section below for a discussion of this analysis).

Background Concentrations

To estimate the maximum projected total 1-hour average NO_2 concentration at a given receptor, background concentrations were developed following EPA's "second tier" detailed approach. The methodology used to determine the total 1-hour NO_2 concentrations from the facility was based on adding the monitored background to modeled concentrations, as follows: hourly modeled concentrations from the boilers were first added to the seasonal hourly background monitored concentrations; then the highest combined daily 1-hour NO_2 concentration was determined at each location and the 98th percentile daily 1-hour maximum concentration for each modeled year was calculated within the AERMOD model; finally the 98th percentile concentrations were averaged over the latest 5 years.

[3] NO_2 boiler emissions generally range from 1 to 5 percent of total NO_x. EPA. *NO_2/NO_x In-Stack Ratio (ISR) Database*. http://www3.epa.gov/scram001/no2_isr_database.html

An annual NO_2 background concentration of 38.9 µg/m^3 from the I.S. 52, Bronx monitoring station was used to estimate the maximum total NO_2 annual concentration with Scenario 1 based on the 5-year maximum (2012–2016).

$PM_{2.5}$ impacts are assessed on an incremental basis and compared with the $PM_{2.5}$ *de minimis* criteria. The $PM_{2.5}$ 24-hour average background concentration of 19.4 µg/m^3 from the J.H.S. 45, ambient monitoring station in Manhattan (based on the 98th percentile concentration, averaged over the years 2015–2017) was used to establish the *de minimis* value of 7.8 µg/m^3.

RECEPTOR LOCATIONS

Receptors (locations within the model at which concentrations are projected) were placed in the model at elevated operable windows, balconies, air intakes, and publicly accessible ground-level locations. Rows of receptors at spaced intervals on the modeled buildings were analyzed at multiple elevations.

WITH ACTION SCENARIO 2

A screening-level analysis was performed following the *CEQR Technical Manual* procedures to evaluate potential impacts from heating and hot water systems under With Action Scenario 2.

INITIAL SCREENING ANALYSIS

Initial screening was undertaken using the methodology described in Chapter 17, Section 322.1 of the *CEQR Technical Manual* and explained above. This analysis determines the threshold of development size below which the action would not have a significant adverse impact relative to the 3-hour SO_2 and annual average NO_2 NAAQS, as well as CO, PM less than 10 micrometers in diameter (PM_{10}), standards(see "AERSCREEN Analysis" below for additional standards). The initial screening is based on the distance from the development to the nearest building of similar or greater height. The screening procedure uses information regarding the type of fuel to be burned, the development type and maximum size, and the exhaust stack height to evaluate whether or not a significant impact is possible. Based on the distance to the nearest building of similar or greater height, if the maximum development size is greater than the threshold size in the *CEQR Technical Manual*, then there is the potential for significant air quality impacts and a refined dispersion modeling analysis would be required. Otherwise, the source passes the screening analysis.

The initial screening was based on a 483,189-gsf building. The nearest receptor of similar or greater height was determined to be at a distance of over 400 feet; therefore this distance was used as recommended in the *CEQR Technical Manual*. The analysis was performed assuming either No. 2 fuel or natural gas as the fuel type. As per the *CEQR Technical Manual* screening procedure, the primary pollutant of concern is sulfur dioxide (SO_2) when burning fuel oil and NO_2 when burning natural gas.

AERSCREEN ANALYSIS

Potential 1-hour average NO_2 and 24-hour and annual average $PM_{2.5}$ impacts from the heat and hot water system's emissions were evaluated using the latest version of EPA's AERSCREEN model (version 16216). The AERSCREEN model projects worst-case 1-hour average concentrations downwind from a point, area, or volume source, and longer-period averages are estimated by multiplying the 1-hour results by persistence factors established by EPA or provided in the *CEQR Technical Manual*. AERSCREEN generates application-specific worst-case meteorology using representative minimum and maximum ambient air temperatures, and site-specific surface characteristics such as albedo, Bowen ratio, and surface roughness length.[4] The AERSCREEN model was used to calculate worst-case ambient concentrations of NO_2 and $PM_{2.5}$ from With Action Scenario 2 downwind of the stack.

The model incorporates the PRIME downwash algorithm, which is designed to predict concentrations in the "cavity region" (i.e., the area around a structure which under certain conditions may affect an exhaust plume, causing a portion of the plume to become entrained in a recirculation region). AERSCREEN uses BPIPPRM to provide a detailed analysis of downwash influences on a direction-specific basis. AERSCREEN also incorporates AERMOD's complex terrain algorithms and utilizes the AERMAP terrain processor to account for the actual terrain in the vicinity of the source on a direction-specific basis.

The AERSCREEN model was run both with and without the influence of building downwash, using urban diffusion coefficients that were based on a review of land-use maps of the area. Other model options were selected based on EPA guidance.

Maximum 1-hour average NO_2 concentrations were estimated using an NO_2 to NO_x ratio of 0.8—the recommended default ambient ratio per EPA guidance.[5]

Emission Rates and Stack Parameters

Annual emission rates for heating and hot water systems were calculated based on fuel consumption estimates, using energy intensity estimates based on type of development and size of the building (483,189 gsf) under Scenario 2, as recommended in the *CEQR Technical Manual*, and applying emission factors for natural gas-fired boilers.[6] $PM_{2.5}$ emissions include both the filterable and condensable components. The short-term emission rates (24-hour and shorter) were calculated by scaling the annual emissions to account for a 100-day heating season. The exhaust from the heat and hot water systems was assumed to be vented through a single stack located 3.0 feet above the roof of the building at a height of approximately 389 feet above grade.

To calculate exhaust velocity, the fuel consumption of Scenario 2 was multiplied by EPA's fuel factor for natural gas,[7] providing the exhaust flow rate at standard temperature; the flow rate was then corrected for the exhaust temperature, and exhaust velocity was calculated based on the stack diameter. Assumptions for stack diameter and exhaust temperature for the proposed systems were obtained from a survey of boiler exhaust data prepared and provided by DEP,[8] and were used to calculate the exhaust velocity.

The emission rates and exhaust stack parameters used in the modeling analyses are presented in **Table I-2**.

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[4] Albedo is the fraction of the total incident solar radiation reflected by the ground surface. The Bowen ratio is the ratio of the sensible heat flux to the latent (evaporative) heat flux. The surface roughness length is related to the height of obstacles to the wind flow and represents the height at which the mean horizontal wind speed is zero based on a logarithmic profile.

[5] EPA. Memorandum: Clarification on the use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard. September 30, 2014.

[6] EPA. Compilation of Air Pollutant Emission Factors AP-42. 5th Ed., V. I, Ch. 1.4. September, 1998.

[7] EPA. *Standards of Performance for New Stationary Sources.* 40 CFR Chapter I Subchapter C Part 60. Appendix A-7, Table 19-2. 2013.

[8] DEP. *Boiler Database*. Personal communication from Mitchell Wimbish on August 11, 2017.

Table I-2
Exhaust Stack Parameters and Emission Rates: With Action Scenario 2

Parameter	Mixed-Use Residential and Commercial Tower and Medical Office Space
Floor Area (square feet)	483,189
Stack Height (feet)	389
Stack Diameter (feet)	4.4
Exhaust Velocity (meters/second)	1.00
Exhaust Temperature (degrees Fahrenheit) (1)	307.8
NO_2 (1-hour average)	0.150
NO_2 (Annual average)	0.041
$PM_{2.5}$ (24-hour average)	0.011
$PM_{2.5}$ (Annual average)	0.003

Note:
(1) Stack parameters are based on boiler specifications from DEP Boiler Permit Database.
Source:
EPA. Compilations of Air Pollutant Emission Factors AP-42. Fifth Edition, Volume I, Chapter 1, Section 3. September, 1998.

POTENTIAL EFFECTS FROM THE FLOWER HILL HOSPITAL (FHH) BUILDING

The FHH Building was analyzed for its potential impacts on the Proposed Project. Two illustrative With Action scenarios were evaluated: (1) the Applicant's Proposed Project (Scenario 1), in which the FHH Building would remain as a hospital, and (2) a scenario in which TCC discontinues its operations in the Project Area and the FHH Building would be converted to residential use (Scenario 2).

Based on the current design information, the FHH Building under Scenario 1 would have two boilers, each rated at 5.02 million Btu/hr. The boilers would be dual fuel (distillate fuel oil and natural gas) but would operate on uninterruptable gas service (distillate fuel oil would only be used in the event of an emergency due to a temporary loss of gas supply, or for testing purposes). The boilers would vent through a single exhaust stack. The short-term emissions were modeled assuming both boilers operating at 100 percent capacity and annual average emissions were modeled assuming a 100-day heating season. The facility emission rates were estimated using the information obtained, and applying the EPA's AP-42 emission factors for both NO_x and $PM_{2.5}$.

For Scenario 2, emission factors obtained from the *CEQR Technical Manual* were used to determine the emission rates, based on the total square footage of the FHH Building.

Table I-3 presents the emission rates and stack parameters for the proposed FHH Building under Scenario 1 and Scenario 2.

As shown in **Table I-3**, the FHH Building emissions are predicted to be significantly greater under Scenario 1 compared to Scenario 2. Therefore, the AERMOD analysis was performed for Scenario 1 only since it uses more conservative assumptions.

Table I-3
FHH Building—Scenario 1 and Scenario 2
Exhaust Stack Parameters and Emission Rates

Stack Parameter	Scenario 1	Scenario 2
Stack Height (feet)	181	181
Stack Diameter (feet)(1)	2.0	2.0
Exhaust Velocity (meters/second)(2)	4.0	1.94
Exhaust Temperature (degrees Fahrenheit)(2)	307.8	307.8
Emission Rate (grams/second)		
NO_2 (1-hour average)	0.046	0.022
NO_2 (Annual average)	0.013	0.006
$PM_{2.5}$ (24-hour average)	0.009	0.005
$PM_{2.5}$ (Annual average)	0.003	0.001

Notes:
(1) Stack parameters are based on boiler specifications from DEP Boiler Permit database.

C. FUTURE WITH THE PROPOSED ACTIONS

WITH ACTION SCENARIO 1

The results of the AERMOD analysis for 1-hour and annual average NO_2 and 24-hour and annual average $PM_{2.5}$ from under Scenario 1 are presented in **Table I-4**. The maximum predicted NO_2 concentrations were added to the maximum ambient background concentrations and compared with the NAAQS, while 24-hour average $PM_{2.5}$ concentration was compared with the $PM_{2.5}$ *de minimis* criteria. Emissions from the heating and hot water system would not result in any significant adverse air quality impacts. Since NO_2 and $PM_{2.5}$ are the critical pollutants in this analysis, impacts would also not be expected for the SO_2, PM_{10}, and CO standards.

Table I-4
Maximum Modeled Pollutant Concentrations (μg/m³): With Action Scenario 1

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	Criterion
NO_2	1-hour	140.2	—	140.2	188 (1, 2)
	Annual	0.90	38.9	39.8	100 (2)
$PM_{2.5}$	24-hour	5.36	—	5.36	7.8 (3)
	Annual	0.299	—	0.299	0.3 (3)

Notes:
(1) 1-hour average NO_2 total concentrations were modeled using hourly seasonal background concentrations instead of a single concentration.
(2) 1-hour and annual average NO_2 NAAQS.
(3) $PM_{2.5}$ *de minimis* criteria—annual 0.3 μg/m³; 24-hour average, not to exceed more than half the difference between the background concentration and the 24-hour standard of 35 μg/m³.

WITH ACTION SCENARIO 2

INITIAL SCREENING ANALYSIS

The proposed floor area of approximately 483,189 gsf and stack height of 389 feet (3 feet above the roof) was analyzed for the Proposed Actions under With Action Scenario 2. The nearest building of similar or greater height is beyond 400 feet from the Development Site; therefore, this distance was used in the analysis, as per the *CEQR Technical Manual* guidance.

The screening analysis showed that burning fuel oil or natural gas would not result in a significant adverse stationary source air quality impact from heat and hot water systems because at the minimum distance to receptor of a similar or greater height, the proposed development would be below the maximum permitted size, which is based on Figure 17-7 of the Air Quality Appendix of the *CEQR Technical Manual*. This result is presented in **Figure I-1**.

AERSCREEN ANALYSIS

An analysis was performed using the AERSCREEN model to evaluate the 1-hour NO_2, concentrations with the operation of the heating and hot water systems under With Action Scenario 2. The exhaust stack(s) for the heating and hot water systems were modeled at a height of 389 feet, which is 3 feet above the top of the building, as the proposed design currently contemplates.

The maximum predicted 1-hour NO_2 concentrations were added to the maximum ambient background concentration and compared with the NAAQS. The results of this analysis are presented in **Table I-5**.

Table I-5
Maximum Modeled Pollutant Concentrations from Heating and Hot Water Systems (μg/m³): With Action Scenario 2

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	NAAQS / *De Minimis*
NO_2	1-hour$^{(1)}$	13.0	117.3	130.3	188
Note: $^{(1)}$ The 1-hour NO_2 concentration is estimated using NO_2 to NO_x ratio of 0.8 as per EPA guidance.					

As shown in **Table I-2**, the maximum 1-hour NO_2 is predicted to be below the NAAQS. Therefore, no significant adverse air quality impacts are predicted based on the AERSCREEN analysis.

To ensure that there are no significant adverse impacts of $PM_{2.5}$ associated with heating and hot water system emissions, certain restrictions would be required through the mapping of an (E) Designation (E-531) for air quality. Under both Scenario 1 and Scenario 2, the Development Site would require a limitation on the type of fuel used for heating and hot water systems. Additional limitations would be placed on emissions and on placement of boiler exhaust stacks, to ensure that no significant adverse air quality impacts occur. The requirements of the (E) Designation would be as follows:

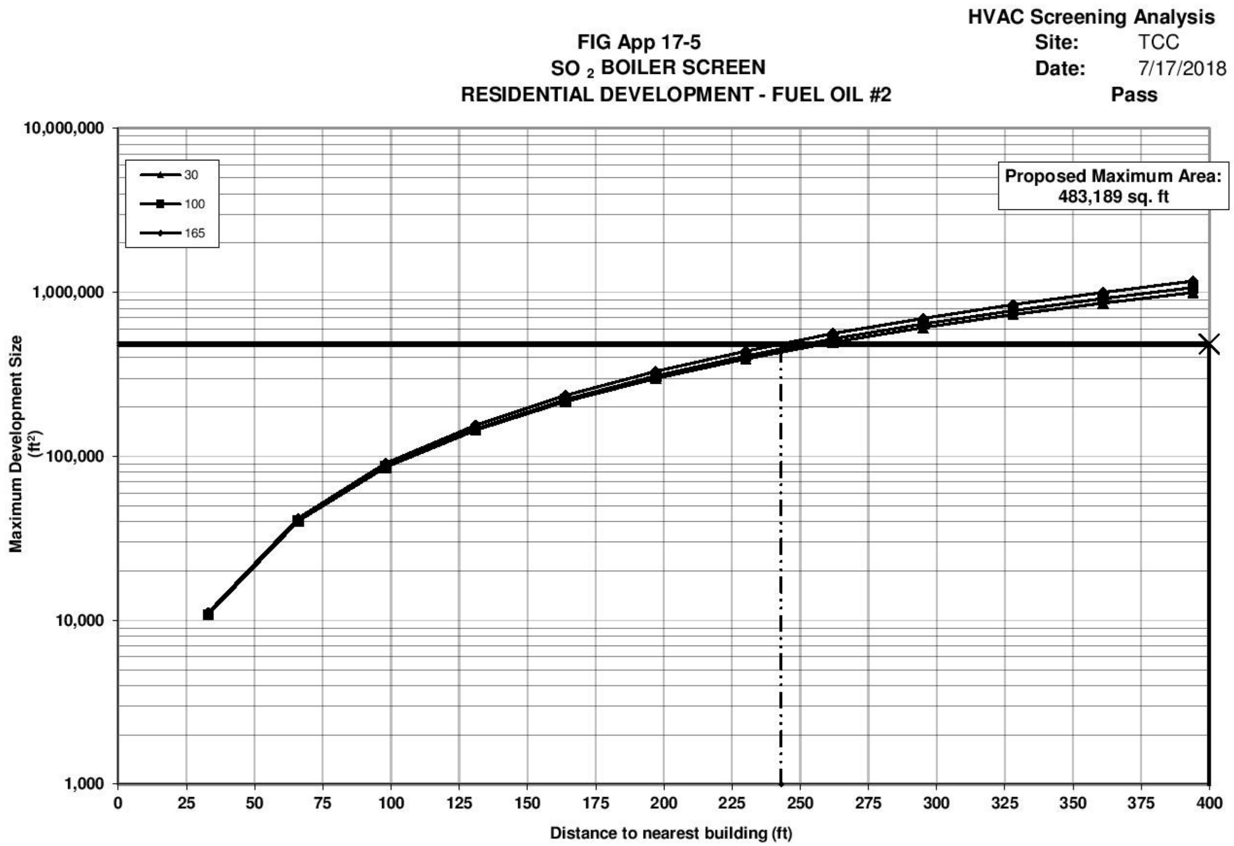
With Action Scenario 1

Block 1611, p/o Lot 1 (Residential Building and Medical Office Use)

Any new development at the portion of Block 1611, Lot 1 beyond 150 feet east of Fifth Avenue must utilize only natural gas in any fossil fuel-fired heat and hot water equipment and ensure that fossil fuel-fired heating and hot water equipment exhaust stack(s) is located at the highest tier and at least 359 feet above grade to avoid any potential significant air quality impacts.

Block 1611, Lot 15 (Senior Building)

Any new development on Block 1611, Lot 15 must utilize only natural gas in any fossil fuel-fired heat and hot water equipment, be fitted with low NO_x (30 ppm) burners and ensure that fossil fuel-fired heating and heating and hot water equipment exhaust stack(s) are located at least 88 feet above grade, and located less than 9 feet away from the lot line facing East 105th Street, to avoid any potential significant air quality impacts.



Stack Height: 389 ft
Distance to Nearest Building of Similar or Greater Height: 400 ft
Proposed Maximum SQFA: 483,189 sq. ft
Minimum Allowable Distance to Nearest Building: 243 ft

Notes:

Basic Screening Results
Figure I-1

With Action Scenario 2

Block 1611, Lot 15 and p/o Lot 1 (Residential Building and Medical Office Use)

Any new development at the portion of Block 1611, Lot 15 and the portion of Lot 1 beyond 150 feet east of Fifth Avenue must utilize only natural gas in any fossil fuel-fired heat and hot water equipment and ensure that fossil fuel-fired heating and hot water equipment exhaust stack(s) is located at the highest tier and at least 389 feet above grade to avoid any potential significant air quality impacts.

With these restrictions, emissions from heating and hot water exhaust stacks would not result in any significant adverse air quality impacts.

To the extent permitted under Section 11-15 of the ZR, the requirements of an (E) Designation may be modified, or determined to be unnecessary, based on new information or technology, additional facts, or updated standards that are relevant at the time each building is ultimately developed.

POTENTIAL EFFECTS FROM THE FHH BUILDING

SCENARIO 1

The potential for stationary source impacts on the Proposed Project from the FHH Building was determined using the known boiler capacity and AERMOD model for Scenario 1. The maximum estimated concentrations of NO_2 from the modeling were added to the background concentrations to estimate total air quality concentrations on the Proposed Project, while $PM_{2.5}$ concentrations were compared with the $PM_{2.5}$ *de minimis* criteria. Two different stack locations were analyzed on the southwest wing of the FHH Building. The more conservative results of the two stack locations from the AERMOD analysis are shown in **Table I-6**.

Table I-6
Maximum Modeled Pollutant Concentrations on the Proposed Project From the FHH Building (μg/m^3)

Pollutant	Averaging Period	Maximum Modeled Impact	Maximum Background Concentration	Total Concentration	Threshold
NO_2	1-Hour	(1)	(1)	157.2	188(2)
	Annual	0.51	38.9	39.4	100(2)
$PM_{2.5}$	24-hour	4.68	N/A	N/A	7.8(3)
	Annual	0.12	N/A	N/A	0.3(4)

Notes:
N/A—Not Applicable
(1) The 1-hour NO_2 concentration presented represents the maximum of the total 98th percentile 1-hour NO_2 concentration predicted at any receptor using seasonal-hourly background concentrations.
(2) 1-hour and annual average NO_2 NAAQS.
(3) $PM_{2.5}$ *de minimis* criteria—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* criteria—annual (discrete receptor)

As shown in **Table I-6**, the predicted pollutant concentrations for all of the pollutant time averaging periods shown are below their respective standards. Therefore, no significant adverse air quality impacts on the Proposed Project from the existing source are predicted.

To ensure that there are no significant adverse impacts of NO_2 and $PM_{2.5}$ associated with heating and hot water system emissions of the FHH Building, certain restrictions would be required through the mapping of an (E) Designation (E-531) for air quality. The FHH Building would require a limitation on the type of fuel used for heating and hot water systems. Additional limitations would be placed on emissions and on placement of boiler exhaust stacks, to ensure that no significant adverse air quality impacts occur. The requirements of the (E) Designation would be as follows:

Block 1611, P/O Lot 1 (FHH Building)

Any new fossil fuel fired heating and hot water systems on the portion of Block 1611, Lot 1 within 150 feet of Fifth Avenue, must utilize only natural gas, be fitted with low NO_x (30 ppm) burners with the maximum capacity of 10.04 MMBtu/hr, and ensure that fossil fuel-fired heating and heating and hot water equipment exhaust stack(s) are located at least 181 feet above grade, and located no greater than 66 feet away from the lot line facing Fifth Avenue, to avoid any potential significant air quality impacts.

With these restrictions, emissions from heating and hot water exhaust stacks associated with the FHH Building would not result in any significant adverse air quality impacts.

To the extent permitted under Section 11-15 of the ZR, the requirements of an (E) Designation may be modified, or determined to be unnecessary, based on new information or technology, additional facts, or updated standards that are relevant at the time each building is ultimately developed.

D. CONCLUSION

With the above measures included as part of the Proposed Actions, no significant adverse impacts related to air quality would occur. ✷

A. INTRODUCTION

This attachment assesses the potential for the Proposed Actions to result in significant adverse noise impacts. According to the guidelines established in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, an initial noise impact screening considers whether a proposed action would generate any mobile or stationary source noise, or be located in an area with high ambient noise levels. A noise analysis examines an action for its potential effects on sensitive noise receptors, and the effects of ambient noise on the interior noise levels of residential, commercial, and community facility uses.

As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

Based on Attachment H, "Transportation," With Action Scenario 2 would generate a greater number of vehicular trips in each peak hour than With Action Scenario 1 and would have the potential for increased ambient noise. Therefore, With Action Scenario 2 was used in this analysis to determine the potential for significant adverse noise impacts from the Proposed Actions. However, as explained below, noise attenuation measures would be applicable to both scenarios.

Based on Attachment H, "Transportation," the Proposed Actions would not generate sufficient traffic to have the potential to cause a significant noise impact in terms of mobile sources (e.g., it would not result in a doubling of noise passenger car equivalents [Noise PCEs] which would be necessary to cause a 3 A-weighted decibel or dBA increase in noise levels). However, the effect of ambient noise (including noise from vehicular traffic) is addressed in the following section, which determines the level of building attenuation necessary to ensure that the interior noise levels of the buildings facilitated by the Proposed Actions satisfy applicable interior noise criteria. An (E) Designation would be mapped on Lots 1 and 15 that require appropriate window-wall attenuation in order to achieve a maximum interior noise environment of 45 dBA for residential (including non-profit senior housing), in-patient medical, medical office, and community facility uses, or 50 dBA for commercial uses. These attenuation requirements would also be applicable to both With Action Scenario 1 and With Action Scenario 2. As discussed in detail below, the Proposed Actions would not result in any significant adverse noise impacts.

B. ACOUSTICS FUNDAMENTALS

Sound is a fluctuation in air pressure. Sound pressure levels are measured in units called decibels (dB). The particular character of the sound that we hear (e.g., a whistle compared with a French horn) is determined by the speed, or frequency, at which the air pressure fluctuates, or oscillates. Frequency defines the oscillation of sound pressure in terms of cycles per second. One cycle per second is known as 1 Hertz (Hz). People can hear over a relatively limited range of sound frequencies, generally between 20 Hz and 20,000 Hz, and the human ear does not perceive all frequencies equally well. High frequencies (e.g., a whistle) are more easily discernable and therefore more intrusive than many low frequencies (e.g., the lower notes on the French horn).

A-WEIGHTED SOUND LEVEL (DBA)

In order to establish a uniform noise measurement that simulates people’s perception of loudness and annoyance, the decibel measurement is weighted to account for those frequencies most audible to the human ear. This is known as the A-weighted sound level, or dBA, and it is the descriptor of noise levels most often used for community noise. As shown in **Table J-1**, the threshold of human hearing is defined as 0 dBA; quiet conditions (e.g., a library) are approximately 40 dBA; normal daily activity conditions are between 50 dBA and 70 dBA; noisy conditions are above 70 dBA; and loud, intrusive, and deafening conditions approach 130 dBA.

In considering these values, it is important to note that the dBA scale is logarithmic, meaning that each increase of 10 dBA describes a doubling of perceived loudness. Thus, the background noise in an office, at 50 dBA, is perceived as twice as loud as a library at 40 dBA. For most people to perceive an increase in noise, it must be at least 3 dBA. At 5 dBA, the change will be readily noticeable.

Table J-1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	80–90
Busy city street, loud shout	80
Busy traffic intersection	70–80
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas, or residential areas close to industry	50–60
Background noise in an office	50
Suburban areas with medium-density transportation	40–50
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note:
A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Sources:
Cowan, James P. *Handbook of Environmental Acoustics,* Van Nostrand Reinhold, New York, 1994. Egan, M. David, Architectural Acoustics. McGraw-Hill Book Company, 1988.

SOUND LEVEL DESCRIPTORS

Because dBA describes a noise level at just one moment and few noises are constant, other ways of describing noise that fluctuates over extended periods have been developed. One way is to describe the fluctuating sound heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the equivalent sound level (L_{eq}) can be computed. L_{eq} is the constant sound level that, in a given situation and time period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted by $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are used to indicate noise levels that are exceeded 1, 10, 50, 90, and x percent of the time, respectively.

The relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates little, L_{eq} will be approximately equal to the L_{50} or the median value. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50}.

For purposes of the Proposed Actions, the L_{10} descriptor has been selected as the noise descriptor to be used to evaluate interior noise exposure. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines for City environmental impact review classification.

C. NOISE STANDARDS AND CRITERIA

NEW YORK CEQR NOISE CRITERIA

The *CEQR Technical Manual* sets external noise exposure standards; these standards are shown in **Table J-2**. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable.

Table J-2
Noise Exposure Guidelines For Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
Outdoor area requiring serenity and quiet[2]		$L_{10} \le 55$ dBA	------- $L_{dn} \le 60$ dBA -------	**N/A**	------- $60 < L_{dn} \le 65$ dBA -------	**N/A**	(i) $65 < L_{dn} \le 70$ dBA, (II) $70 \le L_{dn}$	**N/A**	------- $L_{dn} \le 75$ dBA -------
Hospital, nursing home		$L_{10} \le 55$ dBA		$55 < L_{10} \le 65$ dBA		$65 < L_{10} \le 80$ dBA		$L_{10} > 80$ dBA	
Residence, residential hotel, or motel	7 AM to 10 PM	$L_{10} \le 65$ dBA		$65 < L_{10} \le 70$ dBA		$70 < L_{10} \le 80$ dBA		$L_{10} > 80$ dBA	
	10 PM to 7 AM	$L_{10} \le 55$ dBA		$55 < L_{10} \le 70$ dBA		$70 < L_{10} \le 80$ dBA		$L_{10} > 80$ dBA	
School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, outpatient public health facility		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)	
Commercial or office		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)		Same as Residential Day (7 AM–11 PM)	
Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:
(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) *CEQR Technical Manual* noise criteria for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the L_{dn} value for such train noise to be an L_{dn} (L_{dn} contour) value.
[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.
[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need, and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
[3] One may use FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.
[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).
Source:
New York City Department of Environmental Protection (DEP)(adopted policy 1983).

The *CEQR Technical Manual* also defines attenuation requirements for buildings based on exterior noise level (see **Table J-3**). Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential (including nonprofit senior housing), in-patient medical, medical office, and community facility uses and 50 dBA or lower for commercial use and are determined based on exterior $L_{10(1)}$ noise levels.

Table J-3
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with the Proposed Actions	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Attenuation[A]	(I) 28 dBA	(II) 31 dBA	(III) 33 dBA	(IV) 35 dBA	$36 + (L_{10} - 80)^{B}$ dBA

Notes:
[A] The above composite window-wall attenuation values are for residential (including non-profit senior housing) and community facility uses. Commercial uses would be 5 dBA less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.
[B] Required attenuation values increase by 1 dBA increments for L_{10} values greater than 80 dBA.
Source:
DEP

D. NOISE PREDICTION METHODOLOGY

GENERAL METHODOLOGY

Future noise levels were calculated using a proportional modeling technique, which was used as a screening tool to estimate changes in noise levels in the Future with the Proposed Actions (the "With Action" condition). Consistent with the analysis presented in Attachment H, "Transportation," the projections of future noise levels are based on With Action Scenario 2 as a worst-case condition because With Action Scenario 2 would generate a greater number of vehicular trips in each peak hour than With Action Scenario 1 and would have the potential for increased ambient noise. The proportional modeling technique is an analysis methodology recommended for analysis purposes in the *CEQR Technical Manual*. The noise analysis examined the weekday AM, MD, and PM peak hours at all receptor sites. The selected time periods are when the Proposed Project in With Action Scenario 1 would be expected to produce the maximum traffic generation (based on the traffic studies presented in Attachment H, "Transportation") and therefore result in the maximum potential for significant adverse noise impacts. The proportional modeling used for the noise analysis is described below.

PROPORTIONAL MODELING

Proportional modeling was used to determine locations with the potential for having significant noise impacts. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels where traffic is the dominant noise source is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No Action and With Action condition noise levels. Vehicular traffic volumes are converted into Noise PCE values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than 9 passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$F\ NL - E\ NL = 10 * \log_{10} (F\ PCE / E\ PCE)$$

where:

F NL = Future Noise Level

E NL = Existing Noise Level

F PCE = Future Noise PCEs

E PCE = Existing Noise PCEs

Sound levels are measured in decibels and therefore increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in Noise PCEs. As an example, traffic is assumed to be the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE and if the future traffic volume were increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

E. EXISTING NOISE LEVELS

Existing noise levels at the Development Site were measured at three locations: Site 1 was located on Madison Avenue between East 105th and East 106th Streets; Site 2 was located on East 106th Street between Madison Avenue and Fifth Avenue; and Site 3 was located on East 105th Street between Madison Avenue and Fifth Avenue (see **Figure J-1**).

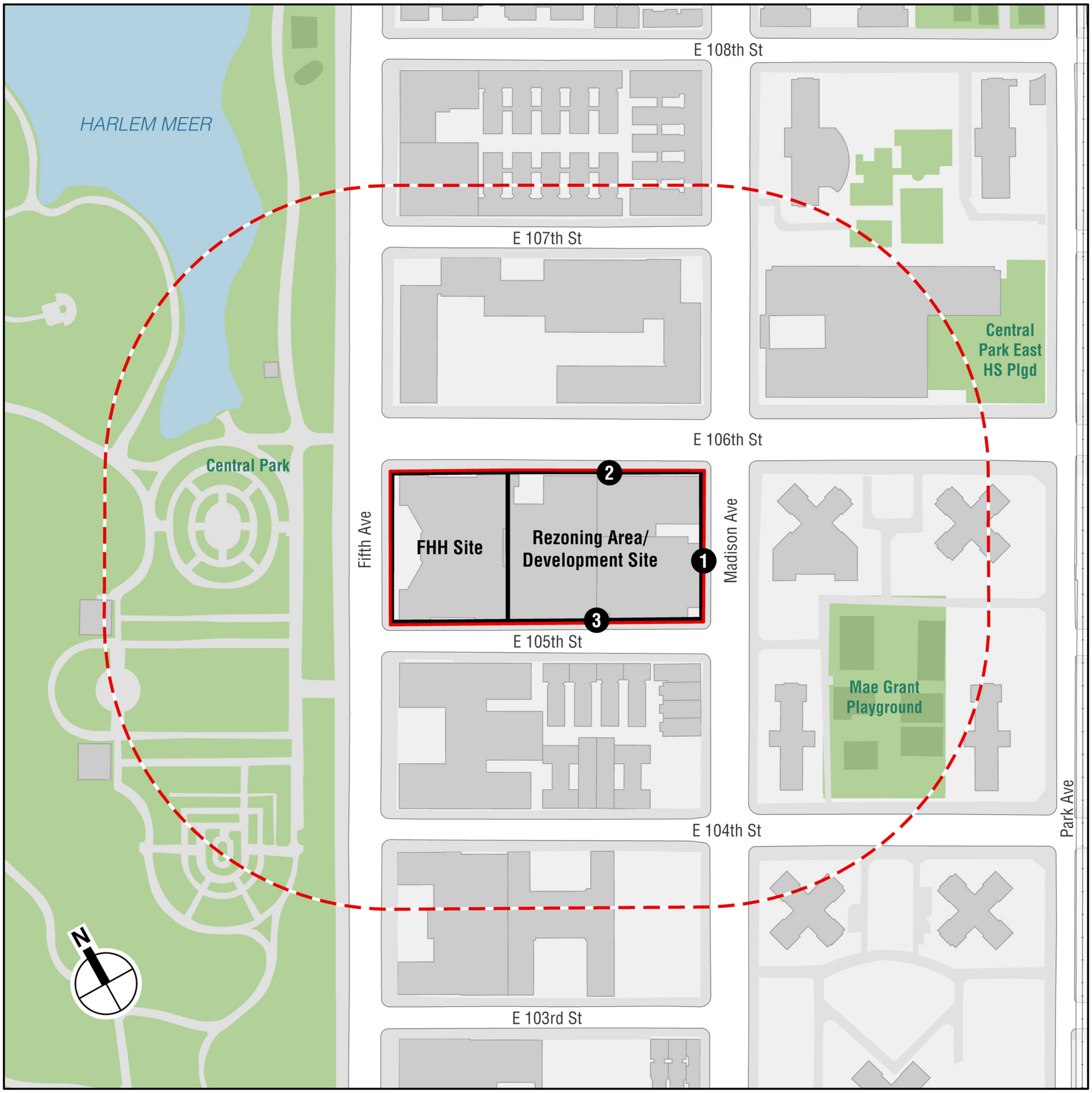
At the receptor sites, the existing noise levels were measured for 20 minutes during each of the three weekday peak periods—AM (7:00 AM to 9:00 AM), midday (MD) (12:00 PM to 2:00 PM), and PM (4:30 PM to 6:30 PM). Measurements were taken on May 30, 2018.

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using a Brüel & Kjær Sound Level Meter (SLM) Type 2260, Brüel & Kjær ½-inch microphone Type 4189, and a Brüel & Kjær Sound Level Calibrator Type 4231. The Brüel & Kjær SLM is a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). The SLM has a laboratory calibration date within 1 year of the date of the measurement, as is standard practice. The microphone was mounted at a height of approximately 5 feet above the ground surface on a tripod and at least approximately 5 feet away from any large reflecting surfaces. The SLM was calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements were made on the A-scale (dBA). The data were digitally recorded by the SLM and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, L_{90}, and ⅓ octave band levels. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

RESULTS

The results of the existing noise level measurements are summarized in **Table J-4**.



Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

1 *Noise Measurement Location*

TERENCE CARDINAL COOKE REZONING

Noise Measurement Locations

Figure J-1

Table J-4
Existing Noise Levels in dBA

Site	Location	Time Period	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	Madison Avenue between East 105th and East 106th Streets	AM	68.6	80.2	70.6	63.4	58.0
		MD	65.2	72.6	68.4	63.1	58.8
		PM	68.7	77.9	71.1	66.8	60.6
2	East 106th Street between Madison Avenue and Fifth Avenue	AM	67.5	76.2	69.7	65.9	62.7
		MD	68.1	78.4	70.0	65.5	62.5
		PM	66.8	75.3	69.4	64.9	61.9
3	East 105th Street between Madison Avenue and Fifth Avenue	AM	63.8	74.1	64.8	61.8	60.1
		MD	66.7	76.6	66.0	62.7	61.3
		PM	63.2	70.0	65.2	62.0	60.2

Note: Noise measurements were performed on May 30, 2018.

At each receptor site, vehicular traffic was the dominant noise source and measured noise levels are moderate, reflecting the level of vehicular activity on the adjacent roadways. With regard to the CEQR criteria, the existing noise levels at Sites 2 and 3 are in the “marginally acceptable” category, and the existing noise levels at Site 1 are in the “marginally unacceptable” category.

F. FUTURE WITHOUT THE PROPOSED ACTIONS

Using the methodology previously described, the Future without the Proposed Actions (the “No Action” condition) noise levels were calculated at the three mobile source noise analysis receptors for the 2025 analysis year. These No Action condition values are shown in **Table J-5**.

Table J-5
2025 No Action Condition Noise Levels (in dBA)

Receptor	Location	Time	Existing $L_{eq(1)}$	No Action $L_{eq(1)}$	$L_{eq(1)}$ Change	No Action $L_{10(1)}$
1	Madison Avenue between East 105th and East 106th Streets	AM	68.6	68.9	0.3	70.9
		MD	65.2	65.5	0.3	68.7
		PM	68.7	68.9	0.2	71.3
2	East 106th Street between Madison Avenue and Fifth Avenue	AM	67.5	68.0	0.5	70.2
		MD	68.1	68.6	0.5	70.5
		PM	66.8	66.9	0.1	69.5
3	East 105th Street between Madison Avenue and Fifth Avenue	AM	63.8	63.2	-0.6	64.2
		MD	66.7	66.1	-0.6	65.4
		PM	63.2	60.8	-2.4	62.8

Notes:
1. Noise levels at all receptor Sites were calculated by using proportional modeling.
2. Weekday midday noise levels are estimated using the largest increment from either the AM or PM time period and applying to the measured existing midday noise levels. Detailed traffic study during weekday midday is not warranted, see Attachment H, “Transportation.”

In 2025, the maximum increase in $L_{eq(1)}$ at all receptor sites would be 0.5 dBA or less. Changes of this magnitude would be considered imperceptible and not significant according to *CEQR Technical Manual* noise impact criteria. In terms of CEQR noise exposure guidelines, noise levels at Sites 1, 2 and 3 would be in the “Marginally Unacceptable” category.

G. FUTURE WITH THE PROPOSED ACTIONS

Using the methodology previously described, With Action Scenario 2 noise levels due to mobile source noise were calculated at the three noise analysis receptors for the 2025 analysis year. With Action Scenario 2 noise levels for each receptor site are shown in **Table J-6**.

Table J-6
2025 With Action Scenario 2 Noise Levels (in dBA)

Receptor	Location	Time	No Action $L_{eq(1)}$	With Action $L_{eq(1)}$	$L_{eq(1)}$ Change	With Action $L_{10(1)}$
1	Madison Avenue between East 105th and East 106th Streets	AM	68.9	69.0	0.1	71.0
		MD	65.5	65.6	0.1	68.8
		PM	68.9	68.9	0.0	71.3
2	East 106th Street between Madison Avenue and Fifth Avenue	AM	68.0	68.3	0.3	70.5
		MD	68.6	69.1	0.5	71.0
		PM	66.9	67.4	0.5	70.0
3	East 105th Street between Madison Avenue and Fifth Avenue	AM	63.2	64.2	1.0	65.2
		MD	66.1	67.4	1.3	66.7
		PM	60.8	62.1	1.3	64.1

In 2025, the maximum increase in $L_{eq(1)}$ noise levels for With Action Scenario 2 would be 1.3 dBA. Changes of this magnitude would be considered imperceptible or just noticeable according to *CEQR Technical Manual* guidance and would fall below the CEQR threshold for a significant adverse noise impact. In terms of CEQR noise exposure guidelines, With Action condition noise levels at Sites 1, 2 and 3 would remain in the “Marginally Unacceptable” category.

H. NOISE ATTENUATION MEASURES

As shown in **Table J-2**, the *CEQR Technical Manual* has set noise attenuation quantities for buildings based on exterior $L_{10(1)}$ noise levels in order to maintain interior noise levels of 45 dBA or lower for residential (including nonprofit senior housing) and community facility uses and 50 dBA or lower for commercial uses. The results of the building attenuation analysis are summarized in **Table J-7**.

Table J-7
CEQR Building Attenuation Requirements

Façade	Associated Receptor Site	Maximum Measured L_{10} (in dBA)	Attenuation Required[1] (in dBA)
North	2	71.0	28
South (>50 ft from Madison Avenue)	3	66.7	N/A[2]
South (≤50 ft from Madison Avenue)	1	71.3	28
East	1	71.3	28
West	2	71.0	28

Notes:
[1] The CEQR attenuation requirements shown are for residential (including non-profit senior housing) and community facility uses; commercial uses would require 5 dBA less attenuation.
[2] N/A indicates that the L_{10} value is less than 70 dBA. The *CEQR Technical Manual* does not address noise levels this low, therefore there is no minimum attenuation guidance.

(E) DESIGNATION

To implement the attenuation requirements shown in **Table J-7**, an (E) Designation (E-531) for noise would be applied to the Development Site (Block 1611, p/o Lots 1 and 15) specifying a requirement for the appropriate amount of window-wall attenuation and an alternate means of ventilation. The text for the (E) Designation would be as follows:

*To ensure an acceptable interior noise environment, future development at Block 1611, Lot 15 and the portion of Lot 1 beyond 150 feet east of Fifth Avenue (e.g., the area that is being rezoned under the Proposed Actions) must provide a closed-window condition with a minimum attenuation as shown in **Table J-7** to ensure an interior L_{10} noise level not greater than 45 dBA or lower for residential and community facility uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.*

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade consists of wall, glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. The proposed building's façades, including these elements, would be designed to provide a composite window-wall attenuation greater than or equal to those listed above in **Table J-7**, along with an alternative means of ventilation to allow for the maintenance of a closed-window condition. By adhering to these design specifications, the proposed buildings would provide sufficient attenuation to achieve CEQR interior $L_{10(1)}$ noise level guidelines.

I. MECHANICAL EQUIPMENT

The building mechanical systems (i.e., heating, ventilation, and air conditioning systems) would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24-227 of the New York City Noise Control Code and the New York City Department of Buildings Code) and to avoid producing levels that would result in any significant increase in ambient noise levels.

J. CONCLUSION

Overall, with the proposed (E) Designation mapped in connection with the zoning map amendments, the Proposed Actions would not result in significant adverse impacts associated with noise. ✷

A. INTRODUCTION

This attachment describes the construction characteristics and potential impacts associated with the Proposed Actions.

As described in Attachment A, "Project Description," the Proposed Actions consist of a zoning map amendment to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and a zoning text amendment to designate a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), a skilled nursing facility and specialty hospital occupying the full block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15, the "Project Area").

The Proposed Actions would facilitate the consolidation and modernization of TCC's skilled nursing facility and specialty hospital (the "Joint Long-Term Care and Hospital Facility") at the Flower Hill Hospital (FHH) Building on Fifth Avenue (the "FHH Site"), and allow for new residential and community facility development on the remaining portion of Block 1611, p/o Lot 1 and Lot 15 (the "Rezoning Area" or "Development Site"). The Development Site would be developed with a nonprofit senior supportive housing development, a new residential building, and medical office use for TCC's Program of All-Inclusive Care for the Elderly (collectively, the "Proposed Project"). The Proposed Project would replace three existing buildings: the Annex, the Cohen Building, and a parking garage.

In order to assess the potential effects of the Proposed Actions, a reasonable worst case development scenario (RWCDS) was analyzed for the 2025 analysis year. As the proposed zoning map amendment would allow for community facility, residential, and limited commercial development, the EAS considers two illustrative With Action scenarios that maximize floor area, with varying amounts of residential, community facility, and commercial space, in order to ensure a conservative analysis: first, the Applicant's Proposed Project ("With Action Scenario 1"); second, a scenario in which TCC discontinues its operations in the Project Area and the FHH Building is converted to residential use ("With Action Scenario 2").

For construction, under Scenario 1, renovations would be conducted in phases to ensure that TCC facilities and services are able to continue to operate throughout construction. The Applicant would redevelop the Project Area with new medical facilities, the Senior Building (a nonprofit institution with sleeping accommodations), and residential space and modernize and consolidate TCC's functions within the existing FHH Building. Construction would occur in two phases. In Phase 1, the FHH Building would be rehabilitated to accommodate the Joint Long-Term Care and Hospital Facility. The existing garage would then be demolished, and the Development Site would be developed with a 10-story, 87,653-gross-square-foot (gsf) Senior Building containing approximately 150 supportive housing (SH) units, on the corner of East 105th Street and Madison Avenue. In Phase 2, the Annex and Cohen Building would be demolished so that the remainder of the Development Site would be developed with TCC's Program of All-Inclusive Care for the Elderly ("PACE Center"), in a two-story building located midblock, containing 54,606 gsf of medical office space. The PACE Center would be combined with a 32-story residential tower, rising above the two-story base and containing 340,940 gsf of residential space (379 dwelling units [DUs], including 114 affordable DUs), on the corner of East 106th Street and Madison Avenue.

Under Scenario 2, TCC would discontinue operations in the Project Area. The FHH Building would be converted to residential use and other buildings on the Development Site would be demolished and developed as a mixed-use development. Construction is assumed to occur in a single phase. The FHH Building would accommodate 215 market-rate DUs and the parking garage would be demolished. The Annex and Cohen Building would be demolished and replaced with a mixed-use development containing 121,471 gsf of outpatient medical office space, a 34-story 340,930-gsf residential tower containing 379 DUs (including 114 affordable DUs) along East 106th Street, and 20,788 gsf of ground-floor retail space along Madison Avenue.

The duration of construction activity would be similar in both scenarios, with construction commencing in September 2020 under Scenario 1 and June 2021 under Scenario 2, and expected completion in July 2024. This attachment summarizes a conceptual construction program that demonstrates the manner in which development under the Proposed Actions could proceed and assesses the potential for significant adverse impacts during construction in accordance with the 2014 *City Environmental Quality Review (CEQR) Technical Manual*.

The attachment provides a discussion of the governmental coordination and oversight that governs construction, a conceptual construction schedule, activities likely to occur during construction, the types of equipment that are likely to be used, construction logistics (e.g., site access points and potential staging area locations), and construction workers and truck delivery estimates. Based on this information, potential impacts on transportation, air quality, noise and vibration, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, natural resources, and hazardous materials from construction activities are analyzed.

Construction would result in temporary disruptions in the surrounding area, as is the case with most construction projects. However, with approval of the Proposed Actions, the Applicant has committed to implementing a variety of measures during construction to minimize effects on the surrounding community. Upon approval, the Applicant would enter into a Restrictive Declaration (RD), a legally binding mechanism tied to the Project Area. As discussed throughout this attachment, the RD would identify Project Components Related to the Environment (PCRE) related to protection of historic buildings, air quality, and noise during construction activities. The PCREs would be binding on the Applicant or other future developers of property within the Project Area.

COMMUNICATION WITH COMMUNITY

- Information about upcoming construction activities would be provided to the community members through regular email updates.
- The Applicant (and/or a future developer) would provide regular construction updates to the community and local leaders.
- A dedicated hotline would be established for community members to register concerns or problems that may arise during the construction period. In addition, New York City maintains a 24-hour telephone hotline (311) so that concerns can be registered with the City.

COMMUNITY SAFETY

- A number of measures would be employed to ensure public safety during the construction, including the erection of sidewalk bridges, the employment of flag persons, and the installation of safety nettings;
- Maintenance and Protection of Traffic (MPT) plans would be developed for any temporary sidewalk, lane, and/or street closures. Approval of these plans and implementation of the closures would be coordinated with the New York City Department of Transportation (DOT)'s Office of Construction Mitigation and Coordination (OCMC);
- A pest management program would be implemented to reduce the presence of rodents at and near the Development Site; and
- All New York City Department of Building (DOB) safety requirements and protocols would be followed and construction would be undertaken so as to ensure the safety of the community and the construction workers themselves.

TRANSPORTATION

Net incremental traffic, transit, and pedestrian trips during peak construction activities would not exceed the *CEQR Technical Manual* analysis thresholds for any hour for either scenario. Therefore, the Proposed Actions would not result in significant adverse traffic, transit, or pedestrian impacts during construction for either scenario. Based on the parking analysis presented in Attachment H, "Transportation," it is expected that there could be a parking shortfall during peak construction activities for both scenarios. However, this potential shortfall would not be considered a significant adverse impact based on the *CEQR Technical Manual* criteria due to the availability of alternative modes of transportation in Manhattan. Therefore, the Proposed Actions would similarly not result in significant adverse parking impacts during construction for either scenario.

AIR QUALITY

An emissions reduction program would be implemented 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, best available tailpipe reduction technologies, and the utilization of newer equipment. 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 development under the Proposed Actions would not result in significant adverse air quality impacts due to construction sources.

NOISE

Construction under both scenarios would result in elevated noise levels at nearby receptors and noise due to construction would at times be noticeable and potentially intrusive. However, noise from construction would be intermittent and of limited duration, and estimated construction noise levels at most receptors would not exceed *CEQR Technical Manual* construction noise screening thresholds. In addition, the Applicant has committed to additional noise control measures beyond the minimum required by code in order to reduce potential noise effects on the surrounding receptors.

These measures would include equipment sound level standards, a commitment to use drilling in place of impact pile driving, locating sources away from sensitive locations, and installation of noise enclosures/barriers and would bind future developers of property within the Project Area as well.

At receptors adjacent to or across from the Development Site, construction would result in large noise level increases and high noise levels during the most noise-intensive construction activities at the adjacent work area. However, these noise levels would be intermittent and temporary based on the preliminary construction schedule. Consequently, the projected levels of noise resulting from construction at these receptors would not rise to the level of a significant adverse noise impact at these locations.

VIBRATION

For historic structures located within 90 feet of the Development Site, the Applicant (and/or a future developer) would incorporate vibration monitoring, and vibration levels during construction would not be permitted to exceed the 0.50 inches/second threshold considered acceptable for historic structures. Vibration-producing equipment would not operate in proximity to non-historic structures such that they could potentially result in damage to these structures. Furthermore, construction would not result in extended periods of perceptible or annoying vibrations at surrounding receptors. Therefore, construction would not have the potential to result in significant adverse vibration impacts.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several City, state, and federal agencies. For projects in New York City, primary construction oversight lies with DOB, which oversees compliance with the New York City Building Code. The areas of oversight include installation and operation of equipment such as cranes, sidewalk bridges, safety netting, and scaffolding. DOB also enforces safety regulations to protect workers and the general public during construction. The New York City Department of Parks and Recreation (NYC Parks) has oversight of tree protection and tree removal during construction. The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code and regulates water disposal into the sewer system. The New York City Office of Environmental Remediation (OER) reviews and approves any needed Remedial Action Plans (RAPs) and abatement of hazardous materials. 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. New York City Landmarks Preservation Commission (LPC) approves the historic and cultural resources analysis, the Construction Protection Plan (CPP), and oversees measures established to prevent damage to historic structures.

At the state level, the New York State Department of Labor (NYSDOL) licenses asbestos workers. The New York State Department of Environmental Conservation (NYSDEC) regulates disposal of hazardous materials, and construction and operation of bulk petroleum and chemical storage tanks. At the federal level, although the U.S. Environmental Protection Agency (EPA) has wide-ranging authority over environmental matters, including air emissions, noise, and hazardous materials, much of its responsibility is delegated to the state and City levels. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

C. CONSTRUCTION SCHEDULE

The anticipated construction schedules under Scenarios 1 and 2 are presented in **Tables K-1 and K-2** as well as **Figure K-1**. Under Scenario 1 (see **Table K-1)**, construction would occur in two phases to enable uninterrupted use and operation of TCC facilities. These schedules were conceptually developed to represent durations that construction would occur. During Phase 1, the FHH Building would be rehabilitated to accommodate the Joint Long-Term Care and Hospital Facility. The existing garage would then be demolished, and the Development Site would be developed with a 10-story Senior Building. In Phase 2, the Annex and Cohen Building would be demolished so that the remainder of the Development Site would be developed with the PACE Center in a two-story building and a 32-story residential tower, rising above the two-story base.

Table K-1
Scenario 1 Anticipated Construction Schedule

Construction Task	Estimated Start Month	Estimated Finish Month	Duration
FHH Renovation	July, 2019	June, 2021	23
Phase 1			
Demolition	December, 2019	February, 2020	2
Excavation	February, 2020	May, 2020	3
Foundation	May, 2020	August, 2020	3
Superstructure	August, 2020	November, 2020	3
Exteriors	November, 2020	February, 2021	3
Interiors	February, 2021	June, 2021	4
Phase 2			
Demolition	June, 2021	September, 2021	3
Excavation	September, 2021	January, 2022	4
Foundation	November, 2021	March, 2022	4
Superstructure	March, 2022	January, 2023	10
Exteriors	November, 2022	September, 2023	10
Interiors	July, 2023	July, 2024	12

Table K-2
Scenario 2 Anticipated Construction Schedule

Construction Task	Estimated Start Month	Estimated Finish Month	Duration
FHH Renovation	June, 2020	May, 2022	23
Demolition	June, 2020	November, 2020	5
Excavation	November, 2020	June, 2021	7
Foundation	February, 2021	September, 2021	7
Superstructure	September, 2021	October, 2022	13
Exteriors	July, 2022	August, 2023	13
Interiors	May, 2023	July, 2024	14

Under Scenario 2 (see **Table K-2**), construction would occur in a single phase. Buildings would be vacated, demolished and replaced with a mixed-use development containing a residential tower, outpatient medical office space, and ground-floor retail space.

Construction under both scenarios would consist of the following primary construction stages, which may overlap at certain times: excavation and foundation; superstructure construction; exteriors; interiors and finishing; and landscaping. While the intensity of construction activities

4.4.19

Scenario 1

2019 | 2020 | 2021 | 2022 | 2023 | 2024

PHASE 1 | PHASE 2

TASK	START	FINISH
FHH Renovation/ Adaptive Reuse	7/1/2019	6/1/2021
Demolition - Ph1	12/1/2019	2/1/2020
Excavation - Ph1	2/1/2020	5/1/2020
Foundation - Ph1	5/1/2020	8/1/2020
Superstructure - Ph1	8/1/2020	11/1/2020
Exteriors - Ph1	11/1/2020	2/1/2021
Interiors - Ph1	2/1/2021	6/1/2021
Demolition	6/1/2021	9/1/2021
Excavation	9/1/2021	1/1/2022
Foundation	11/1/2021	3/1/2022
Superstructure	3/1/2022	1/1/2023
Exteriors	11/1/2022	9/1/2023
Interiors	7/1/2023	7/1/2024

Truck per day based on construction equipment assumed for the construction of the Coney Island Hospital CSS Building and Block 675 East Rezoning (Project Site B)

Scenario 2

2020 | 2021 | 2022 | 2023 | 2024

PHASE I | PHASE 2

TASK	START	FINISH
FHH Renovation/ Adaptive Reuse	6/1/2020	5/1/2022
Demolition	6/1/2020	11/1/2020
Excavation	11/1/2020	6/1/2021
Foundation	2/1/2021	9/1/2021
Superstructure	9/1/2021	10/1/2022
Exteriors	7/1/2022	8/1/2023
Interiors	5/1/2023	7/1/2024

Truck per day based on construction equipment assumed for the construction of the Coney Island Hospital CSS Building and Block 675 East Rezoning (Project Site B) within each stage would vary over the duration, the construction schedule conservatively assumes that construction activities within each stage would be at the highest anticipated intensity. Consequently, emissions and noise levels from equipment are conservatively higher in the analyses. This results in conservatively high estimates of overlap. These construction stages are described in greater detail under “General Construction Stages.”

D. DESCRIPTION OF CONSTRUCTION ACTIVITIES

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 7:00 AM and 6:00 PM on weekdays, with most workers arriving between 6:00 AM and 7:00 AM. Normally work would end at 3:30 PM, but it can be expected that, in order to complete certain critical tasks (e.g., finishing 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 6:00 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

Weekend or night work may also be occasionally required for certain construction activities, such as the erection of the tower crane. Appropriate work permits from DOB would be obtained for any necessary work outside of normal construction 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 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. The weekend workday, if necessary, would typically occur from 8:00 AM to 4:00 PM.

ACCESS, DELIVERIES, AND STAGING AREAS

Access to construction areas would be fully controlled. For all construction sites, work areas would be fenced off, and limited access points for workers and construction-related trucks would be provided. Construction workers are generally prohibited from parking their vehicles on-site during the construction period.

MPT plans would be developed for any required temporary sidewalk, lane, and/or street closures 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 for all sites would include but not be limited to the following: curbside lane closures; safety signs; safety barriers; and construction fencing.

PUBLIC SAFETY

A variety of measures would be employed to ensure public safety during construction, including, but not limited to, sidewalk bridges to provide overhead protection; 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 construction areas and/or to provide guidance for pedestrians and bicyclists safety; and safety nettings during demolition and on the sides of the proposed buildings as the superstructure work advances upward to prevent debris from failing to the ground. All DOB safety requirements would be followed and construction would be undertaken to ensure the safety of the community and construction workers.

RODENT CONTROL

Construction contracts would include provisions for a rodent 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. Measures that may be implemented during construction include baiting the Development Site within fenced construction areas, providing covered trash receptacles that would be emptied daily, trimming all vegetation regularly, and elevating construction trailers dumpsters and sheds to discourage rodents from nesting in them. To keep the community safe, signage on all baiting areas would be posted, and coordination would be conducted with the appropriate public agencies.

GENERAL CONSTRUCTION STAGES

Prior to the commencement of construction, the work area for the Development Site would be prepared for construction. Preparation of the work areas would include the installation of public safety measures such as fencing, netting, and signs. The fencing would typically be a solid construction fence to minimize interference between passersby and the construction work. Construction areas would be cleared and worker and truck access points would be established. Portable toilets, construction trailers, and dumpsters for trash would be brought on-site and installed.

After site work activities are complete, construction would proceed with the construction stages detailed below. Typical construction equipment was assumed as part of a conceptual construction schedule (see **Table K-3**) to represent the anticipated equipment that would be located on-site for each of the construction stages.

Table K-3
Typical Construction Equipment Conceptual Schedule

Construction Task	Equipment Type	Quantity	Engine Type	Engine Size
Renovation				
	Hoist	1	Electric	400A
	Hand Tools	10	Electric	20A
	Welder	5	Electric	50A
Demolition				
	Excavator	2	Diesel	150 hp
	Bobcat	2	Diesel	61 hp
	Compressor-Jackhammer	2	Diesel	100 hp
Excavation				
	Excavator	2	Diesel	150 hp
	Compressor-Jackhammer	1	Diesel	100 hp
	Generator	2	Diesel	100 hp
	Bobcat	2	Diesel	61 hp
	Crawler Crane	1	Diesel	362 hp
	Concrete Vibrators	1	Electric	20 A
Foundation				
	Pile Driving Rig	2	Diesel	400 hp
	Compressor-Jackhammer	1	Diesel	100 hp
	Bar Bending Machine	1	Gasoline	50 hp
	Generator	2	Diesel	100 hp
	Concrete Vibrators	1	Electric	20 A
	Concrete Pump	1	Diesel	400 hp
Superstructure				
	Tower Crane	1	Diesel	320 hp
	Crawler Crane	1	Diesel	362 hp
	Hoist	1	Electric	400 A
	Impact Wrenches	10	Air	N/A
	Compressor-Generator	1	Diesel	150 hp
	Hand Tools	10	Electric	20 A
	Bar Bending Machine	1	Gasoline	50 hp
	Concrete Vibrators	1	Electric	20 A
	Concrete Finishers	2	Gasoline	5 hp
	Concrete Pump	1	Diesel	400 hp
	Fireproofing Machine	5	Electric	N/A
	Generators	2	Diesel	400 hp
Exteriors				
	Hoist	1	Electric	400 A
	Hand Tools	3	Electric	20 A
Interiors				
	Hoist	1	Electric	400 A
	Hand Tools	10	Electric	20 A
	Welders	5	Electric	50 A

Note:
Conceptual equipment schedule was assumed to represent potential equipment that may be located on-site during each respective construction task.

DEMOLITION AND RENOVATION ACTIVITIES

Before the commencement of demolition or renovation activities, the portion of the buildings to be demolished or renovated would first be abated of any hazardous materials. A New York Citycertified asbestos investigator would inspect the buildings for asbestos-containing materials (ACM) and, if present, those materials would be removed by a NYSDOL-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by DEP, NYSDOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents, workers, and visitors. Depending on the extent and type of ACMs (if any), these agencies would be notified of the asbestos removal and may inspect the abatement area to ensure that work is being performed in accordance with applicable state and City regulations. Any activities with the potential to disturb lead-based paint (LBP) would be performed in accordance with the applicable OSHA regulation (including federal OSHA regulation 29 CFR 1926.62—*Lead Exposure in Construction*). In addition, any suspected poly-chlorinated biphenyls (PCB)-containing equipment (such as fluorescent light ballasts) that would be disturbed 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 interior of the building would be deconstructed to the floor plates and columns before these structural elements are demolished and removed. Netting around the exterior of the building would be used to prevent falling materials. Hand tools and excavators with hoe ram attachments would be used for the demolition of the existing structure and loaders would be used to load the debris into dump trucks. Demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities.

For renovation work, any economically salvageable materials are removed, then non-structural elements and interior partitions are disassembled. Then interior work, such as the construction of interior partitions, installation of lighting fixtures, and interior finishes (e.g., flooring, painting, etc.), would commence. A variety of handheld tools would generally be used for renovation.

EXCAVATION AND FOUNDATION

Excavation and foundation work would follow similar procedures for all buildings. First, sheeting would be installed 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 for reuse on any portion of the Development Site that needs fill. As the excavation becomes deeper, a temporary ramp may be built to provide access for the dump trucks to the excavation area. No blasting is anticipated for construction, but a rock splitter and rock-breaking equipment would be used to break down any rock encountered during excavation. Concrete trucks would be used to pour the foundation and the below-grade structures, including walls and columns. Excavation and foundation activities may also involve the use of drill rigs, generators, compressors, and/or 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

The superstructure work for all buildings would be similar and would include each of the proposed buildings' frameworks, such as beams, slabs, and columns. Construction of the interior structure—or core—of the buildings would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. A tower crane would first be brought onto each of the construction areas during the superstructure task and would be used to lift structural components and other large materials. The tower cranes would be on-site for both the superstructure and exterior façade stages of construction. Superstructure activities may also include the use of a hydraulic crane, bar bending machines, concrete pumps, concrete vibrators, 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.

EXTERIORS

The exterior façades of the proposed buildings would be installed during this stage of construction. This stage of construction would overlap with a portion of the superstructure work. The façade elements would arrive on trucks and typically be lifted into place for attachment by a crane.

INTERIORS, FINISHING, AND REHABILITATION

Interiors and finishing activities 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 buildings 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 exterior hoists, welders, delivery trucks, and a variety of small handheld tools.

Interiors and finishing would 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 buildings enclosed.

Renovations for existing spaces would include the above along with minor demolition.

NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

Table K-4 shows the estimated average daily numbers of workers and deliveries by calendar quarter for the duration of the construction period for Scenario 1. Under this scenario, the average number of workers throughout the entire construction period would be approximately 104 per day. The peak number of workers by calendar quarter would be approximately 220 per day, and would occur when renovations of the FHH Building and superstructure construction for the Senior Building would overlap during the fourth quarter of 2021. As shown in **Table K-4**, the peak level of construction workers would not persist throughout the entire construction period.

Table K-4
Scenario 1 Average Number of Daily Workers and Trucks by Year and Quarter

Year	2020		2021				2022				2023				2024			
Quarter	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	Avg.	Peak
Workers	33	100	110	115	125	**220**	120	200	**77**	15	35	88	133	87	100	100	104	220
Trucks	3	8	11	18	18	**23**	11	16	9	8	17	13	17	8	8	8	12	23

For truck trips, the average number of trucks throughout the entire construction period would be approximately 12 per day. The peak number of deliveries by calendar quarter would occur when renovations of the FHH Building and superstructure construction for the Senior Building would overlap during the fourth quarter of 2021, generating approximately 23 trucks per day. As shown in **Table K-4**, the peak level of construction truck trips would not persist throughout the entire 4-year construction period.

Table K-5 shows the estimated average daily numbers of workers and deliveries by calendar quarter for the duration of the construction period for Scenario 2. Under this scenario, the average number of workers throughout the entire construction period would be approximately 128 per day. The peak number of workers by calendar quarter would be approximately 240 per day, and would occur when renovations of the FHH Building, superstructure, and exterior construction activities would overlap during the first quarter of 2023. As shown in **Table K-5**, the peak level of construction workers would not persist throughout the entire construction period.

Table K-5
Scenario 2 Average Number of Daily Workers and Trucks by Year and Quarter

Year	2021			2022				2023				2024			
Quarter	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	Avg.	Peak
Workers	38	115	115	132	135	157	220	**240**	93	120	100	100	100	128	240
Trucks	4	13	16	25	**28**	20	23	25	11	11	8	8	8	15	28

For truck trips, the average number of trucks throughout the entire construction period would be approximately 15 per day. The peak number of deliveries by calendar quarter would occur when renovations of the FHH Building, excavation, and foundation construction activities would overlap during the second quarter of 2022, generating approximately 28 trucks per day. As shown in **Table K-5**, the peak level of construction truck trips would not persist throughout the entire 3-year construction period.

E. FUTURE WITHOUT THE PROPOSED ACTIONS

In the Future without the Proposed Actions (the "No Action" condition), it is assumed that the Applicant will discontinue operations at the TCC campus and sell the FHH and Development Sites. It is assumed that the FHH Building will remain and will be adaptively reused for residential use. The Development Site would be programmed with an L-shaped 20-story, mixed-use building with frontage along East 106th Street and Madison Avenue, including medical office space, retail space, and residential space.

F. FUTURE WITH THE PROPOSED ACTIONS

Construction activity would result in some temporary disruptions in the surrounding area. The following analysis describes the overall temporary effects on transportation, air quality, noise, vibration, as well as consideration of other technical areas, including land use and neighborhood character, socioeconomic conditions, community facilities and services, open space, historic and cultural resources, natural resources, and hazardous materials.

TRANSPORTATION

The construction transportation analysis assesses the potential for construction activities to result in significant adverse impacts to traffic, parking conditions, and transit and pedestrian facilities. The analysis is based on the peak worker and truck trips, which are developed based on several factors, including worker modal splits, vehicle occupancy and trip distribution, truck passenger car equivalents (PCEs), and arrival/departure patterns.

The following sections evaluate the potential for the peak construction worker and truck trips under both scenarios to result in significant adverse impacts to traffic, transit facilities, pedestrian elements (i.e., sidewalks, corners, and crosswalks), and parking.

TRAFFIC

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

Construction Trip-Generation Projections

The average worker and truck trip projections discussed above in “Number of Construction Workers and Materials Deliveries” 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 transportation-related impacts during construction, the combined daily workforce and truck trip projections in the peak quarter were used as the basis for estimating peak-hour construction trips. Construction is estimated to have a peak of approximately 220 workers and 23 truck deliveries per day for Scenario 1 and approximately 240 workers and 28 truck deliveries per day for Scenario 2.

As discussed above, in the No Action condition, the Development Site would be programmed with an L-shaped 20-story, including medical office space, retail space, and DUs. Construction of the proposed No Action project is estimated to have a peak of approximately 140 workers and 28 truck deliveries per day. As was done for the operational transportation analyses, the net increments between the With Action and No Action developments were assessed in order to evaluate the potential for significant adverse transportation impacts during construction. The estimates of construction activities are discussed further below.

Construction Worker Modal Splits and Vehicle Occupancy

Based on the latest available U.S. Census data (2000 Census data) for workers in the construction and excavation industry, it is anticipated that 58 percent of construction workers would commute to the Development Site using private autos at an average occupancy of approximately 1.11 persons per vehicle.

Peak Hour, Construction Worker Vehicle, and Truck Trips

As discussed above, construction would typically take place on weekdays from 7:00 AM to 3:30 PM, with the possibility of being extended to 6:00 PM to complete certain critical tasks. 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, 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*, the traffic analysis 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 (6:00 AM to 7:00 AM for arrival and 3:00

PM to 4:00 PM for departure on a regular day shift). Construction truck deliveries typically peak during the hour before each shift (25 percent), overlapping with construction worker arrival traffic. For Scenario 1, operational vehicle trips associated with the completed Phase 1 components were also considered alongside the maximum construction-related traffic increments of Phase 2.

Tables K-6 and K-7 present the net hourly trip projections for the peak construction quarter for Scenario 1 and Scenario 2, respectively. As shown, the maximum construction-related traffic increments would be approximately 33 and 38 PCEs between 3:00 PM and 4:00 PM for Scenario 1 and Scenario 2, respectively. For Scenario 1, the maximum construction-related traffic increments would occur during construction of Phase 1. These incremental construction PCEs would be well below the *CEQR Technical Manual* threshold of 50 vehicle trips; therefore, no further quantified analysis is warranted and construction under either scenario would not result in any significant adverse traffic impacts.

Table K-6
Net Peak Construction Vehicle Trip Projections—Scenario 1

	Auto Trips			Truck Trips			Total					
	Regular Shift			Regular Shift			Vehicle Trips			PCE Trips		
Hour	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6 AM–7 AM	33	0	33	-1	-1	-2	32	-1	31	31	-2	29
7 AM–8 AM	9	0	9	0	0	0	9	0	9	9	0	9
8 AM–9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM–10 AM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
10 AM–11 AM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
11 AM–12 PM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
12 PM–1 PM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
1 PM–2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM–3 PM	0	2	2	0	0	0	0	2	2	0	2	2
3 PM–4 PM	0	33	33	0	0	0	0	33	33	0	33	33
4 PM–5 PM	0	7	7	0	0	0	0	7	7	0	7	7
Daily Total	42	42	84	-5	-5	-10	37	37	74	32	32	64

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).

Table K-7
Net Peak Construction Vehicle Trip Projections—Scenario 2

	Auto Trips			Truck Trips			Total					
	Regular Shift			Regular Shift			Vehicle Trips			PCE Trips		
Hour	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6 AM–7 AM	38	0	38	-1	-1	-2	37	-1	36	36	-2	34
7 AM–8 AM	11	0	11	0	0	0	11	0	11	11	0	11
8 AM–9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM–10 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM–11 AM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
11 AM–12 PM	0	0	0	-1	-1	-2	-1	-1	-2	-2	-2	-4
12 PM–1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM–2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM–3 PM	0	2	2	0	0	0	0	2	2	0	2	2
3 PM–4 PM	0	38	38	0	0	0	0	38	38	0	38	38
4 PM–5 PM	0	9	9	0	0	0	0	9	9	0	9	9
Daily Total	49	49	98	-3	-3	-6	46	46	92	43	43	86

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).

PARKING

As described above, the net peak number of construction workers would be 80 per day for Scenario 1 and 100 per day during Scenario 2. It is anticipated that 58 percent of construction workers would commute to the Development Site by private autos at an average occupancy of approximately 1.11 persons per vehicle. The anticipated construction activities are therefore projected to generate a maximum parking demand of 42 parking spaces for Scenario 1 and 53 parking spaces for Scenario 2. Based on the parking analysis presented in Attachment H, "Transportation," it is expected that there could be a parking shortfall during peak construction activities for both scenarios. However, this potential shortfall would not be considered a significant adverse impact based on the *CEQR Technical Manual* criteria due to the availability of alternative modes of transportation in Manhattan. Therefore, the Proposed Actions would similarly not result in significant adverse parking impacts during construction for either scenario.

TRANSIT

Based on the 2000 U.S. Census data on workers in the construction and excavation industry, it is anticipated that approximately 32 percent of construction workers would commute to the Development Site via transit. With 80 percent of workers arriving or departing during the construction peak hours (6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM), the estimated number of net peak-hour transit trips during the peak construction period would be approximately 21 for Scenario 1 and 26 for Scenario 2. These incremental trips would be well below the *CEQR Technical Manual* threshold of 200 transit trips; therefore, construction under either scenario would not result in any significant adverse transit impacts.

PEDESTRIANS

As summarized above, 80 and 93 net average daily construction workers are projected for Scenarios 1 and 2, respectively. With 80 percent of these workers arriving or departing during the construction peak hours (6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM), the corresponding numbers of peak-hour pedestrian trips traversing the Project Area's sidewalks, corners, and crosswalks would be 64 for Scenario 1 and 75 for Scenario 2. These incremental trips are well below the *CEQR Technical Manual* threshold of 200 pedestrian trips; therefore, construction under either scenario would not result in any significant adverse pedestrian impacts.

AIR QUALITY

Emissions from on-site construction equipment and on-road construction-related vehicles, as well as dust-generating construction activities, have the potential to affect air quality. In general, much of the heavy equipment used in construction is powered by diesel engines that have the potential to produce relatively high levels of nitrogen oxides (NO_x) and PM emissions. Fugitive dust generated by construction activities is also a source of PM. Gasoline engines produce relatively high levels of CO. Since EPA mandates the use of ULSD fuel for all highway and non-road diesel engines, sulfur oxides (SO_x) emitted from construction activities would be negligible. Therefore, the four primary air pollutants of concern for construction activities are NO_2, particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and CO.

METHODOLOGY

The *CEQR Technical Manual* states that the significance of a likely consequence (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected. In terms of the magnitude of air quality impacts, an action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the NAAQS, or increase the concentration of $PM_{2.5}$ above the *de minimis* criteria, could have an adverse impact of significant magnitude. The factors identified above would then be considered in determining the overall significance of the potential impact.

On-Site Construction Activity Assessment

Worst-case periods of construction activity within the Project Area were assessed to determine the potential for significant adverse air quality impacts. To determine which construction periods constitute the worst-case periods for the pollutants of concern (i.e., PM, CO, NO_2), construction-related emissions were calculated throughout the duration of construction on an annual and peak day basis for $PM_{2.5}$. The pollutant $PM_{2.5}$ was selected for determining the worst-case periods for all pollutants as analyzed, because the ratio of $PM_{2.5}$ emissions to impact criteria is 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 (hp). CO emissions may have a somewhat different pattern but generally would also 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 residences, academic buildings, and publicly accessible open spaces, a worst-case year and worst-case short-term period were identified for dispersion modeling of annual and short-term (i.e., 24-hour, 8-hour, and 1-hour) averaging periods. Dispersion of the relevant air pollutants from the Development Site during these periods was then analyzed, and the highest resulting concentrations are presented in the following sections. Broader conclusions regarding potential concentrations during other periods, which were not modeled, are presented as well, based on the multi-year emissions profiles and the worst-case period results.

Duration and Intensity of Construction Activities

Construction activities would be noticeable in the surrounding area, as is the case with any large construction project. The overall construction period is anticipated to take approximately 46 and 37 months for Scenarios 1 and 2, respectively. However, the durations for the most intense construction activities in terms of air pollutant emissions (i.e., demolition, excavation, and foundation activities where the largest number of large non-road diesel engines such as excavators, rock splitters, and caisson drills would be employed) are anticipated to be 17 months for Scenario 1 (broken into two periods of 8 and 9 months for Phases 1 and 2) and 15 months for Scenario 2. Construction sources would move around the Development Site over the construction periods such that the air pollutant concentration increments due to construction would not persist in any single location.

The other stages of construction, including superstructure, exteriors, interiors and finishing, and site work would result in much lower air emissions since they would require few pieces of heavy-duty diesel equipment. Most of the equipment required for the latter stages of construction would have small engines and be dispersed vertically throughout the building, resulting in low pollutant concentration increments in adjacent areas. With the exception of site work, the latter stages of construction would not involve soil disturbance activities and therefore would result in lower dust emissions. Most of the interior and finishing activities would occur within an enclosed building where the work would be shielded from nearby sensitive receptors.

Based on the nature of the construction work, construction activities would not be considered out of the ordinary in terms of intensity; the construction activity levels would be typical of building construction in New York City that would require demolition, excavation, and foundation construction. Overall, emissions would likely be lower than a typical project due to the emission control measures implemented during construction (see “Emission Control Measures”).

Engine Emissions

The sizes, types, and number of construction equipment were estimated based on the construction activity schedule. Emission factors for NO_x, CO, PM_{10}, and $PM_{2.5}$ from on-site construction engines were developed using the EPA’s NONROAD2008 Emission Model (NONROAD). Since emission factors for concrete pumps are not available from either the EPA Motor Vehicle Emission Simulator (MOVES) emission model or NONROAD, emission factors specifically developed for this type of application were used.[1] With respect to trucks, emission rates for NO_X, CO, PM_{10}, and $PM_{2.5}$ for truck engines were developed using MOVES.

All personnel/material hoists and small hand tools would be electric and powered by either diesel generators or connected to grid power when it becomes available. Therefore, these engines would have no associated emissions.

On-Site Fugitive Dust

In addition to engine emissions, fugitive dust emissions from operations (e.g., excavation and loading excavated materials into dump trucks during the demolition and excavation tasks) were calculated based on EPA procedures delineated in AP-42 Table 13.2.3-1. It was estimated that the planned control of fugitive emissions would reduce PM emissions from such processes by 50 percent. To avoid the re-suspension of dust, a watering program would be implemented for all demolition, excavation, and transfer of loose materials to and from trucks.

Emission Control Measures

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

- *Dust Control.* To minimize fugitive dust emissions from construction activities, a fugitive dust control plan, including a robust watering program, would be required as part of contract specifications. 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; water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with a chemical suppressing agent, or covered. All measures required by the portion of the New York City Air Pollution Control Code regulating construction-related dust emissions would be implemented.

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[1] Concrete pumps are truck mounted and use the truck engine to power the pumps at high load. This application of truck engines is not addressed by the MOVES model, and since it is not a non-road engine, it is not included in the NONROAD model. Emission factors were obtained from a study which developed factors specifically for this type of activity. *FEIS for the Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development*, CPC–NYCDCP, November 16, 2007.

- *Idling Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time will be restricted to 3 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.

Construction activity would be subject to New York City Local Law 77, which requires the use of ULSD fuel and Best Available Technology (BAT) for equipment at the time of construction.[2]

- *Clean Fuel*. ULSD[3] fuel will be used exclusively for all diesel engines throughout the Development Site.
- *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 BAT 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 (OEM) or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board (CARB). Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.

In addition, the Applicant's (and/or a future developer's) contractor(s) would implement the following measures to the extent practicable to further reduce air pollutant emissions during construction:

- *Diesel Equipment Reduction*. Electrically powered equipment would be preferred over diesel-powered and gasoline-powered versions of that equipment to the extent practicable. Equipment that would use the grid power in lieu of diesel engines includes, but may not be limited to, hoists, the tower crane that would be employed during construction, 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 (HC). All diesel-powered non-road construction equipment with a power rating of 50 hp or greater would meet at least the Tier 3[4] emissions standard. All non-road diesel-powered engines rated less than 50 hp would meet at least the Tier 2 emissions standard.

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[2] New York City Administrative Code § 24-163.3, adopted December 22, 2003, also known as Local Law 77, requires that any diesel-powered non-road engine with a power output of 50 hp or greater shall be powered by ULSD, and utilize the BAT for reducing the emission of pollutants, primarily PM and secondarily NO_x. This requirement applies to all City-owned non-road diesel vehicles and engines and any privately owned diesel vehicles and engines used on construction projects funded by the City.

[3] EPA required a major reduction in the sulfur content of diesel fuel intended for use in locomotive, marine, and non-road engines and equipment, including construction equipment. As of 2015, the diesel fuel produced by all large refiners, small refiners, and importers must be ULSD fuel. Sulfur levels in non-road diesel fuel are limited to a maximum of 15 parts per million.

[4] The first federal regulations for new non-road diesel engines were adopted in 1994, and signed by EPA into regulation in a 1998 Final Rulemaking. The 1998 regulation introduces Tier 1 emissions standards for all equipment 50 hp and greater and phases in the increasingly stringent Tier 2 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

Overall, this emissions control program is expected to reduce air pollutant emissions significantly during construction.

Analysis Periods

The resulting emission factors were used for the emissions and dispersion analyses. Average annual (running 12-month averages) and peak-day $PM_{2.5}$ engine emissions profiles for the entire duration of the construction were prepared by multiplying the above emission rates by the number of engines, the work hours per day (it was assumed that construction would operate for an 8-hour work day), and fraction of the day each engine would be expected to work during each month.

Dispersion Modeling

Based on the $PM_{2.5}$ construction emissions profiles developed using the conceptual construction schedule, the average number of daily construction workers and trucks, and construction equipment estimates, one peak short-term and annual period were selected for modeling at the Development Site for both Scenarios 1 and 2. The worst-case short-term and annual periods for Scenario 2 (the month of February 2022 and the 12-month period from February 2022 to January 2023) are predicted to result in greater emissions than the time periods for Scenario 1 (the month of January 2023 and the 12-month period from October 2022 to September 2023). Therefore, the worst-case time periods for Scenario 2 were selected for modeling. The dispersion of pollutants during the worst-case short-term and annual periods was then modeled in detail to predict resulting maximum concentration increments from construction activity and total concentrations (including background concentrations) in the surrounding area.

Although the modeled results are based on construction scenarios for specific sample periods, conclusions regarding other periods were derived based on the fact that lower concentration increments from construction would generally be expected during periods with lower construction emissions. Emissions during other periods would be lower than the peak emissions. However, since the worst-case short-term results may often be indicative of local impacts, similar maximum local impacts may occur at any stage at various locations but would not persist in any single location, since emission sources would not be located continuously at any single location throughout construction. Equipment would move throughout the Development Site as construction progresses.

Source Simulation

For the short-term model scenarios, predicting concentration averages for periods of 24 hours or less, all stationary sources, such as compressors, generators, or concrete trucks, which idle in a single location while unloading, were simulated as point sources. Other engines, which would move around the site on any given day, were simulated as area sources for the 24-hour and 8-hour periods. These engines were also simulated as point sources for the 1-hour period. For periods of 8 hours or less (less than the length of a shift), it was assumed that all engines would be active simultaneously. With the exception of tower cranes, all sources would move around the site throughout the year and were therefore simulated as area sources in the annual analyses.

Receptor Locations

Receptors (locations in the model where concentrations are predicted) were placed along the sidewalks surrounding the Development Site on both sides of the street at locations that would be publicly accessible, at residential and other sensitive uses at both ground-level and elevated locations (e.g., residential windows), and at open spaces. In addition, a ground-level receptor grid

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

was placed to enable extrapolation of concentrations throughout the entire area at locations more distant from the Development Site.

Receptors were place on the FHH Building façades directly adjacent and facing the Development Site. In Scenario 1, Cohen Building and the Annex would be occupied during Phase 2 of construction and would also have façades directly adjacent and facing the Development Site. Potential concentrations predicted for the worst-case short-term and annual periods for Scenario 2 (predicted to result in greater emissions than the time periods for Scenario 1) at the FHH Building façades are conservatively representative of potential concentrations on the Cohen Building and the Annex façades.

Background Concentrations

Where needed to determine potential air quality impacts from construction activities, background ambient air quality data for criteria pollutants were added to the predicted off-site concentrations. The background data were obtained from nearby DEC monitoring stations that best represented the area surrounding the site. Those monitoring years were 2013 through 2017. These background concentrations are provided below in **Table K-8**. Short-term concentrations (i.e., 24- and 8-hour averages) represent the second-highest concentration of the 5-year data set, with the exception of PM_{10}, which is based on 3 years of data (2015–2017), consistent with current DEP guidance. The annual concentration represents the maximum value of the - year data set. For $PM_{2.5}$, background concentrations are not considered, since impacts are determined on an incremental basis only.

Table K-8
Background Pollutant Concentrations

Pollutant	Monitoring Station	Averaging Period	Background Concentration (µg/m³)	Ambient Standard (µg/m³)
NO_2	IS 52, Bronx	Annual	38.9	100
CO	CCNY, Manhattan	1-hr	2,634	40,000
		8-hr	1,718	10,000
PM_{10}	Division Street, Manhattan	24-hr	44	150
$PM_{2.5}$	JHS 45, Manhattan	24-hr	19.4	35
Source: New York State Air Quality Report Ambient Air Monitoring System, NYSDEC, 2013–2017.				

On-Road Sources

Traffic increments during construction under the Proposed Actions would not exceed any thresholds defined in the *CEQR Technical Manual* for traffic analysis; it is assumed that the maximum hourly increase in traffic volume due to the Proposed Actions would not exceed the CO or the PM emission screening thresholds defined in the *CEQR Technical Manual* (170 auto trips for peak hour trips at nearby intersections in the study area for CO and PM emission equivalent to 12 to 23 heavy-duty vehicles for peak hour trips, depending on roadway type.) Therefore, a standalone mobile-source analysis would not be required.

However, emissions from on-site construction equipment and on-road construction-related vehicles may contribute to concentration increments concurrently. Therefore, on-road emissions sources located adjacent to the Development Site were included with the on-site 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 will be computed using the EPA mobile source emissions model, MOVES2014a.[5] 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, and various other factors that influence emissions, such as inspection maintenance programs. The inputs and use of MOVES incorporate the most current guidance available from NYSDEC.

FUTURE WITHOUT THE PROPOSED ACTIONS

In the No Action condition, air quality conditions are anticipated to be similar to existing conditions. Land uses are expected to remain generally the same in the surrounding neighborhood. Since air quality regulations mandated by the Clean Air Act are anticipated to maintain or improve air quality in the region, it can be expected that air quality conditions in the No Action condition would be similar to those that presently exist. The proposed noise-reduction and other measures that are discussed throughout this attachment would not apply in the No Action condition.

FUTURE WITH THE PROPOSED ACTIONS

As described above, the worst-case short-term and annual periods for Scenario 2 (the month of February 2022 and the 12-month period from February 2022 to January 2023) are predicted to result in greater emissions than the time periods for Scenario 1 (the month of January 2023 and the 12-month period from October 2022 to September 2023). Therefore, the worst-case time periods for Scenario 2 were selected for modeling. Maximum predicted concentrations during the representative worst-case construction periods for the Proposed Actions are presented in **Table K-9**. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations from construction under the Proposed Actions were added to a background value that accounts for existing pollutant concentrations from other nearby sources. As shown in **Table K-9**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS.

The maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable CEQR *de minimis* thresholds in the 24-hour[6] and annual averaging periods.

As discussed above, the anticipated construction schedule assumed that the highest potential intensity of construction activities within each stage of construction would occur throughout the duration of each stage. This results in more intensive periods of construction than may occur as stages and activities may not overlap. Emissions from the other less intensive construction stages would be less than the emissions during the peak construction period. The resulting concentrations from the non-peak periods of construction are expected to be less than the concentrations presented in **Table K-9**. Therefore, there would be no significant adverse air quality impacts as a result of the construction under the Proposed Actions.

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[5] EPA MOVES, User Guide for MOVES2014a, November 2015.

[6] The CEQR 24-hour $PM_{2.5}$ *de minimis* criterion is equal to half the difference between the 24-hour background concentration (23.9 µg/m^3) and the 24-hour standard (35 µg/m^3).

Table K-9
Maximum Pollutant Concentrations

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	Criterion
NO_2	Annual	µg/m^3	4.7	38.9	43.6	100 [2]
CO	1-hour	µg/m^3	840	2,634	3,474	40,000 [2]
	8-hour	µg/m^3	177	1,718	1,895	10,000 [2]
PM_{10}	24-hour	µg/m^3	16.5	44	59.4	150 [2]
$PM_{2.5}$	24-hour	µg/m^3	5.13	19.4	N/A	7.8 [3]
	Annual—Local	µg/m^3	0.26	N/A	N/A	0.3 [4]
	Annual—Neighborhood	µg/m^3	0.01	N/A	N/A	0.1 [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 Attachment I, "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

Potential impacts on community noise levels during construction could result from noise due to construction equipment operation and construction and delivery vehicles traveling to and from the Development Site. Noise and vibration levels at a given location are dependent on the type 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 Development 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 as described below. The most noise-intensive construction activities would not occur every day, and would not occur continuously on days that they occur. During hours when the loudest pieces of construction equipment are not in use, receptors would experience lower construction noise levels. Construction noise levels would fluctuate during the construction period at each receptor, with the greatest levels of construction noise occurring for limited periods during construction. The most substantial construction noise sources are expected to be impact equipment such as jackhammers and earth-moving equipment including excavators, loaders, and dump 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 would be developed and implemented that may include source controls, path controls, and receiver controls.

CONSTRUCTION NOISE ANALYSIS FUNDAMENTALS

Construction activities result in increased noise levels as a result of (1) the operation of construction equipment on-site; and (2) the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the roadways to and from the Development Site. The effect of each of these noise sources was evaluated.

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

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

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

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

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 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 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, 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 be considered significant.

- 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 be considered a significant increase.
- 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 incremental significant impact threshold would be 3 dBA $L_{eq(1)}$.

CONSTRUCTION NOISE MODELING

Noise effects from construction activities were evaluated using the CadnaA model, a computerized model developed by DataKustik for noise prediction and assessment. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment) 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 $L_{eq(1)}$ 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:

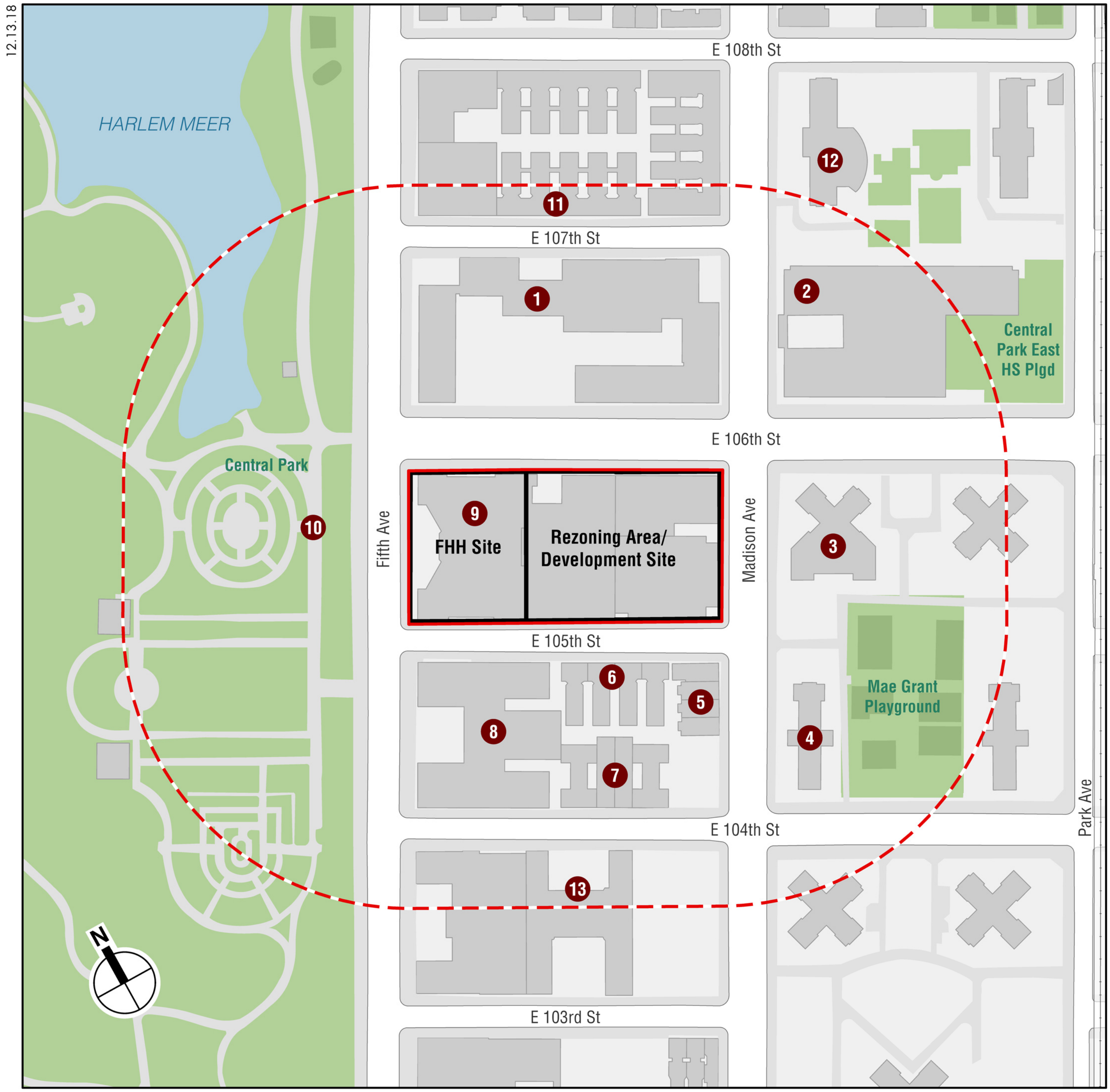
1. Select analysis hours for cumulative on-site equipment and construction truck noise analysis. The 7 AM hour was selected as the analysis hour because this would be the hour when the highest number of truck trips to and from the construction site would overlap with on-site equipment operation.
2. Select receptor locations for cumulative on-site equipment and construction truck noise analysis. Selected receptors were representative of open space, residential, or other noise-sensitive uses potentially affected by the construction of the proposed project during operation of on-site construction equipment and/or along routes taken to and from the Development Site by construction trucks. In addition to existing receptors outside the proposed Rezoning Area, the construction noise analysis considers the potential effects of construction noise at noise-sensitive uses within the Rezoning Area that may continue to operate during part of the construction period and newly introduced noise receptors that would be completed and occupied during continued construction of remaining project elements.
3. Establish existing noise levels at selected receptors. Noise levels were measured at several at-grade locations, and calculated for the other noise receptor locations included in the analysis. Figure J-1 in Attachment J, "Noise," shows the noise measurement locations. Existing noise levels at noise receptors other than the selected noise measurement locations were established using the CadnaA model along with existing condition traffic information.

4. Establish worst-case noise analysis periods under the projected construction phasing 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. Separate construction noise analyses were conducted for each of the Scenario 1 and Scenario 2 preliminary construction schedules. The analysis for each of the construction Scenarios included different receptors, depending on which construction Scenario would present the greatest potential for construction noise effects at each receptor. The selected time periods and included receptors for each Scenario are described below in the “Analysis Periods” section.
5. Calculate construction noise levels for each analysis period at each receptor location. Given the on-site equipment and construction truck trips that are expected during each of the analysis periods, and the location of the equipment, which was based on construction logistics diagrams and construction truck and worker vehicle trip assignments, a CadnaA model file for each analysis period was created. All model files included 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 site, as described below.
6. 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.
7. Establish construction noise duration. For each receptor, the noise level increments in each analysis period were examined to determine the duration during construction that the receptor would experience substantially elevated noise levels.
8. Compare noise level increments with impact criteria as set forth in the *CEQR Technical Manual*. At each receptor, based on the magnitude and duration of predicted noise level increases due to construction, a determination of whether the proposed project would have the potential to result in significant adverse construction noise effects was made.

NOISE RECEPTOR LOCATIONS

The Development Site is bounded by the FHH Building to the west, East 105th Street to the south, East 106th Street to the north, and Madison Avenue to the east. The area surrounding the Development Site is a mix of predominantly residential, public/institutional facilities, and educational uses. Receptor locations 1 to 16 were selected to represent buildings or noise-sensitive open space locations close to the Development Site for the construction noise analysis. 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. The receptor sites selected for detailed analysis are representative locations where maximum construction noise generated by the Proposed Actions could be expected.

The existing noise receptors closest to the proposed construction are shown in **Figure K-2** and listed in **Table K-10**.



Project Area

Boundary between FHH Site and Rezoning Area/Development Site

Study Area (400-foot perimeter)

Construction Noise Receptor

0 200 FEET

Construction Noise Receptors

Figure K-2

Table K-10
Construction Noise Receptors

Construction Noise Receptor Number	Receptor(s)	Land Use(s)
1	Lakeview Apartments; Residences on the east side of Fifth Avenue between East 106th Street and East 107th Street at 1250 Fifth Avenue; 24-story building	Residential
2	Central Park East High School; Educational Building on East 106th Street between Madison and Park Avenues at 1573 Madison Avenue; four-story building	Educational
3	Carver Houses; Residences on East 106th Street between Madison and Park Avenues at 50 East 106th Street; 15-story building	Residential
4	Carver Houses; Residences on the east side of Madison Avenue and on the north side of East 105th Street at 1545 Madison Avenue; 15-story building	Residential
5	Residences on the west side of Madison Avenue between East 104th Street and East 105th Street at 1544 to 1550 Madison Avenue; five-story buildings	Residential
6	Residences on East 105th Street between Madison and Fifth Avenues at 16 to 26 East 105th Street; six-story buildings	Residential
7	Reece School and residential uses on East 104th Street between Madison and Fifth Avenues at 21 to 29 East 104th Street; six-story buildings	Educational/ Residential
8	El Museo del Barrio; Museum on Fifth Avenue between East 104th and East 105th Streets at 1230 Fifth Avenue; six-story building	Public Facilities & Institutions
9	FHH Building; Health Center on Fifth Avenue between East 105th and East 106th Streets at 1249 Fifth Avenue; 11-story building	In-patient Medical
10	Central Park	Open Space & Outdoor Recreation
11	Residences on north side of East 107th Street between Madison and Fifth Avenues at 21 East 107th Street; six-story buildings	Residential
12	Carver Houses; Residences on Madison Avenue between East 107th and East 108th Streets at 1595 Madison Avenue; 20-story building	Residential
13	Museum of the City of New York and Central Park East II (Opus 118 Harlem School of Music); Educational Building on East 104th Street between Madison and Fifth Avenues at 1 East 104th Street; 5-story buildings	Educational/ Public Facilities & Institutions
14	Cohen Building	In-patient Medical
15	Annex Building	In-patient Medical
16	Senior Building	Residential

NOISE ANALYSIS PERIODS

The detailed construction noise analysis estimates construction noise levels based on projected activity and equipment usage for various phases of construction on the projected development sites. Separate construction noise analyses were conducted for each of the Scenario 1 and Scenario 2 preliminary construction schedules. The analysis for each of the construction Scenarios included different receptors, depending on which construction Scenario would present the greatest potential for construction noise effects at each receptor.

The analysis for receptors outside of the Rezoning Area assumes that construction would proceed under the Scenario 2 schedule, since this presents the greatest potential for construction noise effects at these receptors due to maximum simultaneous construction. The analysis for the existing Cohen and Annex Buildings and the proposed Senior Building assumes that construction would proceed under the Scenario 1 schedule, since this schedule would see these buildings occupied during construction on adjacent parcels. The analysis for the FHH building receptors considered both schedules.

Duration of construction noise is assessed based on the preliminary construction schedule (see **Tables K-1** and **K-2**).

Scenario 1

The Scenario 1 construction noise analysis included eight time periods were selected for detailed construction noise analysis. These time periods were selected to capture each major construction task (i.e., excavation/foundation work, superstructure work, interior fit-out work, etc.) during each construction Phase (i.e., Phase 1 and Phase 2). These are the time periods with the potential to result in the maximum construction noise at the included receptor locations. Each analysis time period conservatively represents 3 to 18 months of time based on the duration of activities that would be underway during the time period. The eight time periods and applicable receptors selected for analysis under Scenario 1 are shown in **Table K-11**.

Table K-11
Scenario 1 Construction Noise Analysis Periods

Analysis Period	Construction Activities	Analyzed Receptors
January, 2020	Phase 1 Demolition	14, 15
May, 2020	Phase 1 Excavation	14, 15
August, 2020	Phase 1 Foundation Construction	14, 15
September, 2020	Phase 1 Superstructure Construction	14, 15
December, 2020	Phase 1 Exteriors and Interiors Construction	14, 15
July, 2021	Phase 2 Demolition	9, 16
September, 2021	Phase 2 Excavation	9, 16
November, 2021	Phase 2 Excavation and Foundation Construction	9, 16
January, 2022	Phase 2 Foundation Construction	9, 16
May, 2022	Phase 2 Superstructure Construction	9, 16
February, 2023	Phase 2 Exteriors and Interiors Construction	9, 16

Scenario 2

The Scenario 2 construction noise analysis included seven time periods were selected for detailed construction noise analysis. These time periods were selected to capture each major construction task (i.e., excavation/foundation work, superstructure work, interior fit-out work, etc.) during construction of the Scenario 2 development. These are the time periods with the potential to result in the maximum construction noise at the surrounding receptor locations. Each analysis time period conservatively represents 3 to 14 months of time based on the duration of activities that would be underway during the time period. The seven time periods and applicable receptors selected for analysis under Scenario 2 are shown in **Table K-12**.

Table K-12
Scenario 2 Construction Noise Analysis Periods

Analysis Period	Construction Activities	Occupied Receptors
September, 2020	Demolition	1-8, 10-13
December, 2020	Excavation	1-8, 10-13
February, 2021	Excavation, Foundation Construction	1-8, 10-13
July, 2021	Foundation Construction	1-8, 10-13
January, 2022	Superstructure Construction	1-13
October, 2022	Exterior Construction	1-13
June, 2023	Interior Construction	1-13

NOISE MEASUREMENT RESULTS

Equipment Used During Noise Survey

Measurements were performed using a Brüel & Kjær Sound Level Meter (SLM) Type 2260, Brüel & Kjær ½-inch microphone Type 4189, and a Brüel & Kjær Sound Level Calibrator Type 4231. The Brüel & Kjær SLM is a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). The SLM has a laboratory calibration date within 1 year of the date of the measurement, as is standard practice. The microphone was mounted at a height of approximately 5 feet above the ground surface on a tripod and at least approximately 5 feet away from any large reflecting surfaces. The SLM was calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements were made on the A-scale (dBA). The data were digitally recorded by the SLM and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, L_{90}, and ⅓ octave band levels. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

Noise Survey Results

Noise levels during the AM (i.e., 7 AM to 9 AM) and midday (MD) (i.e., 12 PM to 2 PM) analysis hours were measured at each of four noise survey locations to determine baseline noise levels at receptors in the vicinity of the Development Site. The lowest baseline noise levels at each of the noise survey locations are shown in **Table K-13**. Full noise survey results are shown in Attachment J, "Noise." At all noise measurement locations, the dominant existing noise source was vehicular traffic on the adjacent roadways.[7]

Table K-13
Existing Noise Levels in dBA

Site	Measurement Location1	Time Period	L_{eq}	L_{10}
1	Madison Avenue between East 105th and East 106th Streets[1]	AM	68.6	70.6
		MD	65.2	68.4
2	East 106th Street between Madison Avenue and Fifth Avenue[1]	AM	67.5	69.7
		MD	68.1	70.0
3	East 105th Street between Madison Avenue and Fifth Avenue[1]	AM	63.8	64.8
		MD	66.7	66.0
4	Fifth Avenue between East 105th and East 106th Streets[2]	AM	71.3	74.9
		MD	69.0	72.5

Notes:
[1] Field measurements are the same as the existing survey locations shown in Table J-3 in Attachment J, "Noise"
[2] Field measurements were performed by AKRF, Inc. on May 30, 2018

In terms of CEQR noise exposure guidelines (shown in Table J-2 in Attachment J, "Noise"), existing noise levels at site 3 are in the "acceptable" category, and existing noise levels at sites 1, 2, and 4 are in the "marginally acceptable" category.

NOISE REDUCTION MEASURES

Construction 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

[7] Detailed Noise Survey Results are presented in Attachment J " Noise"

Law 113) for construction noise control measures. Additionally, the Applicant has committed to additional noise control measures beyond the minimum required by code in order to reduce potential noise effects on the surrounding receptors. These measures would bind future developers of property within the Project Area as well. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the New York City Noise Code as is called for in Chapter 22, "Construction," of the *CEQR Technical Manual*. These measures would include a variety of source and path controls.

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

- Equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code and Table 22-1 of the *CEQR Technical Manual* would be utilized from the start of construction. Additionally, the applicant has committed to lower noise emission limits for specific pieces of equipment (i.e., cranes, compressors, generators, hoists, and concrete vibrators). **Table K-14** 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, including a quieter project-specific noise emission limits for select types of equipment.
- Pile installation would be conducted by means of drilling rather than impact driving;
- As early in the construction period as logistics would allow (likely by the start of the superstructure phase of construction pending service provisions from Con Edison), 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 feasible and practicable, the Development Site would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than 3 minutes at the Development Site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the New York City Administrative Code; and
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

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

- 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
- Concrete operations including pumps and trucks would occur within a plywood enclosure along East 106th Street;
- Hoist and crane operations would be located along Madison Avenue to maximize distance to receptors with low existing noise levels; and
- Noise barriers constructed from plywood surrounding the Development Site would be utilized to provide shielding. The barriers would be at least 8 feet tall, except along Madison Avenue, where the barriers would be 12-foot tall including a cantilever towards the Development Site. Where logistics allow, truck deliveries would take place behind these barriers.

Table K-14
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	NYCDEP L_{max} Noise Level Limit at 50 feet[1]	Project-Specific L_{max} Noise Level Limit at 50 feet
Backhoe / Loader	80	
Bar Bender	80	
Chipping Gun / Rivet Buster	85	
Compactor	80	
Compressor	80	70
Concrete Finisher	67[2]	
Concrete Pump	82	
Concrete Mixer Truck	85	
Concrete Vibrator	80	70
Cranes (Mobile)	85	75
Cranes (Tower)	85	75
Delivery Truck	84	
Drill Rig[3]	85	
Dump Truck	84	
Excavator	85	
Fireproofing Machine	56[2]	
Generator	82	72
Hoist	N/A	65
Impact Wrench	76[2]	
Jack Hammer	85	
Pump	77	
Welding Machine	73	

Source:
[1] *Rules for Citywide Construction Noise Mitigation*, Chapter 28, DEP, 2007.
[2] Manufacturer's Specifications or previously approved Noise Certificaiton,
[3] The proposed project would use drilled piles, which is a substantially quieter method (i.e., approximately 10 dBA quieter) than impact pile driving,

MOBILE SOURCE CONSTRUCTION NOISE ANALYSIS

Throughout the construction period, vehicles (construction-related trucks and vehicles driven by workers) would travel near the Development Site. Most of these vehicles are expected to use Fifth Avenue and Madison Avenue, which are already heavily trafficked roadways. As described above, the amount of traffic generated by the construction of the proposed buildings would be low compared with existing traffic volumes on major feeder streets in the neighborhood. Additionally, the construction-related vehicles would be distributed amongst the different routes to and from the Development Site. Accordingly, construction-generated traffic on roadways to and from the Development Site would not have the potential to result in significant adverse construction noise impacts at locations away from the Development Site (i.e., at locations other than the areas specified above as receptors).

CONSTRUCTION NOISE ANALYSIS RESULTS

Using the methodology described above, and considering the noise abatement measures from source and path controls specified above, cumulative noise analyses were performed to determine maximum 1-hour equivalent ($L_{eq(1)}$) noise levels that would be expected during each of the construction noise analysis periods for each construction Scenario at each of the noise receptor locations. This resulted in a predicted range of peak hourly construction noise levels throughout the construction period. The receptor locations include 15 existing locations as well as the Senior Building that could be completed and occupied prior to the completion of construction under Scenario 1.

Scenario 1

The results of the detailed construction noise analysis are summarized in **Table K-15** and the complete construction noise analysis is presented in **Appendix 3**.

Table K-15
Scenario 1 Construction Noise Analysis Results in dBA

Receptor	Location	Existing L_{EQ}		Total L_{EQ}		Change in L_{EQ}	
		Min	Max	Min	Max	Min	Max
9	FHH Building	60.5	68.6	60.5	82.5	0.0	22.0
14	Cohen Building	60.5	65.3	60.5	82.0	0.0	21.5
15	Annex Building	60.5	61.8	60.5	83.8	0.0	23.3
16	Senior Building	—	—	60.5	83.2	—	—

Consideration of the intensity and duration of construction-related noise for each receptor is provided below.

Cohen Building

At the existing Cohen Building, which is located at the corner of Madison Avenue and East 106th Street, represented by Receptor 14, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison Avenue and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to low 80s dBA, resulting in noise level increases of up to approximately 21 dBA during the most noise-intensive construction activity, i.e. demolition, which would have a duration of approximately 2 months. The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at these receptors would be in the low 60s 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” range.

During the construction of the Proposed Project, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition. These activities would occur at times over the course of approximately 2 months. Consequently, the maximum noise levels would not persist throughout the construction period. Excavation at the Senior Building would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 20 dBA and total noise levels in the low 70s to low 80s dBA for an additional 3 months. Foundation construction at the Senior Building would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 16 dBA and total noise levels in the low to mid-70s dBA for an additional 3 months. Superstructure and interior fit-out construction for the Senior Building would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 13 dBA and total noise levels in the mid-60s to mid-70s dBA for an additional 10 months. These noise levels are worst-case predictions based on conservative assumptions of simultaneous construction equipment operating at the Development Site. The construction schedule, phasing, logistics, and equipment lists are conservative estimates made in the absence of detailed means and methods information. If construction were to occur with fewer pieces of equipment or during times when not all equipment would operate simultaneously, noise levels would be lower.

Based on field observations, this building appears to have insulated glass windows and a means of alternate ventilation (i.e., air conditioning), which would be expected to result in approximately 25 dBA window-wall attenuation. Consequently, maximum interior $L_{10(1)}$ noise levels at times during Phase 1 demolition, excavation, and foundation construction activity (approximately 8 months) would be in the high 50s dBA. Compared with the 45 dBA threshold recommended for in-patient medical use according to CEQR noise exposure guidelines, the estimated construction noise levels would be approximately 14 dBA greater. Interior noise levels during the subsequent 3 months of Phase 1 superstructure construction would be approximately 6 dBA greater than the acceptable in-patient medical use threshold, and during the final 7 months of Phase 1 exterior façade and interior fit-out construction, interior noise levels would be up to approximately 1 dBA greater than the acceptable in-patient medical use threshold.

Because the maximum estimated levels of construction noise would occur temporarily, construction noise would generally not occur during night-time hours when residences are most sensitive to noise, and predicted interior noise levels during the latter 7 months of Phase 1 construction would be within approximately 1 dBA of the range considered acceptable for in-patient medical and residential use according to CEQR criteria, noise resulting from construction would not rise to the level of a significant adverse impact at this receptor.

Annex Building

At the existing Annex Building, which is located in the midblock, represented by Receptor 15, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison Avenue and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-80s dBA, resulting in noise level increases of up to approximately 23 dBA during the most noise-intensive construction activity, i.e. demolition and excavation at the Senior Building, which would have a combined duration of approximately 5 months. The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at these receptors would be in the low 60s 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” range.

During the construction of the Proposed Project, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition. These activities would occur at times over the course of approximately 2 months. Consequently, the maximum noise levels would not persist throughout the construction period. Foundation construction at the Senior Building would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 20 dBA and total noise levels up to approximately 80 dBA for an additional 3 months. Superstructure and interior fit-out construction would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 16 dBA and total noise levels in the mid-60s to mid-70s dBA for an additional 10 months. These noise levels are worst-case predictions based on conservative assumptions of simultaneous construction equipment operating at the Development Site. The construction schedule, phasing, logistics, and equipment lists are conservative estimates made in the absence of detailed means and methods information. If construction were to occur with fewer pieces of equipment or during times when not all equipment would operate simultaneously, noise levels would be lower.

Based on field observations, this building appears to have insulated glass windows and a means of alternate ventilation (i.e., air conditioning), which would be expected to result in approximately 25 dBA window-wall attenuation. Consequently, maximum interior $L_{10(1)}$ noise levels during worst-case Phase 1 demolition and excavation activity (approximately 5 months) would be in the low 60s dBA. Compared with the 45 dBA threshold recommended for in-patient medical use according to CEQR noise exposure guidelines, the estimated construction noise levels would be approximately 16 dBA greater. Interior noise levels during the 3 months of Phase 1 foundation construction would be approximately 12 dBA greater than the acceptable in-patient medical use threshold, interior noise levels during the subsequent 3 months of Phase 1 superstructure construction would be approximately 9 dBA greater than the acceptable in-patient medical use threshold, and during the final 7 months of Phase 1 exterior façade and interior fit-out construction, interior noise levels would be up to approximately 5 dBA greater than the acceptable in-patient medical use threshold.

Because the maximum estimated levels of construction noise would occur temporarily, construction noise would generally not occur during night-time hours when residences are most sensitive to noise, and predicted interior noise levels during the latter 7 months of Phase 1 construction would be within approximately 5 dBA of the range considered acceptable for in-patient medical and residential use according to CEQR criteria, noise resulting from construction would not rise to the level of a significant adverse impact at this receptor.

FHH Building

At the FHH Building, located along Fifth Avenue between East 105th and East 106th Streets, represented by Receptor 9, the existing noise levels range from the low to high 60s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above grade (i.e., floor of the building). Under the preliminary Scenario 1 construction schedule, renovations would be complete at the FHH Building during Phase 1 of construction, and it could be occupied during Phase 2 construction and consequently would have the potential to experience construction noise during this time.

At this building, construction is predicted to produce noise levels in the high 50s to low 80s dBA, resulting in noise level increases of up to approximately 22 dBA during the most noise-intensive stages of construction (i.e. the overlap between excavation and foundation construction at the PACE Center and residential tower), which would have a duration of approximately 2 months. The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at these receptors would be in the low 60s 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” range.

During the construction of the Proposed Project, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition, excavation, and foundation construction. These activities would occur for approximately 9 months. Consequently, the maximum noise levels would not persist throughout the construction period. Superstructure construction for the PACE Center and residential tower would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 14 dBA and total noise levels in the mid-60s to mid-70s dBA for an additional 10 months. Interior fit-out construction for the PACE Center and residential tower would also result in exceedances of CEQR screening thresholds at times, including noise level increments up to approximately 10 dBA and total noise levels in the mid-60s to low 70s dBA for an additional 18 months. These noise levels are worst-case predictions based on conservative assumptions of simultaneous construction equipment operating at the Development Site. The construction schedule, phasing, logistics, and equipment lists are conservative estimates made in the absence of detailed means and methods information. If construction were to occur with fewer pieces of equipment or during times when not all equipment would operate simultaneously, noise levels would be lower.

Based on field observations, the FHH Building appears to have insulated glass windows and an alternative means of ventilation (i.e., through-wall air conditioners and mechanically ducted air), which would be expected to provide approximately 25 dBA window-wall attenuation. Consequently, maximum interior $L_{10(1)}$ noise levels during construction would be in the high 50s dBA. Compared with the 45 dBA threshold recommended for in-patient medical use according to CEQR noise exposure guidelines, the estimated construction noise levels would be approximately 14 dBA greater. Interior noise levels during the 10 months of Phase 2 superstructure construction would be approximately 6 dBA greater than the acceptable in-patient medical use threshold, and during the final 18 months of Phase 2 exterior façade and interior fit-out construction, interior noise levels would be up to approximately 1 dBA greater than the acceptable in-patient medical use threshold.

Because the maximum estimated levels of construction noise would occur temporarily, construction noise would generally not occur during night-time hours when residences are most sensitive to noise, and predicted interior noise levels during the latter 18 months of Phase 2 construction would be within approximately 1 dBA of the range considered acceptable for in-patient medical and residential use according to CEQR criteria, noise resulting from construction would not rise to the level of a significant adverse impact at this receptor.

Senior Building

The proposed Senior Building located at the corner of Madison Avenue and East 105th and Street, represented by Receptor 16, would be completed during Phase 1 of construction, and it could be occupied during Phase 2 construction and consequently would have the potential to experience construction noise during this time.

At the newly constructed Senior Building, Phase 2 construction would result in $L_{10(1)}$ noise levels ranging from the low 60s to low 80s dBA with a maximum noise exposure of approximately 85 dBA. Beyond the operational window-wall attenuation requirements established in Table J-7 of Attachment J, "Noise," if the Senior Building would be completed and occupied during construction of the PACE Center and residential tower, the Applicant commits to ensuring that the façades of the Senior Building that face construction (i.e., north and west façades) would provide at least 31 dBA window-wall attenuation as well as an alternate means of ventilation. Consequently, maximum interior $L_{10(1)}$ noise levels during worst-case demolition, excavation and foundation activity during Phase 2 would be in the mid-50s dBA up to approximately 9 dBA greater than the acceptable threshold for residential use, maximum interior $L_{10(1)}$ noise levels during 10 months of Phase 2 superstructure would be in the mid-40s dBA up to approximately 2 dBA greater than the acceptable threshold for residential use, and maximum interior $L_{10(1)}$ noise levels during the remaining 18 months of Phase 2 construction would be in the low 40s dBA, below the acceptable threshold for residential use.

Because the maximum estimated levels of construction noise would occur temporarily, construction noise would generally not occur during night-time hours when residences are most sensitive to noise, and predicted interior noise levels during the latter 18 months of Phase 2 construction would be within the range considered acceptable for residential use according to CEQR criteria, noise resulting from construction would not rise to the level of a significant adverse impact at this receptor.

Scenario 2

The results of the detailed construction noise analysis are summarized in **Table K-16** and the complete construction noise analysis is presented in **Appendix 3**.

Table K-16
Scenario 2 Construction Noise Analysis Results in dBA

Receptor	Location	Existing L_{EQ}		Total L_{EQ}		Change in L_{EQ}	
		Min	Max	Min	Max	Min	Max
1	Lakeview Apartments	63.2	70.5	63.2	74.7	0.0	10.1
2	Central Park East High School	63.2	63.2	63.2	67.5	0.0	4.3
3	Carver Houses (106th and Madison)	63.2	65.9	63.4	75.6	0.2	12.0
4	Carver Houses (105th and Madison)	63.2	63.2	63.2	71.0	0.0	7.8
5	Residences on the West Side of Madison Avenue between Madison Avenue and Fifth Avenue	63.2	65.7	63.3	74.7	0.1	11.5
6	The Reece School	63.2	63.2	63.2	76.9	0.0	13.7
7	Residences on the North Side of East 104th Street between Madison Avenue and Fifth Avenue	63.2	66.1	63.2	67.8	0.0	1.9
8	El Museo del Barrio	63.2	69.6	63.3	74.4	0.0	11.2
9	FHH Building	63.2	68.6	63.2	71.9	0.0	8.7
10	Open Space Receptors in Central Park	72.0	72.0	72.0	72.2	0.0	0.2
11	Residences on the North Side of East 107th Street between Madison Avenue and Fifth Avenue	63.2	64.8	63.2	65.3	0.0	0.7
12	Carver Houses (Madison Avenue between East 107th Street and East 108th Streets)	63.2	63.2	63.2	66.6	0.0	3.4
13	Museum of the City of New York and Central Park East II School	63.2	63.2	63.2	63.5	0.0	0.3

Consideration of the intensity and duration of construction-related noise for each receptor is provided below.

Lakeview Apartments

At the Lakeview Apartments (1250 Fifth Avenue) building, which is located north of the Development site across East 106th Street, represented by Receptor 1, the existing noise levels range from the mid-60s to low 70s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-70s dBA, resulting in noise level increases of up to approximately 10 dBA during the most noise-intensive stages of construction (i.e. the overlap between excavation and foundation construction lasting approximately 3 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to mid-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “marginally unacceptable” range.

During the construction of Scenario 2, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with excavation, and foundation construction. These activities would occur for approximately 10 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during demolition with noise level increments up to approximately 9 dBA and total noise levels in the mid-60s to mid-70s dBA for a duration of 5 months, as well as at times during superstructure construction with noise level increments up to approximately 6 dBA and total noise levels in the mid-60s to low 70s dBA for a duration of 13 months. Predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. Potential exceedances of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise source would be concrete mixer trucks. These trucks would not operate each hour of each day during this construction phase; during the times when concrete trucks are not present or not spinning their mixer drums, construction noise levels at this receptor would be substantially lower and would be in the "marginally acceptable" range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified. Furthermore, construction noise associated with Scenario 2 would typically occur during daytime hours when residences are less sensitive to noise.

Based on the prediction of maximum construction noise level increments up to approximately 10 dBA over a duration of approximately 3 months, total duration of CEQR construction noise screening threshold exceedances of approximately 28 months, notwithstanding off-peak times when levels would be lower, and total noise levels up to the mid-70s dBA in the "marginally unacceptable" category, construction noise associated with Scenario 2 at this receptor would not rise to the level of a significant adverse impact.

Central Park East High School

At the Central Park East High School building, which is located northeast of the Development site along Madison Avenue between East 106th and East 107th Streets, represented by Receptor 2, the existing noise levels are in the mid-60s dBA.

At this building, construction is predicted to produce noise levels in the high 50s to mid-60s dBA, resulting in noise level increases of up to approximately 4 dBA during the most noise-intensive stages of construction (i.e. demolition lasting approximately 5 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the mid- to high 60s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally acceptable" range.

Based on the magnitude of noise level increases and the total noise levels, which would be within the marginally acceptable range according to CEQR noise exposure guidance throughout the construction period as described above, as well as the limited duration of construction noise at these receptors, construction noise at these receptors would not result in a significant adverse impact.

Carver Houses (106th and Madison)

At the Carver Houses building located at the southeast corner of Madison Avenue and East 106th Street, represented by Receptor 3, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison Avenue and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-70s dBA, resulting in noise level increases of up to approximately 12 dBA during the most noise-intensive stages of construction (i.e. demolition lasting five months and the overlap between excavation and foundation construction lasting approximately three months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to mid-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally unacceptable" range.

During the construction of Scenario 2, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition, excavation, and foundation construction. These activities would occur for approximately 15 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during superstructure construction with noise level increments up to approximately 7 dBA and total noise levels in the mid-60s to low 70s dBA for a duration of 13 months. Predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. Potential exceedances of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise sources would be rebar benders and impact wrenches. This equipment would not operate each hour of each day during this construction phase, and as work progresses from one floor of the Scenario 2 tower to the next, they would not be immediately across from each individual receptor for the entire superstructure construction period. During the times when this equipment is not used or is at a different height or shielded from each receptor, construction noise levels at this receptor would be substantially lower and would be in the "marginally acceptable" range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified. Furthermore, construction noise associated with Scenario 2 would typically occur during daytime hours when residences are less sensitive to noise.

Based on the prediction of maximum construction noise level increments up to approximately 12 dBA over a duration of approximately 3 months, total duration of CEQR construction noise screening threshold exceedances of approximately 28 months, notwithstanding off-peak times when levels would be lower, and total noise levels up to the mid-70s dBA in the "marginally unacceptable" category, construction noise associated with Scenario 2 at this receptor would not rise to the level of a significant adverse impact.

Carver Houses (105th and Madison)

At the Carver Houses building located at the southeast corner of Madison Avenue and East 105th Street, represented by Receptor 4, the existing noise levels are in the low 60s dBA.

At this building, construction is predicted to produce noise levels in the high 50s to low 70s dBA, resulting in noise level increases of up to approximately 8 dBA during the most noise-intensive stages of construction (i.e. demolition lasting 5 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to low 70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally unacceptable" range.

During the construction of the Scenario 2, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition. These activities would occur for approximately 5 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during excavation and foundation construction with noise level increments up to approximately 7 dBA and total noise levesl in the low 70s dBA for a duration of 13 months as well as during superstructure construction with noise level increments up to approximately 4 dBA and total noise levels in the mid- to high 60s 70s dBA for a duration of 10 months. Predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. Additionally, after the initial 15 months of demolition, excavation, and foundation construction, total

L_{10} noise levels at this receptor would be less than 70 dBA, which would be categorized as "acceptable" to "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria. Potential exceedances of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise sources would be rebar benders and impact wrenches. This equipment would not operate each hour of each day during this construction phase, and as work progresses from one floor of the Scenario 2 tower to the next, they would not be immediately across from each individual receptor for the entire superstructure construction period. During the times when this equipment is not used or is at a different height or shielded from each receptor, construction noise levels at this receptor would be substantially lower and would be in the "marginally acceptable" range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified. Furthermore, construction noise associated with Scenario 2 would typically occur during daytime hours when residences are less sensitive to noise.

Based on the prediction of maximum construction noise level increments up to approximately 8 dBA over a duration of approximately 5 months, total duration of CEQR construction noise screening threshold exceedances of approximately 28 months, notwithstanding off-peak times when levels would be lower, and total noise levels up to the mid-70s dBA in the "marginally unacceptable" category for 15 months and "marginally acceptable" or lower for the remainder of the construction period, construction noise associated with Scenario 2 at this receptor would not rise to the level of a significant adverse impact.

Residences on the West Side of Madison Avenue between East 104th and 105th Streets

At residences on the west side of Madison Avenue between East 104th and East 105th Streets, represented by Receptor 5, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison Avenue and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-70s dBA, resulting in noise level increases of up to approximately 12 dBA during the most noise-intensive stages of construction (i.e. demolition lasting 5 months and the overlap between excavation and foundation construction lasting approximately 3 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to mid-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally unacceptable" range.

During the construction of the Scenario 2, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition, excavation, and foundation construction. These activities would occur for approximately 15 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during superstructure construction with noise level increments up to approximately 6 dBA and total noise levels in the mid-60s to low 70s dBA for a duration of 13 months. Predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. Potential exceedancees of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise sources would be rebar benders and impact wrenches. This equipment would not operate each hour of each day during this construction phase, and as work progresses to a level above the height of this receptor, they would not be immediately across from the receptor and would be shielded from the receptor. During the times when these pieces of equipment are not used or are at a different height or shielded from each receptor, construction noise levels at this receptor would be substantially lower and would be in the “marginally acceptable” range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified. Furthermore, construction noise associated with Scenario 2 would typically occur during daytime hours when residences are less sensitive to noise.

Standard building façade attenuation including insulated glass windows and a means of alternate ventilation (i.e., air conditioning) would be expected to result in approximately 25 dBA window-wall attenuation at these buildings. Consequently, maximum interior $L_{10(1)}$ noise levels during worst-case demolition activities (approximately 5 months) and the overlap of excavation and foundation construction activity (approximately 4 months) would be in the high 40s to low 50s dBA. Compared with the 45 dBA threshold recommended for residential use according to CEQR noise exposure guidelines, the estimated construction noise levels would be approximately 7 dBA greater. Interior noise levels during the remainder of excavation and foundation construction as well as superstructure construction would be up to approximately 4 dBA greater than the acceptable residential use threshold, and during portions of the superstructure construction when work is located above the height of this receptor and during the final 21 months of exterior façade and interior fit-out construction, interior noise levels would be below the acceptable residential use threshold.

Because the maximum estimated levels of construction noise would occur temporarily, construction noise would generally not occur during night-time hours when residences are most sensitive to noise, and predicted interior noise levels during portions of the superstructure construction when work is located above the height of this receptor and during the latter 21 months of construction would be within the range considered acceptable for residential use according to CEQR criteria, noise resulting from construction would not rise to the level of a significant adverse impact at this receptor.

Residences on East 105th Street between Madison and Fifth Avenues

At residences on the south side of East 105th Street between Madison and Fifth Avenues (14 through 26 East 105th Street), represented by Receptor 6, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above-grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-70s dBA, resulting in noise level increases of up to approximately 14 dBA during the most noise-intensive stages of construction (i.e. demolition lasting 5 months and the overlap between excavation and foundation construction lasting approximately 3 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to mid-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “marginally unacceptable” range.

During the construction of the Scenario 2 development, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition, excavation, and foundation construction. These activities would occur for approximately 15 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during superstructure construction with noise level increments up to approximately 7 dBA and total noise levels in the mid-60s to low 70s dBA for a duration of 13 months. Predicted construction noise levels would not exceed *CEQR Technical*

Manual construction noise screening threshold at this receptor for the remaining construction period. Potential exceedances of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise sources would be rebar benders and impact wrenches. These pieces of equipment would not operate each hour of each day during this construction phase, and as work progresses to a level above the height of this receptor, they would not be immediately across from the receptor and would be shielded from the receptor. During the times when these pieces of equipment are not used or are at a different height or shielded from each receptor, construction noise levels at this receptor would be substantially lower and would be in the “marginally acceptable” range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified. Furthermore, construction noise associated with Scenario 2 would typically occur during daytime hours when residences are less sensitive to noise.

Based on the prediction of maximum construction noise level increments up to approximately 14 dBA over a duration of approximately 3 months, total duration of CEQR construction noise threshold exceedances of approximately 28 months, notwithstanding periods when work would occur at upper elevations and noise levels would be lower, and total noise levels up to the mid-70s dBA in the “marginally unacceptable” category, construction noise associated with Scenario 2 at this receptor would not rise to the level of a significant adverse impact.

The Reece School and Residences on the North Side of East 104th Street between Madison Avenue and Fifth Avenue

At the Reece School and residences on the north side of East 104th Street between Madison and Fifth Avenues, represented by Receptors 6 and 7, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above grade (i.e., floor of the building).

At these buildings, construction is predicted to produce noise levels in the high 50s to low 60s dBA, which would not result in any exceedances of the *CEQR Technical Manual* construction noise screening thresholds during the construction period. These receptors would not have the potential to experience a significant adverse construction noise impact.

El Museo del Barrio

At El Museo del Barrio (1230 Fifth Avenue), located along Fifth Avenue between East 105th and East 104th Streets, represented by Receptor 8, the existing noise levels range from the low to high 60s dBA depending on proximity and line of sight to Fifth Avenue and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the high 50s to mid-70s dBA, resulting in noise level increases of up to approximately 11 dBA during the most noise-intensive stages of construction (i.e. demolition lasting 5 months and the overlap between excavation and foundation construction lasting approximately 3 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the low 60s to mid-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “marginally unacceptable” range.

During the construction of the Scenario 2, the activities that would produce the highest noise levels at these receptors would be operation of excavators and dump trucks associated with demolition, excavation, and foundation construction. These activities would occur for approximately 15 months. Consequently, the maximum noise levels would not persist throughout the construction period. However, construction would also result in exceedances of CEQR screening thresholds, including at times during superstructure construction with noise level increments up to approximately 5 dBA and total noise levels in the mid-60s to high 60s dBA for a duration of 13 months. Predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. Potential exceedances of the CEQR construction noise screening criteria were predicted to occur over a duration of up to approximately 28 months at this receptor. For 13 of those 28 months, during superstructure construction, the dominant noise sources would be rebar benders and impact wrenches. These pieces of equipment would not operate each hour of each day during this construction phase, and as work progresses to a level above the height of this receptor, they would not be immediately across from the receptor and would be shielded from the receptor. During the times when these pieces of equipment are not used or are at a different height or shielded from each receptor, construction noise levels at this receptor would be substantially lower and would be in the "marginally acceptable" range. Consequently, the receptor would not experience construction noise at these predicted levels constantly throughout the 28-month period identified.

Based on the prediction of maximum construction noise level increments up to approximately 11 dBA over a duration of approximately 3 months, total duration of CEQR construction noise threshold exceedances of approximately 28 months, notwithstanding periods when work would occur at upper elevations and noise levels would be lower, and total noise levels up to the mid-70s dBA in the "marginally unacceptable" category, construction noise associated with Scenario 2 at this receptor would not rise to the level of a significant adverse impact.

Open Space Receptors in Central Park

At open space receptors in Central Park west of the Development Site, represented by receptor 10, the existing noise levels are in the low 70s dBA.

Construction of Scenario 2 is predicted to produce maximum noise levels at these receptors in the mid-50s dBA, which would not result in any exceedances of the *CEQR Technical Manual* construction noise screening thresholds during the construction period. This receptor would not have the potential to experience a significant adverse construction noise impact.

Residences on the North Side of East 107th Street between Madison Avenue and Fifth Avenue

At the residences on the north side of East 107th Street between Madison and Fifth Avenues, represented by Receptor 11, the existing noise levels range from the low to mid-60s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above grade (i.e., floor of the building).

At this building, construction is predicted to produce noise levels in the mid- to high 50s dBA, which would not result in any exceedances of the *CEQR Technical Manual* construction noise screening thresholds during the construction period. This receptor would not have the potential to experience a significant adverse construction noise impact.

Carver Houses (Madison Avenue between East 107th and East 108th Streets)

At the Carver Houses building located along Madison Avenue between East 107th and East 108th Streets, represented by Receptor 12, the existing noise levels are in the low 60s dBA.

At this building, construction is predicted to produce noise levels in the high 50s to mid-60s dBA, resulting in noise level increases of up to approximately 3 dBA during the most noise-intensive stages of construction (i.e. demolition lasting approximately 5 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable and potentially intrusive. During this time, total noise levels at this receptor would be in the mid-60s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally acceptable" range.

Based on the magnitude of noise level increases and the total noise levels, which would be within the marginally acceptable range according to CEQR noise exposure guidance throughout the construction period as described above, as well as the limited duration of construction noise at these receptors, construction noise at these receptors would not result in a significant adverse impact.

Museum of the City of New York and Central Park East II School

At the Museum of the City of New York and Central Park East II (Opus 118 Harlem School of Music) located south of East 104th Street, represented by Receptor 13, the existing noise levels are in the low 60s dBA.

At this building, construction is predicted to produce noise levels in the mid- to high 40s dBA, which would not result in any exceedances of the *CEQR Technical Manual* construction noise screening thresholds during the construction period. This receptor would not have the potential to experience a significant adverse construction noise impact.

FHH Building

At the FHH Building, located along Fifth Avenue between East 105th and East 106th Streets, represented by Receptor 9, the existing noise levels range from the low to high 60s dBA depending on proximity and line of sight to Madison and Fifth Avenues and height above grade (i.e., floor of the building). Under the Scenario 2 construction schedule, renovations would be complete at the FHH Building within the first 2 years of construction, and it could be occupied during superstructure, exteriors, and interiors construction and consequently would have the potential to experience construction noise during this time.

At this building, construction is predicted to produce noise levels in the high 40s to low 70s dBA, resulting in noise level increases of up to approximately 9 dBA during the most noise-intensive stages of construction (i.e. superstructure construction lasting 10 months). The predicted noise level increases at this receptor during the most intensive work would be noticeable. During this time, total noise levels at these receptors would be in the low 60s to low 70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "marginally unacceptable" range. However, predicted construction noise levels would not exceed *CEQR Technical Manual* construction noise screening threshold at this receptor for the remaining construction period. The total duration of exceedance of the CEQR construction noise screening criteria would be approximately 13 months at this receptor. Additionally, after the initial 13 months of superstructure construction, total L_{10} noise levels at this receptor would be less than 70 dBA, which would be categorized as "acceptable" to "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Based on field observations, the FHH Building has insulated glass windows and an alternative means of ventilation (i.e., through-wall air conditioners and mechanically ducted air), which would be expected to provide approximately 25 dBA window-wall attenuation. Consequently, maximum interior $L_{10(1)}$ noise levels during construction would be in the mid-40s dBA. Compared with the 45 dBA threshold recommended for in-patient medical use according to CEQR noise exposure guidelines, the estimated construction noise levels would be approximately 3 dBA greater during the loudest periods of the approximately 10 months of superstructure construction and would be within the acceptable range during the remainder of construction.

Based on the prediction of maximum construction noise levels up to the low 70s dBA with construction noise level increments up to approximately 9 dBA over a duration of approximately 13 months with interior noise levels within 3 dBA of the acceptable threshold for in-patient medical use, and "acceptable" or "marginally acceptable" noise levels with no screening threshold exceedances for the remainder of the construction period, construction noise associated with Scenario 2 at the FHH Building would not have the potential to result in a significant adverse construction noise impact under Scenario 2.

CONCLUSIONS

Construction activity generated as a result of the Proposed Actions would be expected to result in elevated noise levels at nearby receptors and noise due to construction would at times be noticeable and potentially intrusive. However, at receptors other than those directly adjacent to or across from the Development Site, noise from construction would be intermittent and of limited duration, and estimated construction noise levels would not exceed *CEQR Technical Manual* construction noise screening thresholds. In addition, the Applicant has committed to additional noise control measures beyond the minimum required by code in order to reduce potential noise effects on the surrounding receptors. Consequently, noise associated with the construction would not rise to the level of a significant adverse noise impact at these receptors not directly adjacent or across from the Development Site.

At receptors immediately adjacent to or across from the Development Site, construction would result in large noise level increases and high noise levels during the most noise-intensive construction activities at the adjacent work area. However, these noise levels would be intermittent and temporary based on the preliminary construction schedule. Consequently, the projected levels of noise resulting from construction at these receptors would not rise to the level of a significant adverse noise impact.

VIBRATION

Construction activities have the potential to result in vibration levels that may 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, the determination of a significant impact was based on the vibration impact criterion used by LPC of a peak particle velocity (PPV) of 0.50 inches/second as specified in the DOB *Technical Policy and Procedure Notices (TPPN) #10/88*. For non-fragile buildings, vibration levels below 2.0 inches/second would not be expected to result in any structural or architectural damage.

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

ANALYSIS METHODOLOGY

Table K-17 shows vibration source levels for typical construction equipment.

Table K-17
Vibration Source Levels for Construction Equipment

Equipment		PPVref (in/sec)	Approximate Lv (ref) (VdB)
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam Shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58
Source: Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.			

The source vibration levels shown in **Table K-15** were projected to nearby receptors to estimate the potential effects of construction vibration.

The equipment used (e.g. vibration sources) would not differ between Scenario 1 or Scenario 2 construction, therefore, the analysis does not differentiate between Scenario 1 or Scenario 2 vibration.

CONSTRUCTION VIBRATION ANALYSIS RESULTS

The architectural resources and structures of most concern with regard to the potential for structural or architectural damage due to vibration are the FHH Building, El Museo del Barrio, the four residential buildings at 14–26 East 105th Street located within the potential Fifth Avenue Historic District, a small part of the grassy lawn area of the Carver Houses complex, and a small area of Central Park. Although the four residential buildings at 14–26 East 105th Street are located within the potential Fifth Avenue Historic District and have not been formally determined eligible for listing on the State and National Historic Registers of Historic Places (S/NR-eligible), they may meet eligibility criteria (see Attachment E, “Historic and Cultural Resources”). Therefore, while these potential historic resources are not required to be protected through a CPP, the Applicant (and/or a future developer) would provide vibration monitoring in accordance with the procedures in DOB *TPPN #10/88* regulations at these structures, in addition to vibration monitoring at the FHH Building and El Museo del Barrio. Vibration levels during construction would be prohibited from exceeding the 0.50 inches/second threshold, and construction means/methods would be altered as necessary to avoid such exceedances. The equipment that would have the most potential for producing levels that exceed the 0.5 in/sec PPV acceptable vibration level threshold for historic and potentially historic buildings and structures within 90 feet of the Development Site would be caisson drilling. According to **Table K-15**, caisson drilling is expected to result in maximum vibration levels of about 0.089 in/sec PPV at the reference distance of 25-feet. Historic and potentially historic buildings and structures are at least 25-feet away from the proposed locations of caisson drilling operations. Therefore, PPV vibration levels are not expected to exceed the 0.5 in/sec threshold for the historic and potentially historic buildings and structures within 90 feet of the Development Site. As a result, vibration levels during construction would not rise to the level of significant adverse impact at these historic and architectural resources.

Although a small portion of the Carver Houses grassy lawn area and a small area of Central Park across Fifth Avenue from the FHH Building are located within 90 feet of the Development Site, vibration levels that could affect the landscaped area of this historic building complex and grounds would not be expected to exceed 0.5 in/sec PPV, including during caisson drilling operations. Additional receptors at the buildings within the Carver Houses complex, which are located farther away from the Development Site, would experience less vibration than at the landscaped area of this historic resource that is within 90 feet of the Development Site. Therefore, the landscaping and buildings within the Carver Houses complex would not be expected to experience construction-related vibration 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 are caisson drilling and jackhammers. Caisson drilling would have the potential to produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 140 feet depending on soil conditions. Jackhammering would have the potential to produce perceptible vibration levels at receptor locations within a distance of approximately 75 feet depending on soil conditions. However, the operation of caisson drilling and jackhammering would only occur for limited periods of time at a particular location.

Since expected construction vibration levels would not have the potential to result in architectural or structural damage at nearby structures, and vibration in the perceptible range would occur only over a limited period of time, vibration associated with construction would not rise to the level of significant adverse impact.

CONCLUSION

The Applicant, a future developer, and/or its contractors would incorporate vibration monitoring for all historic and potentially historic structures located within 90 feet of the Development Site. Vibration levels during construction would not be permitted to exceed the 0.50 inches/second threshold considered acceptable for historic structures. Vibration-producing equipment would not operate in proximity to non-historic structures such that they could potentially result in damage to these structures. Furthermore, construction would not result in extended periods of perceptible or annoying vibrations at surrounding receptors. Therefore, construction activities would not have the potential to result in significant adverse vibration impacts.

OTHER TECHNICAL AREAS

LAND USE AND NEIGHBORHOOD CHARACTER

According to the *CEQR Technical Manual,* a construction impact analysis for land use and neighborhood character is typically needed if construction would require continuous use of property for an extended duration, thereby having the potential to affect the nature of the land use and character of the neighborhood.

Construction activities would affect land use in the Project Area, but would not affect land use conditions and patterns beyond the Project Area. 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 temporary in nature and would have limited effects on land uses surrounding the Project Area, particularly as most construction activities would take place within construction areas or within portions of sidewalks and curb lanes adjacent to the Project Area along East 105th and East 106th Streets between Madison and Fifth Avenues. In addition, throughout the construction period, measures would be implemented to control air quality, noise, and vibration on the construction areas, including the erection of construction barriers for each Development Site. The barriers would reduce potentially undesirable views of construction activity on the Development Site and buffer noise emitted from construction activities. Barriers would be used to protect the safety of pedestrians and bicyclists.

Overall, while construction activities at the Development Site would be evident to the local community, the limited duration and temporary nature of construction would not result in any significant or long-term adverse impacts on local land use patterns or the character of the nearby area.

SOCIOECONOMIC CONDITIONS

According to the *CEQR Technical Manual*, construction impacts to socioeconomic conditions are possible if the Proposed Actions would entail construction of a long duration that could affect access to and thereby viability of a number of businesses, and if the failure of those businesses has the potential to affect neighborhood character. Construction would not affect the operations of any other nearby businesses or obstruct major thoroughfares used by customers or businesses. During the renovation of the FHH Building, all patients and TCC functions would continue to operate using swing space that would be available in the FHH Building, the Annex, and the Cohen Building.

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 activities. Construction also would contribute to increased tax revenues for the City and state, including those from personal income taxes. Construction activities would not result in any significant adverse impacts on socioeconomic conditions.

COMMUNITY FACILITIES

According to the *CEQR Technical Manual*, construction impacts to community facilities are possible if a community facility were directly affected by construction (e.g., if construction would disrupt services provided at the facility or close the facility temporarily, etc.).

TCC is a publicly funded health care facility. Absent the Proposed Actions, the Applicant will discontinue TCC operations at the campus and sell the FHH and Development Sites; therefore, TCC would be displaced in the No Action condition.

The Development Site would be surrounded by construction barriers that would limit the effects of construction on nearby facilities. Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, child care facilities, and health care in area surrounding the Development Site. Construction would not block or restrict access to any facilities in the area, and would not materially affect emergency response times. The New York

City Police Department (NYPD) and FDNY emergency services and response time would not be materially affected as a result of the geographic distribution of the police and fire facilities and their respective coverage areas.

Under Scenario 1, the Proposed Actions would physically alter TCC. However, modifications to the existing TCC facilities would be conducted in phases to ensure that TCC health care facilities services are not disrupted throughout construction. The FHH Building would be upgraded and modernized to house TCC's Joint Long-Term Care and Hospital Facility. During the renovation of the FHH Building, all patients and TCC functions would continue to operate using swing space that is available in the FHH Building, the Annex, and the Cohen Building. Concurrently, the Senior Building would be constructed at the corner of Madison Avenue and East 105th Street (the current location of the parking garage). Once completed, TCC would appropriately rebalance the provision of health care services based on the need for higher or lower-acuity care settings. Some patients with low-acuity conditions would be relocated into the Senior Building. In the second phase, the balance of the Development Site would be available for development of the residential tower and PACE Center. Thus, the Proposed Actions would substantially benefit a publicly funded health care facility. A detailed analysis of direct effects is not warranted because the physical changes to TCC facilities would not affect service delivery.

Under Scenario 2, similar to the No Action condition, it is assumed that TCC would no longer occupy the Project Area. In this scenario, which is being considered only for purposes of ensuring a conservative analysis, it is assumed that the Applicant would sell the Development Site, which would be redeveloped with residential, community facility/medical office, and retail space.

Construction activities associated with the Proposed Actions under either scenario would not have any indirect effects on community facilities since the Proposed Actions would not result in a sufficiently large population increase to increase the demand for existing services. Therefore, no significant adverse impact to community facilities is anticipated.

OPEN SPACE

According to the *CEQR Technical Manual*, construction impacts to open space are possible if the open space is taken out of service for a period of time during the construction process. As described in Attachment C, "Open Space," there are no publicly owned open spaces on the Development Site. In addition, measures would be implemented to control air emissions, dust, noise, and vibration on the Development Site during construction. While construction may cause temporary disruptions to the nearby open spaces such as the Mae Grant Playground and Central Park's Conservatory Garden, particularly related to noise, it is expected that such disruptions in any given area would be temporary and would not be ongoing for the full duration of the construction period. Therefore, no significant construction impacts are anticipated on open space.

HISTORIC AND CULTURAL RESOURCES

As described in Attachment E, "Historic and Cultural Resources," the Project Area does not possess archaeological significance and no further archeological assessment is warranted. Therefore, the Proposed Actions would not have the potential to result in construction period archaeological impacts.

Under both scenarios, the FHH Building's façades would be cleaned and repaired as needed. In addition, the FHH Building's east façade would be sealed and repaired as needed in the areas affected by the demolition of the Annex. Any repair to the affected area of the FHH Building's east façade would be undertaken to be appropriate to the building's overall appearance.

The façade repair to the FHH Building would not adversely affect this historic resource as the Proposed Actions would not be expected to involve modifications that would remove visually prominent façade elements that characterize the building. Further, the removal of the Annex would establish visibility of the FHH Building's east wings from nearby vantage points on East 105th and East 106th Streets because the new buildings that would be developed on the eastern portion of the Development Site would be set away from the FHH Building above the base. The new development on the eastern portion of the Development Site would not obstruct or adversely alter any significant public views of the FHH Building or the context of other nearby historic architectural resources. Further, the new development would not isolate the FHH Building from its setting or adversely affect the FHH Building's relationship to the streetscape. While the new development would alter the setting of the FHH Building, these changes would not be visually incompatible with the FHH Building.

Since the FHH Building has been determined by LPC to appear S/NR-eligible, to avoid the potential for inadvertent adverse physical impacts to the FHH Building during construction—such as ground-borne vibrations, falling debris, and damage from heavy machinery—the Applicant (and/or a future developer), in coordination with a professional engineer with experience working with historic buildings, would develop and implement a CPP in consultation with LPC prior to construction. The CPP would follow the requirements established in the DOB *TPPN #10/88*, concerning procedures for the avoidance of damage to adjacent historic structures from nearby construction. The CPP would also follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*, including conformance with LPC's *Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*.

Within the 400-foot study area, architectural resources analyzed include National Historic Landmarks (NHLs); S/NR-listed properties and historic districts and properties determined S/NR-eligible; and NYCLs and New York City Historic Districts (NYCHDs) ("known architectural resources"). Additionally, a survey was conducted to identify any previously undesignated properties in the study area that appeared to meet S/NR or NYCL eligibility criteria ("potential architectural resources"). As discussed above, the FHH Building, El Museo del Barrio, the four residential buildings at 14–26 East 105th Street located within the potential Fifth Avenue Historic District, a small part of the grassy lawn area of the Carver Houses complex, and a small area of Central Park are located within 90 feet of the Project Area. As such, vibration levels would have the potential to exceed the 0.5 in/sec threshold for these historic resources at times as a result of impact pile driving, which is the most vibration intensive activity associated with construction, when it would occur within 55 feet of these structures. Although the four residential buildings at 14-26 East 105th Street have not been formally determined S/NR-eligible, they may meet eligibility criteria (see Attachment E, "Historic and Cultural Resources"). Therefore, while these potential historic resources are not required to be protected through a CPP, the Applicant (and/or a future developer) would provide vibration monitoring and other measures in accordance with the procedures in DOB *TPPN #10/88* regulations at these structure, in addition to vibration monitoring at the FHH Building and El Museo del Barrio.

Although a small portion of the Carver Houses complex's grassy lawn area and a small area of Central Park across Fifth Avenue from the FHH Building are located within 90 feet of the Development Site, vibration levels that could affect the landscaped area of this historic building complex and grounds would not be expected to exceed 0.5 in/sec PPV, including during impact pile driving. Additional receptors at the buildings within the Carver Houses complex, which are located farther away from the Development Site, would experience less vibration than at the landscaped area of this historic resource that is within 90 feet of the Development Site. Therefore, the landscaping and buildings within the Carver Houses complex would not be expected to experience construction-related vibration damage.

No other architectural resources in the 400-foot radius of the Project Area would be directly or indirectly affected by the Proposed Actions. Therefore, the Proposed Actions would not result in any significant adverse impacts to historic architectural resources.

As there are no other known or potential historic resources in the Project Area, the Proposed Actions would not have the potential to adversely affect any such resources.

HAZARDOUS MATERIALS

Similar to the No Action condition, both Scenarios 1 and 2 would result in demolition and ground disturbance, potentially increasing exposure to hazardous materials. Although this could increase pathways for human exposure to any contaminated materials present in the existing structures or subsurface, impacts would be avoided by incorporating the following into the Proposed Actions:

- Demolition would be conducted in compliance with applicable regulatory requirements, e.g., for ACMs, LBP, etc.
- A subsurface investigation involving the collection of subsurface samples for laboratory analysis would be conducted prior to ground disturbance in accordance with a scope of work pre-approved by DEP. Based on the investigation findings, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be prepared and implemented during the subsurface disturbance. The RAP would address requirements for items such as soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should additional underground petroleum storage tanks or soil/groundwater contamination be unexpectedly encountered. It would also address any measures required to be incorporated into the new buildings, such as vapor controls. The purpose of the CHASP is to provide for contingencies that may arise during construction at the site, including specifying appropriate measures to be implemented if underground storage tanks, soil and groundwater contamination, or other unforeseen environmental conditions are encountered
- As a part of the proposed redevelopment of the site and to protect future occupants in the new construction, a vapor barrier (minimum thickness of 15 mil) would be installed below the building's foundation and outside of the subgrade walls.
- Applicable regulatory requirements would be followed, e.g., properly disposing of any excess soil; reporting to NYSDEC any signs of a petroleum spill (removing and registering encountered tanks); and following DEP requirements should dewatering be required.

In connection with the requested zoning changes, an (E) designation (E-531) would be mapped on the Project Area (Block 1611, Lots 1 and 15) requiring implementation of the above-described measures (see Attachment G, "Hazardous Materials"). With these measures included as part of the Proposed Actions, no significant adverse impacts related to hazardous materials would occur.

G. CONCLUSION

Construction would result in temporary disruptions in the surrounding area. In connection with the requested zoning changes, E-531 would be mapped on the Development Site requiring implementation of a CHASP to protect workers and the public from exposure to potential hazardous materials during construction. In addition, with approval of the Proposed Actions, the Applicant would enter into an RD that would legally bind the Applicant and/or any future developer of property within the Project Area to the implementation of PCREs, as described below.

CONSTRUCTION PROTECTION PLAN

HISTORIC RESOURCES

To avoid the potential for inadvertent adverse physical impacts to historic resources within 90 feet of the Project Area, the Applicant would implement a CPP. The CPP is intended to minimize construction-related impacts to the FHH Building, El Museo del Barrio, the four residential buildings at 14–26 East 105th Street located within the potential Fifth Avenue Historic District, a small part of the grassy lawn area of the Carver Houses complex, and a small area of Central Park located across Fifth Avenue. The CPP would include measures to minimize effects of construction activity—such as ground-borne vibrations, falling debris, and damage from heavy machinery—the Applicant (and/or a future developer), in coordination with a professional engineer with experience working with historic buildings, would develop and implement a CPP in consultation with LPC prior to construction. The CPP would follow the requirements established in the DOB *TPPN #10/88*, concerning procedures for the avoidance of damage to adjacent historic structures from nearby construction. The CPP would also follow the guidelines set forth in Section 523 of the *CEQR Technical Manual*, including conformance with LPC's *Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. Therefore, the Proposed Actions would not result in any direct impacts to any of the architectural resources in the study area.

VIBRATION

The Applicant, a future developer, and/or its contractors would incorporate vibration monitoring for all historic and potentially historic structures located within 90 feet of the Development Site. Vibration levels during construction would not be permitted to exceed the 0.50 inches/second threshold considered acceptable for historic structures. Vibration-producing equipment would not operate in proximity to non-historic structures such that they could potentially result in damage to these structures. Furthermore, construction would not result in extended periods of perceptible or annoying vibrations at surrounding receptors. Therefore, construction activities would not have the potential to result in significant adverse vibration impacts.

CONSTRUCTION AIR EMISSIONS REDUCTION MEASURES

To minimize the effects of emissions from construction equipment, the RD would require the following PCREs:

EMISSION CONTROL MEASURES

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

- *Dust Control.* To minimize fugitive dust emissions from construction activities, a fugitive dust control plan, including a robust watering program, would be required as part of contract specifications. 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; water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with a chemical suppressing agent, or covered. All measures required by the portion of the New York City Air Pollution Control Code 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 will be restricted to 3 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.

USE OF ULSD FUEL AND BAT FOR EQUIPMENT AT THE TIME OF CONSTRUCTION

- *Clean Fuel*. ULSD fuel will be used exclusively for all diesel engines throughout the Development Site.
- *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 BAT for reducing DPM emissions. 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 OEM or retrofitted. Retrofitted DPFs must be verified by EPA or CARB. Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.

FURTHER MEASURES TO REDUCE AIR POLLUTANT EMISSIONS DURING CONSTRUCTION

- *Diesel Equipment Reduction*. Electrically powered equipment would be preferred over diesel-powered and gasoline-powered versions of that equipment to the extent practicable. Equipment that would use the grid power in lieu of diesel engines includes, but may not be limited to, hoists, the tower crane that would be employed during construction, 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 HC. All diesel-powered non-road construction equipment with a power rating of 50 hp or greater would meet at least the Tier 3 emissions standard. All non-road diesel-powered engines rated less than 50 hp would meet at least the Tier 2 emissions standard.

CONSTRUCTION NOISE REDUCTION MEASURES

Construction 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, the Applicant has committed to additional noise control measures beyond the minimum required by code in order to reduce potential noise effects on the surrounding receptors. These measures would bind future developers of property within the Project Area as well. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the New York City Noise Code as is called for in Chapter 22, "Construction," of the *CEQR Technical Manual*. These measures would include a variety of source, path, and receptor controls.

SOURCE CONTROL MEASURES

- Equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code and Table 22-1 of the *CEQR Technical Manual* would be utilized from the start of construction. Additionally, the Applicant has committed to lower noise emission limits for specific pieces of equipment (i.e., cranes, compressors, generators, hoists, and concrete vibrators). **Table K-14** 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, including a quieter project-specific noise emission limits for select types of equipment.
- Pile installation would be conducted by means of drilling rather than impact driving;
- As early in the construction period as logistics would allow (likely by the start of the superstructure phase of construction pending service provisions from Con Edison), 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 feasible and practicable, the Development Site would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than 3 minutes at the Development Site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the New York City Administrative Code; and
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

PATH CONTROL MEASURES

- 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
- Concrete operations including pumps and trucks would occur within a plywood enclosure along East 106th Street;
- Hoist and crane operations would be located along Madison Avenue to maximize distance to receptors with low existing noise levels; and
- Noise barriers constructed from plywood surrounding the Development Site would be utilized to provide shielding. The barriers would be at least 8 feet tall, except along Madison Avenue, where the barriers would be 12-foot tall including a cantilever towards the Development Site. Where logistics allow, truck deliveries would take place behind these barriers.

RECEPTOR CONTROL MEASURES

If the Senior Building, as defined in the EAS, would be completed and occupied during construction of the PACE Center and residential tower, the Applicant commits to ensuring that the façades of the Senior Building that face construction (i.e., north and west façades) would provide at least 31 dBA window-wall attenuation as well as an alternate means of ventilation.

Overall, the Proposed Actions would not result in significant adverse impacts related to construction. ✷

Appendix 1
Agency Correspondence

NYC Landmarks Preservation Commission
1 Centre Street
9th Floor North
New York, NY 10007
Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ARCHAEOLOGY

Project number: DEPARTMENT OF CITY PLANNING / LA-CEQR-M
Project: TERENCE CARDINAL COOKE HEALTH CENTER REZONING
Date received: 7/31/2018

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

Properties with no Archaeological significance:
1) ADDRESS: 1240 5 AVENUE, BBL: 1016110001
2) ADDRESS: 1560 MADISON AVENUE, BBL: 1016110015

Comments:

Amanda Sutphin

8/2/2018

SIGNATURE DATE
Amanda Sutphin, Director of Archaeology

File Name: 33555_FSO_GS_08022018.doc

Landmarks Preservation Commission
1 Centre Street
9th Floor North
New York, NY 10007
Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ENVIRONMENTAL REVIEW

Project number: DEPARTMENT OF CITY PLANNING / 19DCP070M
Project: TERENCE CARDINAL COOKE HEALTH CENTER REZONING
Date received: 9/26/2018

Comments:

The LPC is in receipt of the EAS dated 9/14/18.

In the Historic and Cultural Resources chapter, the FHH building at 1249 Fifth Avenue appears S/NR eligible. Public School 171 appears LPC eligible.

There are no concerns with the Shadows Chapter.

Gina Santucci 10/24/2018

SIGNATURE DATE
Gina Santucci, Environmental Review Coordinator

File Name: 33555_FSO_GS_10242018.doc

Environmental Protection

Vincent Sapienza, P.E.
Commissioner

Angela Licata
Deputy Commissioner of Sustainability

59-17 Junction Blvd.
Flushing, NY 11373

Tel. (718) 595-4398
Fax (718) 595-4422
alicata@dep.nyc.gov

October 24, 2018

Rachel Antelmi
Project Manager
Environmental Assessment and Review Division
New York City Department of City Planning
120 Broadway, 31st Floor
New York, NY 10271

Re: Terence Cardinal Cooke Health Center Rezoning
Block 1611, Lots 1 and 15
CEQR # 19DCP070M

Dear Ms. Antelmi:

The New York City Department of Environmental Protection, Bureau of Sustainability (DEP) has reviewed the October 2018 Environmental Assessment Statement (EAS) and the June 2018 Phase I Environmental Site Assessment (Phase I) prepared by AKRF, Inc., on behalf of Catholic Health Care System d/b/a ArchCare (applicant) for the above referenced project. It is our understanding that the applicant is seeking a zoning map amendment and zoning text amendment from the New York City Department of City Planning (DCP) to change existing R7-2 and R7-2/C1-5 districts to R8 and R8/C1-5 districts and to designate a Mandatory Inclusionary Housing (MIH) Area in Appendix F of the Zoning Resolution. The proposed actions would facilitate the modernization of the Terence Cardinal Cooke Health Center (TCC), an existing health/rehabilitation center located in Manhattan Community District 11, through a consolidation of existing functions as well as new construction (proposed project) within Block 1611, p/o Lot 1 and Lot 15 (Development Site/Rezoning Area). In conjunction with this new construction, the applicant also seeks to renovate the existing Flower Hill Hospital (FHH) Building (Block 1611, remaining portion of Lot 1), which is part of TCC and located directly adjacent to the Development Site along Fifth Avenue. Therefore, the project area includes the entirety of Block 1611, Lots 1 and 15. While ArchCare's goal is to modernize the TCC facilities, because the zoning map amendment would allow for either a predominantly community facility or residential development, the EAS considers two illustrative With Action scenarios. Scenario 1 (the applicant's preferred scenario) would occur in two phases. In Phase 1, the FHH Building would be rehabilitated to accommodate TCC's consolidated Skilled Nursing Facility and Specialty Hospital. The Development Site would be programmed with a 10-story, 87,653-gross-square-foot (gsf) nonprofit senior supportive housing development containing approximately 150 supportive housing units located on the corner of East 105th Street and Madison Avenue. In Phase 2, the remainder of the Development Site would be programmed with TCC's Program of All-Inclusive Care for the Elderly, in a building located mid-block, containing 54,606 gsf of medical office space, combined with a

32-story residential tower containing 340,930 gsf of residential space, on the corner of East 106th Street and Madison Avenue. Scenario 2 would occur in a single phase. The FHH Building would be converted to residential space. The Development Site would be programmed with one large mixed-use development, containing 121,471 gsf of outpatient medical office space, a 34-story 340,930-gsf residential tower, along East 106th Street and 20,788 gsf of ground-floor retail space along Madison Avenue.

The June 2018 Phase I report revealed that historical on-site and surrounding area land uses consisted of a variety of residential and commercial uses including residential dwellings, a public school, a park, a museum, a municipal building, a hospital, printers, an auto brake service shop, dry cleaners, etc. Based on the age of the subject buildings, asbestos containing materials and lead based paints could be present in the on-site structures. Electrical equipment, caulk, hydraulic equipment, and lighting fixtures, switches and thermostats may include polychlorinated biphenyls- or mercury-containing components. Regulatory databases identified 262 spills within 1/8 mile; 5 underground storage tank sites and 11 aboveground storage tank sites within 1/4 mile; and 64 leaking storage tank sites within 1/2 mile of the project site.

Based upon our review of the submitted documentation, we have the following comments and recommendations to DCP:

Block 1611, Lots 1 and 15

- Based on prior on-site and/or surrounding area land uses which could result in environmental contamination, DEP concurs with the EAS recommendation that an (E) designation for hazardous materials should be placed on the zoning map pursuant to Section 11-15 of the New York City Zoning Resolution for the subject properties. The (E) designation will ensure that testing and mitigation will be provided as necessary before any future development and/or soil disturbance. Further hazardous materials assessments should be coordinated through the Mayor's Office of Environmental Remediation.

Future correspondence and submittals related to this project should include the following CEQR # **19DCP070M**. If you have any questions, you may contact me at (718) 595-4358.

Sincerely,

Wei Yu

Wei Yu
Deputy Director, Hazardous Materials

c: R. Weissbard
T. Estesen
M. Wimbish
R. Dobruskin – DCP
O. Abinader – DCP
M. Bertini – OER

Appendix 2
Hazardous Materials
Phase 1 ESA Executive Summary

AKRF, Inc.
34 South Broadway
White Plains, NY 10601
Phone: 914-949-7336
Fax: 914-949-7559

June 29, 2018

Mr. Scott LaRue
ArchCare
205 Lexington Avenue, 3rd Floor
New York, NY 10016

Re: Phase I Environmental Site Assessment
Terence Cardinal Cooke Health Center– ***Manhattan, New York***
AKRF Project Number: 170287

Dear Mr. LaRue:

AKRF, Inc. is pleased to submit this Phase I Environmental Site Assessment Report for the above-referenced Property. This report includes the findings of a reconnaissance of the Property, an evaluation of readily available historical information and selected environmental databases and electronic records. AKRF, Inc. met the requirements of American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 unless noted otherwise in Section 8.0: "Limitations and Data Gaps".

We appreciate the opportunity to provide you with our services. If you should have any questions, please do not hesitate to contact us.

Sincerely,
AKRF, Inc.

Neoma Chefalo, MPH
Senior Environmental Professional

Marcus Simons
Senior Vice President

EXECUTIVE SUMMARY

AKRF, Inc. (AKRF) was retained by ArchCare to perform a Phase I Environmental Site Assessment (ESA) of the Terence Cardinal Cooke Health Center (TCC) campus located on the block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15) in Manhattan (the "Property"). At the time of the reconnaissance, the Property included the Flower Hill Hospital (FHH) Building, the Annex Building, and the Cohen Building (Block 1611, Lot 1) with an ancillary parking garage (Block 1611, Lot 15), as shown on Figure 2. The surrounding area was primarily mixed-use commercial/residential, with some institutional uses and Central Park located across Fifth Avenue, west of the facility. The hospital structures were developed in their current configuration between approximately 1921 and 1962, and the parking structure was constructed in 1973 according to historical Sanborn maps.

This Phase I Environmental Site Assessment was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Any exceptions to, or deletions from, the Standard are described in Section 8.0. The term "Recognized Environmental Condition" (REC) means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of Historic REC, Controlled REC and *De Minimis* Condition.

A summary of the assessment findings is presented below:

Recognized Environmental Conditions

- The Property was registered on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) Program (Facility ID # 2-400114) with several closed and in-service diesel and fuel oil underground and aboveground storage tanks ranging in size from 50- to 20,000-gallons. A spill (No. 0403835) was reported for the Property in 2004 due to a leaking No. 6 fuel oil UST discovered during tank removal activities, with surrounding soil/groundwater contamination. Subsequent remedial activities were conducted intermittently between approximately 2009 and 2017, including vacuum-enhanced free-phase petroleum product recovery events in conjunction with monitoring well gauging/sampling. The spill achieved regulatory closure in March 2018 after NYSDEC determined that free-phase petroleum product had decreased following remedial actions. Although the spill achieved regulatory closure, given the nature of the spill (free-phase petroleum product on the water table), contamination may still be present beneath the Property.
- Historical Sanborn maps and the regulatory database information indicated nearby facilities, including two dry cleaning facilities within 100 feet (one of which is still active and listed as a generator of solvent wastes) and nearby historical automotive facilities and printers with some potential to have affected the Property subsurface.
- Historic chemical handling associated with former laboratories and/or photo processing/development of x-rays from former hospital uses could have affected subsurface conditions at the Property.

Other on-site environmental concerns

- The Property was listed in the database information as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous wastes typically associated with medical facilities, including corrosive wastes, ignitable wastes, pharmaceutical wastes, acetic acid, 1,4-dioxane and phenol, between 1982 and 2006. No violations were reported.

- Based on the age of the buildings, electrical equipment, caulking, hydraulic equipment and lighting fixtures may include polychlorinated biphenyls (PCB) or mercury-containing components. No obvious leaks or odors were observed in connection with observed equipment or the lighting fixtures.
- Suspect asbestos-containing materials (ACM) were observed (based on the age of the buildings, ACM would be anticipated) during the reconnaissance and included: vinyl and ceramic floor tiles and associated mastics, joint compound, tile grout and adhesive, suspended ceiling tiles, pipe insulation, duct insulation, electrical panels, fire doors, caulks, putties, brick and block mortar, and roofing materials. Suspect ACM were noted to be in generally good to fair condition.
- Based on the age of the buildings, lead-based paint may be present on indoor and outdoor surfaces. Painted surfaces were observed to be in generally good to fair condition, with some damaged paint noted in mechanical areas.
- Buried demolition debris from historical on-site structures (which may include ACM, LBP, and/or USTs) and/or historical fill material may be present beneath the Property.

Recommendations

- Prior to any significant subsurface disturbance, a subsurface (Phase II) investigation should be conducted in areas of potential excavation (and in the area of historical/current USTs) to ensure that soil/fill excavation/disposal and dewatering are conducted in accordance with applicable regulations.
- If renovation/redevelopment activities requiring soil disturbance are conducted, all excavated soil should be managed in accordance with applicable regulatory requirements. All soil and any other materials intended for off-site disposal should be tested in accordance with the requirements of the intended receiving facility. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. If contaminated soil or unforeseen underground storage tanks are discovered during soil excavation activities, they should be removed and disposed of in accordance with applicable regulatory requirements, including those relating to tank registration and spill reporting, if necessary. Any evidence of a petroleum spill should be reported to NYSDEC and addressed in accordance with applicable requirements.
- Prior to any renovation or demolition activities with the potential to disturb ACM, an asbestos survey should be conducted. If these materials prove to contain asbestos, they should be properly removed and disposed of in accordance with all state and federal regulations prior to any renovation or demolition that would disturb those materials.
- If dewatering is required during potential future construction activities, water must be discharged in accordance with New York City Department of Environmental Protection (NYCDEP) requirements.
- Unless there is labeling or test data that indicates that fluorescent lights, caulking, and electrical equipment, are not mercury- and/or PCB-containing, if disposal is required, it should be performed in accordance with applicable federal, state and local regulations and guidelines.
- Any renovation or demolition activities with the potential to disturb lead-based paint must be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*).

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FIGURES

APPENDICES

1.0 INTRODUCTION

AKRF, Inc. (AKRF) was retained by ArchCare to perform a Phase I Environmental Site Assessment (ESA) of the Terence Cardinal Cooke Health Center (TCC) campus located on the block bounded by Fifth and Madison Avenues and East 105th and East 106th Streets (Block 1611, Lots 1 and 15) in Manhattan (the "Property"). At the time of the reconnaissance, the Property included the Flower Hill Hospital (FHH) Building, the Annex Building, and the Cohen Building (Block 1611, Lot 1) with an ancillary parking garage (Block 1611, Lot 15). The surrounding area was primarily mixed-use commercial/residential, with some institutional uses and Central Park located across Fifth Avenue, west of the facility.

The scope of services for this assessment was in conformance with ASTM Standard E1527-13 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice)*. Any exceptions to, or deletions from, this practice are described in Section 8.0. The scope included the following:

- Observations of the Property (reconnaissance) to identify potential sources or indications of hazardous substances, including: aboveground storage tanks (ASTs); underground storage tanks (USTs); tank vents and fill ports; transformers and other items that could contain polychlorinated biphenyls (PCBs), drums or areas where hazardous materials were used, stored, or disposed; stained surfaces and soils; stressed vegetation, leaks, odors. In addition, neighboring properties were viewed, but only from public rights-of-way, to identify similar concerns.
- Readily available geological and groundwater (hydrogeological) information was evaluated to assist in determining the potential for contamination migration (including in soil, soil vapor, and/or groundwater) within, from, and onto the Property.
- The reconnaissance of the Property included observation of any readily visible suspect asbestos-containing materials (ACMs) and potential lead-based paint. However, no samples were collected or analyzed, and this reconnaissance provides neither definitive nor exhaustive information.
- A state database of county-level radon concentrations was used to determine typical indoor radon levels and compare them to United States Environmental Protection Agency (USEPA) guidelines.
- Historical fire insurance maps, topographic maps, and aerial photographs for the Property and nearby properties were reviewed to evaluate historical land uses.
- The following federal regulatory databases were reviewed to determine the regulatory status of the Site and properties within the ASTM-specified radii: National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the Air Discharge Facilities Index (ADF) the USEPA Civil Enforcement Docket. The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.
- The following state regulatory databases were reviewed to determine the regulatory status of the Property, adjacent properties, and properties within a predetermined study area; the listings of hazardous material spills (SPILLS); Resource Conservation and Recovery Act Notifiers (RCRA); Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); Major Oil Storage Facilities (MOSF); Brownfield Sites; and Historic Utility Sites.

- Local agency reviews including NYC Fire Department records (obtained as part of the database search), online Buildings and Finance Departments records, and Environmental Quality Review (CEQR) E Designation Sites were conducted for the Property only.

2.0 PHYSICAL SITE DESCRIPTION

Visual assessment of the Property and adjacent areas was performed on June 15, 2018 by Ms. Neoma Chefalo of AKRF. Mr. Ariel Atrata of Facilities Management for the hospital, accompanied AKRF and answered pertinent questions. The weather was overcast and approximately 80° F, and the visibility good. The Property was inspected for the presence of stained surfaces, storage tanks, drums, leaking pipes, transformers, suspect asbestos-containing materials (ACMs), suspect lead-containing paint, distressed vegetation, and any other evidence of hazardous material usage and storage on-site. Photographs documenting the site inspection are included in Appendix A.

2.1 General Site Conditions

At the time of the reconnaissance, the Property included the Flower Hill Hospital (FHH) Building, the Annex Building, the Cohen Building (Block 1611, Lot 1); and an ancillary parking garage (Block 1611, Lot 15). As noted on Figure 2, the FHH Building and Annex were located on the western and central portions of the block, respectively and the Cohen Research Building and parking garage were located on the eastern portion of the block fronting Madison Avenue. The Property buildings were generally constructed of masonry and brick, and interior finishing materials included gypsum board, plaster and concrete block walls; concrete, ceramic and vinyl floor-tiled floors; and suspended ceiling tiles. Building materials were in generally fair condition, with some damaged and peeling paint noted in mechanical areas. The buildings were heated by high pressure steam provided by a dual natural gas- and fuel oil-fired boiler system. Cooling systems for the buildings included window-mounted air conditioners, package HVAC units and chilling towers. The Property buildings were serviced by traction elevators. The FHH Building, Annex and Cohen Research Building were connected on the cellar level and portions of the ground floor.

FHH Building

The 9-story building (plus cellar and sub-cellar) contained a nursing home and healthcare facility. The basement and sub-basement contained mechanical space, electrical equipment and general storage areas. The first floor contained a lobby/reception area, offices, linen collection/storage areas and the upper floors contained offices, nursing home bedrooms and common areas with a penthouse mechanical room on the roof.

Annex

The 6- to 9-story Annex (plus cellar) contained mechanical space and maintenance storage areas in the cellar and first floor, offices, a kitchen and a lobby on the first floor; and a chapel and medical offices on the upper floors. A 1,000 gallon diesel AST (enclosed in concrete and equipped with a secondary containment structure), located on the first floor, was connected to an emergency generator system with an integral 50-gallon diesel day tank. No odors or staining were noted in the vicinity of the generator or the ASTs. The associated fill and vent piping were mounted on the southern exterior wall of the building, with no associated stains or odors noted.

Cohen Building

The 9-story building (plus cellar and sub-cellar) contained mechanical space and maintenance storage areas in the cellar and sub-cellar, including a boiler room located in the cellar level containing two high-pressure steam boilers. The boiler system primarily operated on natural gas with a secondary fuel oil backup system. The associated 20,000-gallon No. 2 fuel oil UST was located in a vault beneath the East 106th Street sidewalk and the fill port and vent pipe were located immediately outside of the northern portion of the building within the sidewalk, with no apparent stains or odors noted. Floor drains were noted throughout the boiler room with no staining or evidence of a petroleum/chemical release observed. Water treatment chemicals for the boiler system and water distribution piping were observed in the cellar in containers ranging from approximately 5 to 55-gallons. No leaks or spills were noted in connection with the water treatment chemicals, which are maintained by private contractors according to site personnel. The upper floors contained offices, a dialysis center, nursing home bedrooms and penthouse mechanical equipment.

Parking Garage

A steel and concrete open-air parking structure of slab-on-grade construction with eight parking decks adjoined the Cohen building to the south. The structure was used for employee/visitor parking, with some general refuse storage in dumpsters noted on the first floor. No evidence of a material release was noted in the structure.

2.2 Topography and Hydrogeology

Topography at the Property was relatively level. Based on the U.S. Geological Survey, Central Park, NY Quadrangle (2013) map, the Property is approximately 20 feet above the National Geodetic Vertical Datum of 1988 (an approximation of mean sea level).

Groundwater is anticipated to be approximately 13 feet below grade based on previous subsurface investigations included in the regulatory database information (See Section 5.2.2) and is assumed to flow in an easterly to southeasterly direction toward the Harlem River, located approximately 0.75 miles away. However, actual groundwater flow can be affected by many factors including subway tunnels, underground utilities, and other factors beyond the scope of this study. Groundwater in Manhattan is not used as a source of drinking water.

2.3 Storage Tanks

2.3.1 Underground Storage Tanks (USTs)/Aboveground Storage Tanks (ASTs)

The Property was registered on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) Program (Facility ID #2-400114) with the following tanks:

Location	Capacity (gallons)	Product Stored	Install Date	Status
TCC Care Center Facility ID: 2-400114	20,000 AST	No. 6 Fuel Oil	1962	Closed-Removed
	20,000 UST	No. 6 Fuel Oil	2004	In Service
	20,000 UST	No. 6 Fuel Oil	1962	Out of Service
	15,000 AST	No. 6 Fuel Oil	N/A	Closed-Removed
	1,000 UST	Diesel	2004	In-Service
	50 AST	Diesel	2004	In-Service

UST: underground storage tank AST: aboveground storage tank

The in-service 20,000-gallon UST appears to have been converted to No. 2 fuel oil; PBS records may not be up-to-date.

Off-site storage tanks are discussed in Section 5.2.2.

2.4 Polychlorinated Biphenyls (PCBs) and Mercury

Until 1979, polychlorinated biphenyls (PCBs), which provided beneficial insulating properties, were used in a variety of products, in particular electrical equipment such as transformers, capacitors, fluorescent light fixtures, and voltage regulators, but also in hydraulic fluids and some other products such as caulking.

Based on the age of the buildings, electrical equipment, caulk, hydraulic equipment, and lighting fixtures, switches and thermostats may include PCB- or mercury-containing components. No obvious leaks or odors were noted in connection with observed equipment or the lighting fixtures.

2.5 Lead-Based Paint

Lead-based paint was generally not used inside residential buildings after 1977 nationwide. After 1977, its use inside commercial structures was also restricted and its use elsewhere became less common, but lead-based paint may still sometimes be used outdoors. Lead-based paint can present a hazard, particularly to children, especially when it is in poor condition.

Based on the age of the buildings, lead-based paint may be present on and within the Property structures. Painted surfaces were observed to be in generally good to fair condition, with some damaged paint noted within mechanical/utility spaces. Any renovation activities with the potential to disturb lead-based paint must be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).

2.6 Utilities

Consolidated Edison (ConEd) provided electricity and natural gas to the Property and surrounding area. The Property was connected to the New York City municipal water and sanitary/storm sewer systems.

2.7 Waste Management and Chemical Handling

Private haulers removed solid waste from the Property, including general refuse, soiled linens, small amounts of biohazardous/medical wastes, and universal wastes. The Property was identified in the regulatory databases as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous wastes typically associated with medical facilities, including: corrosive wastes, ignitable wastes, pharmaceutical wastes, acetic acid, 1,4-dioxane and phenol, between 1982 and 2006. No violations were reported. Water treatment chemicals for the boiler system and water distribution piping were observed in the cellar of the Cohen Building in containers ranging from approximately 5 to 55-gallons, with no associated releases observed.

2.8 Radon

Radon is a colorless, odorless radioactive gas that results from the natural breakdown of uranium minerals in soil, rock, and water, which subsequently enters the atmosphere. It can concentrate in buildings, entering through cracks and other penetrations of a building foundation. Some areas are more likely to have elevated concentrations of radon than others, reflecting subsurface lithologic conditions.

The New York State Department of Health (NYSDOH) maintains a database of radon test results on a local and county level. According to NYSDOH, 119 radon tests were conducted in Manhattan in October 2017. The average basement radon level was found to be 2.07 picoCuries per liter (pCi/L), below the USEPA recommended action level of 4.0 pCi/L.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Asbestos refers to a group of natural minerals that provide good fire resistance and insulation. Asbestos is also commonly found in vinyl flooring, plaster, sheetrock, joint compound, ceiling tiles, roofing materials, gaskets, mastics, caulks and other products. Materials containing more than one percent asbestos are considered asbestos-containing materials (ACM). ACM are classified as either friable (i.e., more readily release fibers, such as most spray-applied fireproofing) or non-friable (such as floor tiles).

Suspect ACM were observed during the reconnaissance and included: vinyl floor tiles and associated mastic, joint compound, tile grout and adhesive, suspended ceiling tiles, pipe insulation, duct insulation, electrical panels, fire doors, caulks, putties, brick and block mortar, and roofing materials. Suspect ACM were noted to be in good to fair condition. ACM may also be present in other locations not readily accessible during the reconnaissance. This reconnaissance did not constitute and cannot substitute for an asbestos survey, which includes comprehensive inspection and material sampling with laboratory testing.

Regulatory requirements for ACM (or suspect ACM until proven not to be ACM) include maintenance requirements and, prior to any renovation or demolition, inspection/sampling by a NYS-certified asbestos inspector to determine if the project will disturb ACM. Any such ACM (and any other ACM subsequently identified) must be removed prior to the renovation or demolition.

4.0 ADJACENT LAND USE

The Property was abutted to the north by East 106th Street and a high-rise apartment building with street-level retail including a dry cleaner (with on-premises cleaning noted on the storefront) along Madison Avenue and East 106th Street; to the east by Madison Avenue, followed by the Carver Houses public housing complex; to the south by East 105th Street, followed by mixed-use commercial and residential buildings and a public school and museum; and to the west by Fifth Avenue, followed by Central Park.

5.0 PROPERTY HISTORY AND RECORDS REVIEW

5.1 Prior Ownership and Usage

5.1.1 Historical Land Use maps

Historical insurance maps were reviewed for indications of uses (or other evidence) suggesting hazardous materials generation, usage, or disposal on or near the Property. Specifically, Sanborn Fire Insurance Maps from 1896, 1911, 1939, 1951, 1968, 1979, 1986, 1991, 1996 and 2005 were reviewed.

1896

The Property consisted of low-rise dwellings and row houses.

The surrounding blocks comprised row houses, dwellings and vacant land and Central Park to the west across Fifth Avenue.

1911

Several dwellings had been razed on the western portion of the block.

Denser residential development was shown on the surrounding blocks and a public school was noted two blocks south of the Property.

1939

The current Nursing Home building (labeled as Fifth Avenue Hospital) was shown on the western portion of the block with a construction date of 1921 and the current Annex building (labeled as the New York Medical College Flower Hospital) was noted on the central portion of the block, with a construction date of 1938-1939.

Several former residential structures had been razed on the north-adjacent block. A large municipal building labeled Society for the Prevention of Cruelty to Children Children's Building was noted on the western portion of the south-adjacent block. Several printers and an auto brake service shop were noted on the eastern portion of the south-adjacent block. The Museum of the City of NY was noted two blocks to the south. No further significant changes were noted in the surrounding neighborhood from the 1911 map.

1951

The Property appeared similar to the 1939 Sanborn map.

The Society for the Prevention of Cruelty to Children structure on the south-adjacent block was also labeled as a public school. No further significant changes were noted in the surrounding neighborhood from the 1939 map.

1969

The current Cohen Research Building was shown on the eastern portion of the block (with a construction date of 1962) and a small one-story structure labeled as the Flower Hospital Psychiatry Department and a small store were noted to the south of the Cohen Building.

The north-adjacent block was vacant. Two drycleaners were noted on the eastern portion of the south-adjacent block along Madison Avenue. Blocks east and southeast of the Property were developed with the Carver Houses public housing complex.

1979-1986

The current parking garage was shown on the southeastern portion of the Property, noted as constructed in 1979.

The north-adjacent block contained the Fifth Avenue Lakeview Apartment complex with a parking garage and storefront along Madison Avenue. The school structure on the south-adjacent block was labeled as the East Harlem Art and Educational Complex.

1996

The Property and surrounding area appeared similar to the 1986 Sanborn map. Several vacant lots were noted on the south-adjacent block.

2005

The Property appeared similar to the 1996 Sanborn map.

In summary, historical Sanborn maps indicated that the Property residential structures by 1896, prior to the construction of the FHH and Annex Buildings (constructed between circa 1921 and 1939). The Cohen Research Building was noted on the eastern portion of the block on the 1969 map (with a construction date of 1962) and the current parking structure was noted on the 1979 map (with a construction date on 1973), replacing a former psychiatric unit structure. Buried demolition debris from historical on-site structures (which may include ACM, LBP, and/or USTs) and/or historical fill material may be present beneath the Property.

The surrounding neighborhood was primarily mixed-use, with some automotive/industrial facilities shown between 1939 and 2005 including an auto break repair shop, printers and two drycleaners on the south-adjacent block.

5.1.2 Property Tax Files and Zoning Records

Based on NYC Department of City Planning's Zoning and Land Use Map (ZoLa), the Property is zoned as R7-2 (Residential) with a C1-5 Commercial Overlay.

5.1.3 Recorded Land Title Records

Copies of title records were not provided to AKRF for review. Copies of title records were not provided to AKRF for review. A review of computerized New York City Automated City Register Information System (ACRIS) records, which included records of financial transactions involving the Property, identified no environmental liens or use restrictions for the Property.

5.2 Regulatory Review

Regulatory database information, as shown in Appendix C, was obtained from EDR, Inc. of Shelton, CT. The Introduction of Appendix C includes summaries of the databases searched, their radii around the Property and limitations of the data. The databases searched and associated radii were consistent with ASTM E1527-13.

5.2.1 Federal

The federal databases searched included the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); the Permit Compliance System of Toxic Wastewater Discharges (WWD); the USEPA Civil Enforcement Docket; and the Air Discharge Facilities (ADF). The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.

The federal databases searched included the National Priority List (NPL); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); Superfund Enterprise Management System Archive (SEMS-ARCHIVE), Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); and Federal Institutional Control/Engineering Control Registries. The federal listing of facilities which are subject to corrective action under the Resource Conservation and Recovery Act (CORRACTS) is discussed with the State databases of RCRA listings.

National Priority List (NPL)

The NPL is the USEPA's compilation of some sites that probably remedial action under the Superfund Program. NPL sites can pose a significant risk of stigmatizing surrounding properties and thus impacting property values.

No NPL sites were identified within a one-mile radius of the Property.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

CERCLIS is a compilation of sites which the USEPA has investigated, or plans to investigate, pursuant to the Superfund Act of 1980 (CERCLA). As such, some of these sites may ultimately present concerns and others may not (but could still pose a perceived threat, thus affecting property values).

No CERCLIS sites were identified within a ½-mile radius of the Property.

SEMS-ARCHIVE (Superfund Enterprise Management System Archive)

This database tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.

No SEMS-Archive sites were identified within a ½-mile radius of the Property.

Emergency Response Notification System (ERNS)

This federal database, compiled by the Emergency Response Notification System, records and stores information on certain reported releases of petroleum and other potentially hazardous substances.

No ERNS listings were identified as potentially located on the Property in the database information.

Toxic Chemical Release Inventory System (TRIS)

The TRIS contains information reported by a variety of industries on their annual estimated releases of certain chemicals.

No TRIS sites were identified within a ⅛-mile radius of the Property.

Federal Institutional Control/Engineering Control Registries

These registries are listings of sites with engineering and institutional controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site.

The Property was not listed in the Federal Institutional Control/Engineering Control Registries database.

5.2.2 State

The state records reviewed included listings of hazardous material spills; Resource Conservation and Recovery Act (RCRA) Notifiers; Chemical Bulk Storage (CBS); Solid Waste Facilities (SWF); Petroleum Bulk Storage (PBS); State Inactive Hazardous Waste Disposal Sites (SHWS); State Hazardous Substance Waste Disposal Sites (SHSWDS); Major Oil Storage Facilities (MOSF); Brownfield Sites; Environmental Restoration Program (ERP) sites; Voluntary Cleanup Program (VCP) sites, and Brownfield Cleanup Program (BCP) sites.

New York SPILLS Database

This database includes releases reported to the NYSDEC, including tank test failures (for USTs only) and tank failures.

A total of 325 spills were reported within a ½-mile radius of the Property, including 64 LTANKS and 261 NY Spills sites. The Property was listed on the NY Spills database as follows:

- Closed status spill No. 0403835 was reported in July 2004 at the Terrence Cardinal Cooke Medical Center. According to the spill listing, an unknown leaking No. 6 fuel oil UST was discovered within a vault during tank removal activities, with several feet of fuel oil noted in the vault. The file notes indicated that surrounding sewers were impacted and several inches of free-phase petroleum product were noted atop perched water (above bedrock) during a subsequent subsurface investigation conducted to delineate contamination from the leaking tank. Groundwater was noted to be approximately 13 feet below grade in the file report. The file notes indicated that remedial activities were conducted, including removal of the tank, cleaning of the vault and surrounding sewers; and several rounds of vacuum-enhanced fluid recovery events in several monitoring wells installed in the vicinity of the tank. In 2009, NYSDEC reviewed a report documenting monitoring well gauging events which encountered some floating product and sheen on the water table in several of the wells. Subsequent quarterly sampling and fluid recovery events documented limited free-phase petroleum product and somewhat elevated dissolved VOC concentrations above TAGM guidelines (the guidelines used at that time). According to the spill file, oil seepage was noted within the vault of the former fuel oil tank on several occasions in 2010-2011. In 2014, after a delay in remedial activities due to financial issues, product recovery events from the monitoring wells and tank vault resumed and continued through 2017, according to the file notes. The spill achieved a closed regulatory status in March 2018 after NYSDEC determined that given the low amounts of free product detected following remedial actions and the limited mobility of No. 6 fuel oil, any residual product would not be a threat to the public or the environment.
- Additional closed spills (Spill Nos. 9505534 and 9608923) were listed for the Property in 1995 and 1996, respectively due to small spills (reportedly 10 gallons or less) of fuel oil spilled on the sidewalk during fuel oil deliveries; corrective actions were initiated and the spills were closed on the same day of issuance.

Although Spill No. 0403835 achieved regulatory closure, given the nature of the spill (free-phase petroleum product on the water table), fuel oil contamination may still be present beneath the Property. Based on listing details, including nature of the spills, distance from the Property, and/or inferred groundwater flow direction, the remaining listed spills would not be expected to have significantly affected subsurface conditions at the Property. Details from all spills are included in Appendix C.

Resource Conservation and Recovery Act (RCRA) Notifiers Listings

This database lists sites that have filed notification forms regarding hazardous waste activity, including: treatment, storage and disposal facilities (TSDs); small-quantity (SQG) and large-quantity generators (LQG); and transporters regulated under RCRA. The discussion below includes any CORRACTS listings of facilities that are subject to corrective action under RCRA.

No CORRACTS sites were listed within a one-mile radius of the Property. No TSD facilities were listed within a one-half mile radius of the Property and 5 Generators/Transporters and 29 non-generators were reported within a ⅛-mile radius of the Property. The Property was listed with the following information:

- Flower Hospital/1249 Fifth Avenue (Facility ID NYD043037837) was listed as a historical SQG and a CESQG for various waste streams including corrosive wastes, ignitable wastes, pharmaceutical wastes, acetic acid, 1,4-dioxane and phenol, between 1982 and 2006. No violations were reported.

The following off-site listing has some potential to have affected subsurface conditions beneath the Property:

- 106 Street French Dry Cleaners located at 1590 Madison Avenue, approximately 100 feet north of the Property, was listed as an unspecified generator and historical SQG and CESQG of spent halogenated solvents in 2003. No violations were reported.

Based on their locations or listing details (i.e., waste type), the remaining RCRA facilities, including Con Ed listings associated with utility vaults in the sidewalks in front of or near the Property, are not anticipated to affect the Property (releases within utility vaults tend to be contained within the vaulted structures).

Chemical Bulk Storage (CBS) Database

The New York CBS is a list of facilities that store regulated non-petroleum substances in aboveground tanks with capacities greater than 185 gallons and/or in underground tanks of any size.

No CBS facilities are listed within a ⅛-mile radius of the Property.

Solid Waste Facilities (SWF)

This database includes certain landfills, incinerators, transfer stations, recycling centers, and other sites which manage solid waste.

No Solid Waste Facilities were identified within a ½-mile radius of the Property.

Petroleum Bulk Storage (PBS) Database

This database lists facilities that registered having either aboveground or underground petroleum tanks with total storage exceeding 1,100 gallons. Facilities with more than 400,000 gallons appear on the Major Oil Storage Facilities (MOSF) database (see below).

Sixteen PBS facilities (including the Property) were identified within a ⅛-mile radius of the Property. Details for the Property and nearest off-site listings are provided in Table 2:

Table 2. Petroleum Bulk Storage Facility Data

Location	Capacity (gallons)	Product Stored	Install Date	Status	Approximate Distance/Direction from Site
TCC Care Center Facility ID: 2-400114	20,000 AST	No. 6 Fuel Oil	1962	Closed-Removed	Property
	20,000 UST	No. 6 Fuel Oil	2004	In Service	
	20,000 UST	No. 6 Fuel Oil	1962	Out of Service	
	15,000 AST	No. 6 Fuel Oil	N/A	Closed-Removed	

Location	Capacity (gallons)	Product Stored	Install Date	Status	Approximate Distance/Direction from Site
	1,000 UST	Diesel	2004	In-Service	
	50 AST	Diesel	2004	In-Service	

UST: underground storage tank AST: aboveground storage tank

The in-service 20,000-gallon UST appears to have been converted to No. 2 fuel oil; PBS records may not be up-to-date. Based on listing details, distance from the Property, and/or inferred groundwater flow direction, the remaining listed PBS facilities would not be expected to have significantly affected the Property. Details of the additional PBS facilities located within ¼ mile of the Property are included in Appendix C.

State Inactive Hazardous Waste Disposal Site Registry (SHWS)

This program (also known as State Superfund) lists information regarding a variety of sites likely requiring cleanup.

No State Inactive Hazardous Waste Disposal Sites were reported within a one-mile radius of the Property.

State Hazardous Substance Waste Disposal Site Study (SHSWDS)

This database tracks certain sites that were not listed on SHWS, but may still require investigation and/or cleanup.

No SHSWDS facilities were identified within a ½-mile radius of the Property.

Major Oil Storage Facilities (MOSF) Database

These facilities have petroleum storage of 400,000 gallons or more.

No Major Oil Storage Facilities were reported within a ½-mile radius of the Property.

Environmental Restoration Program

These sites (which are generally municipally-owned) are receiving New York State funding for site investigation and remediation. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No ERP sites were identified within a ½-mile radius of the Property.

Voluntary Cleanup Program/Brownfield Cleanup Program

The Voluntary Cleanup Program (VCP) is a NYSDEC program for investigation and remediation of (generally) privately-owned sites. Some sites in this program have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present. The Brownfield Cleanup Program (BCP) program is the successor to the Voluntary Cleanup Program. Again, some sites have known contamination, whereas others have not had sufficient investigation to determine whether contamination is present.

No VCP/BCP sites were identified within ½-mile of the Property.

New York City (E) Designation Site Listing

A New York City (E) designation for a property requires that the owner conduct a testing and sampling protocol, and remediation where appropriate, to the satisfaction of the New York City Office of Environmental Remediation (NYCOER) before the issuance of a building permit by the Department of Buildings pursuant to the provisions of Section 11-15 of the Zoning Resolution (Environmental Requirements).

The Property was not assigned E-designations, per the database information.

Registered Dry Cleaners/EDR US Hist Cleaners

The registered dry cleaners database was researched to identify listings within one-quarter mile of the Site. As a supplement to the registered dry cleaners database, EDR's proprietary listing of potential drycleaner sites (listings based on the opinion of EDR) was also reviewed.

The Site was not listed in the EDR US Hist Cleaners database. Two US EDR Hist Cleaners sites were listed within a one-half mile radius of the Site:

- Fifth Avenue Lakeview French Cleaners located at 1590 Madison Avenue, approximately 100 feet north of the Property was listed by EDR as a "drycleaning plant" between 1983 and 2012 (the facility is also listed as a RCRA generator of solvent wastes, as noted previously).
- Instant Dry Cleaners located at 1540 Madison Avenue, approximately 100 feet south of the Property was listed by EDR as a "drycleaning plant" between 1975 and 1979.

Based on proximity, undocumented releases (i.e., of dry cleaning solvents) from these facilities may have affected area subsurface conditions.

5.2.3 Local Agency File Review

Electronic NYCDOB records for the Property were reviewed to determine whether there were any references to buildings, tanks or other structures, property usage or inspection reports that may have indicated the presence, past use, or release of hazardous substances, wastes or petroleum products within the Property. Electronic files associated with the Property included:

Buildings Department (DOB)

Computerized Buildings Department records for the Property tax lot identified the following:

Block 1611, Lot 1:

- A 1922 Certificate of Occupancy (C of O) for an 11-story (plus two cellar levels) hospital building.
- A 1939 (C of O) for an 11-story (plus two cellar levels) for an 11-story hospital building (plus 8-story Annex) with a boiler room and morgue in the cellar, kitchen, laundry, clinic and waiting areas on the basement/ground level and hospital use/laboratories on the upper floors.
- A 1984 Temporary C of O (TCO) for an 11-story nursing home with a boiler room/mechanical space in the cellar and sub-cellar, nursing home facilities, offices and recreation rooms on the upper floors and mechanical space on the penthouse and roof.

- A 2001 TCO for an 11-story nursing home with a boiler room/mechanical space in the cellar and sub-cellar, nursing home facilities, offices and recreation rooms on the upper floors (with some vacant areas noted on the Cohen Building) and mechanical space on the penthouse and roof.
- A 2017 work application for the closure of one 20,000-gallon fuel oil tank

Block 1611, Lot 15:

- Several 1941 C of Os for a tenement buildings and a store.
- A 1973 C of O for a parking structure with 7 decks and rooftop parking.

Historic chemical handling associated with former laboratories and/or photo processing/development of x-rays in the former hospital could have affected subsurface conditions at the Property.

Department of Finance

Electronic property transaction records for the Property Block and Lot were reviewed from the New York City Department of Finance Office Automated City Register Information System (ACRIS). No relevant files were identified.

New York City Department of Environmental Protection (NYCDEP)

AKRF sent a Freedom of Information Law (FOIL) request to the NYCDEP on June 27, 2018 pertaining to environmental records. As of the date of this report, NYCDEP has not responded to the records request. If issues of potential concern are noted upon receipt of this information, an addendum to this report will be created to discuss relevant findings.

5.2.4 Additional Environmental Record Sources

To enhance the search, ASTM requires that additional local records be reviewed (i.e., beyond those included as part of the standard database search or checked online) when, in judgment of the environmental professional, such records for the Property or any adjoining property would be reasonably ascertainable; and useful, accurate and complete in light of the objective of the records review. These records include:

- Local brownfields lists
- Local lists of landfill/solid waste disposal sites
- Local lists of hazardous waste/contaminated Sites
- Local lists of registered tanks
- Local land records (for activity use limitations)
- Records of emergency release reports
- Records of contaminated public wells

Sources for these records include:

- Fire Department
- Local/Regional Water Quality Agency
- Local Electric Utility (for PCB records)

In addition to the Local Agency File Review, AKRF sent a FOIL request to the New York State Department of Environmental Conservation (NYSDEC) Region 2 on June 28, 2018 for the Property to determine whether pertinent environmental records for the Property could be obtained for further review. As of the date of this report, NYSDEC has not responded to the records request. If issues of potential concern are noted upon receipt of this information, an addendum to this report will be created to discuss relevant findings.

In AKRF's judgment, no such additional local records meeting the ASTM criteria are pertinent for the Property.

6.0 USER-PROVIDED INFORMATION

In preparing this Phase I ESA, AKRF requested that the client provide any pertinent information regarding the Property, specifically:

- The reason for performing the Phase I ESA;
- Whether they were aware of any pertinent current or historic activities at or near the Property, including but not limited to: hazardous substances or petroleum, waste management practices, filling or disposal drains, septic/sewer systems, and potable and non-potable wells;
- Owner and occupant information and whether they were aware of any previous Phase I ESAs or other potentially pertinent reports, plans or information;
- Whether any *environmental liens* or *activity and land use limitations* are in place or filed or recorded against the Property or whether there was pending, threatened, ongoing or past violations, litigation or enforcement action relevant to hazardous substances or petroleum products;
- Whether they had any specialized knowledge or experience related to the Property or nearby properties (e.g., specialized knowledge of the chemicals used by this type of business);
- Whether the (anticipated) purchase price reflects that the Property is or could be contaminated; and
- Whether they were aware of commonly known or reasonably ascertainable information about environmental conditions of the Property including current/past uses of the Property and adjacent properties.

The Phase I ESA was conducted to provide preliminary environmental information as part of due diligence for the proposed renovation/redevelopment of the Property buildings. To the extent that pertinent additional information was provided, it has been summarized elsewhere in this report.

7.0 PREVIOUS STUDIES

No previous studies were provided.

8.0 LIMITATIONS AND DATA GAPS

This assessment met the requirements of the American Society for Testing and Materials (ASTM) as established by ASTM Standard E1527-13 at the time it was performed, with the following limitations:

- Results of this investigation are valid as of the dates on which the investigation was performed.
- The site reconnaissance was limited to the basements, mechanical spaces, chemical storage areas, waste accumulation areas, and exterior portions of the Property. Patient rooms, nursing home bedrooms and private offices were not accessible for inspection.

- Interviews and user provided information were limited to those discussed in Section 6.0. To the extent that interviews were not conducted with the list of interviewees cited in the ASTM Standard (past and present owners, operators, and occupants of the Property and local government officials), AKRF does not believe that this represents a significant data gap likely to result in additional or significantly changed recognized environmental conditions or conclusions.
- The Property area history was not conducted in five-year intervals. However, sufficient information about the history of the site and surrounding area could be obtained from the available historical Sanborn and topographic maps, Buildings Department records, and interviews, and this data gap is not likely to alter the conclusions of this report.
- Agency file reviews for the Property and adjacent properties consisted of a review of standard databases and electronic records maintained by pertinent departments and agencies (summarized in Section 5.2). AKRF believes that this file review was sufficient in determining the potential for recognized environmental conditions or other environmental concerns at the Property and additional reviews beyond this are not warranted and would not likely change the conclusions of this assessment.

9.0 FINDINGS

A summary of the assessment findings is presented below:

Recognized Environmental Conditions

- The Property was registered on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) Program (Facility ID # 2-400114) with several closed and in-service diesel and fuel oil underground and aboveground storage tanks ranging in size from 50- to 20,000-gallons. A spill (No. 0403835) was reported for the Property in 2004 due to a leaking No. 6 fuel oil UST discovered during tank removal activities, with surrounding soil/groundwater contamination. Subsequent remedial activities were conducted intermittently between approximately 2009 and 2017, including vacuum-enhanced free-phase petroleum product recovery events in conjunction with monitoring well gauging/sampling. The spill achieved regulatory closure in March 2018 after NYSDEC determined that free-phase petroleum product had decreased following remedial actions. Although the spill achieved regulatory closure, given the nature of the spill (free-phase petroleum product on the water table), contamination may still be present beneath the Property.
- Historical Sanborn maps and the regulatory database information indicated nearby facilities, including two dry cleaning facilities within 100 feet (one of which is still active and listed as a generator of solvent wastes) and nearby historical automotive facilities and printers with some potential to have affected the Property subsurface.
- Historic chemical handling associated with former laboratories and/or photo processing/development of x-rays from former hospital uses could have affected subsurface conditions at the Property.

Other on-site environmental concerns

- The Property was listed in the database information as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous wastes typically associated with medical facilities, including corrosive wastes, ignitable wastes, pharmaceutical wastes, acetic acid, 1,4-dioxane and phenol, between 1982 and 2006. No violations were reported.
- Based on the age of the buildings, electrical equipment, caulking, hydraulic equipment and lighting fixtures may include polychlorinated biphenyls (PCB) or mercury-containing components. No obvious leaks or odors were observed in connection with observed equipment or the lighting fixtures.
- Suspect asbestos-containing materials (ACM) were observed (based on the age of the buildings, ACM would be anticipated) during the reconnaissance and included: vinyl and ceramic floor tiles and associated mastics, joint compound, tile grout and adhesive, suspended ceiling tiles, pipe insulation, duct insulation, electrical panels, fire doors, caulks, putties, brick and block mortar, and roofing materials. Suspect ACM were noted to be in generally good to fair condition.
- Based on the age of the buildings, lead-based paint may be present on indoor and outdoor surfaces. Painted surfaces were observed to be in generally good to fair condition, with some damaged paint noted in mechanical areas.
- Buried demolition debris from historical on-site structures (which may include ACM, LBP, and/or USTs) and/or historical fill material may be present beneath the Property.

10.0 RECOMMENDATIONS

- Prior to any significant subsurface disturbance, a subsurface (Phase II) investigation should be conducted in areas of potential excavation (and in the area of historical/current USTs) to ensure that soil/fill excavation/disposal and dewatering are conducted in accordance with applicable regulations.
- If renovation/redevelopment activities requiring soil disturbance are conducted, all excavated soil should be managed in accordance with applicable regulatory requirements. All soil and any other materials intended for off-site disposal should be tested in accordance with the requirements of the intended receiving facility. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. If contaminated soil or unforeseen underground storage tanks are discovered during soil excavation activities, they should be removed and disposed of in accordance with applicable regulatory requirements, including those relating to tank registration and spill reporting, if necessary. Any evidence of a petroleum spill should be reported to NYSDEC and addressed in accordance with applicable requirements.
- Prior to any renovation or demolition activities with the potential to disturb ACM, an asbestos survey should be conducted. If these materials prove to contain asbestos, they should be properly removed and disposed of in accordance with all state and federal regulations prior to any renovation or demolition that would disturb those materials.
- If dewatering is required during potential future construction activities, water must be discharged in accordance with New York City Department of Environmental Protection (NYCDEP) requirements.
- Unless there is labeling or test data that indicates that fluorescent lights, caulking, and electrical equipment, are not mercury- and/or PCB-containing, if disposal is required, it should be performed in accordance with applicable federal, state and local regulations and guidelines.
- Any renovation or demolition activities with the potential to disturb lead-based paint must be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*).

11.0 SIGNATURE PAGE

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property for which the assessment was performed. We have performed all the appropriate inquiries in conformance with standards and practices set forth in 40 CFR Part 312.

Neoma Chefalo, MPH
Senior Environmental Professional

Marcus Simons
Senior Vice President

12.0 QUALIFICATIONS

The purpose of this assessment was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the property, and to identify existing and/or potential environmental problems associated with the property including *Recognized Environmental Conditions* as defined in ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*.

The assessment was performed in accordance with customary principles and practices in the environmental consulting industry, and in accordance with the above-referenced ASTM Standard, except as noted otherwise in Section 8.0. It should only be used as a guide in determining the possible presence or absence of hazardous materials on the property at the time of the reconnaissance, as it is based upon the review of readily available records relating to both the property and the surrounding area, as well as a visual reconnaissance of current conditions.

This Phase I Assessment is not, and should not be construed as, a guarantee, warranty, or certification of the presence or absence of hazardous substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any hazardous substances which may be subject to regulatory approval. This report is not a regulatory compliance audit.

This report is based on services performed by AKRF, Inc. professional staff and observation of the property and its surroundings. We represent that observations made in this assessment are accurate to the best of our knowledge, and that no findings or observations concerning the potential presence of hazardous substances have been withheld or amended. The research and reconnaissance have been carried to a level that meets accepted industry and professional standards. Nevertheless, AKRF and the undersigned shall have no liability or obligation to any party other than ArchCare and their successors or assignees, and AKRF's obligations and liabilities to the above, their successors or assignees is limited to fraudulent statements made, or grossly negligent or willful acts or omissions.

13.0 REFERENCES

1. EDR Inc., Phase I Environmental Database Report, June 2018.
2. U.S. Geological Survey; *Central Park, N.Y. Quadrangle*, 7.5 minute Series (Topographic), Scale 1:24,000; 2013.
3. New York State Department of Health: Office of Public Health - Environmental Radiation Section, Basement Radon Screening Data, October 2017.
4. Sanborn Insurance Maps dated 1896, 1911, 1939, 1951, 1968, 1979, 1986, 1991, 1996 and 2005.
5. New York City Department of Buildings, Building Information Search Online (http://a810-bisweb.nyc.gov/bisweb).

FIGURES

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

APPENDIX B

HISTORIC SANBORN MAPS

APPENDIX C

REGULATORY DATABASE REPORT

APPENDIX D

LOCAL RECORDS

Appendix 3
Construction

Scenario 1 - Existing Conditions

Select # for Meas. Noise Receptor Sites		Name of Receptor in CadnaA	Select Measurement Period	dBA							
				ExAM L_{eq} at Meas	ExAM L_{10} at Meas	Cadna ExAM L_{eq}	Adjustment Factor at Meas Loc	Min Level (avg Meas L_{90})	Existing L_{eq}	L_{10} Difference	Existing L_{10}
1		Spot Msmt Location 1	AM	68.6	70.6	71.8	-3.2	63.2	68.6	2.0	70.6
2		Spot Msmt Location 2	AM	67.5	69.7	68.6	-1.1	63.2	67.5	2.2	69.7
3		Spot Msmt Location 3	AM	63.8	64.8	63.8	0.0	63.2	63.8	1.0	64.8
4		Spot Msmt Location 4	AM	71.3	74.9	71.7	-0.4	63.2	71.3	3.6	74.9

Noise Receptor Sites	Elevation (floor)	Address/Façade Number (ID)	Input Governing Measurement Loc	dBA							
				ExAM L_{eq} at Meas	ExAM L_{10} at Meas	Cadna ExAM L_{eq}	Adjustment Factor at Meas Loc	Min Level (avg Meas L_{90})	Existing L_{eq}	L_{10} Difference	Existing L_{10}
1	1	Spot Msmt Location 1	1	[redacted]	[redacted]	71.8	-3.2	60.5	68.6	2.0	70.6
2	1	Spot Msmt Location 2	2	[redacted]	[redacted]	68.6	-1.1	60.5	67.5	2.2	69.7
3	1	Spot Msmt Location 3	3	[redacted]	[redacted]	63.8	0.0	60.5	63.8	1.0	64.8
4	1	Spot Msmt Location 4	4	[redacted]	[redacted]	71.7	-0.4	60.5	71.3	3.6	74.9
009A 001.OG	1	009A	3	[redacted]	[redacted]	68.3	0.0	60.5	68.3	1.0	69.3
009A 002.OG	2	009A	3	[redacted]	[redacted]	68.6	0.0	60.5	68.6	1.0	69.6
009A 003.OG	3	009A	3	[redacted]	[redacted]	68.2	0.0	60.5	68.2	1.0	69.2
009A 004.OG	4	009A	3	[redacted]	[redacted]	67.8	0.0	60.5	67.8	1.0	68.8
009A 005.OG	5	009A	3	[redacted]	[redacted]	67.4	0.0	60.5	67.4	1.0	68.4
009A 006.OG	6	009A	3	[redacted]	[redacted]	66.9	0.0	60.5	66.9	1.0	67.9
009A 007.OG	7	009A	3	[redacted]	[redacted]	66.5	0.0	60.5	66.5	1.0	67.5
009A 008.OG	8	009A	3	[redacted]	[redacted]	66.1	0.0	60.5	66.1	1.0	67.1
009A 009.OG	9	009A	3	[redacted]	[redacted]	65.7	0.0	60.5	65.7	1.0	66.7
009A 010.OG	10	009A	3	[redacted]	[redacted]	65.4	0.0	60.5	65.4	1.0	66.4
009A 011.OG	11	009A	3	[redacted]	[redacted]	65.0	0.0	60.5	65.0	1.0	66.0
009B 001.OG	1	009B	3	[redacted]	[redacted]	63.3	0.0	60.5	63.3	1.0	64.3
009B 002.OG	2	009B	3	[redacted]	[redacted]	63.2	0.0	60.5	63.2	1.0	64.2
009B 003.OG	3	009B	3	[redacted]	[redacted]	63.0	0.0	60.5	63.0	1.0	64.0
009B 004.OG	4	009B	3	[redacted]	[redacted]	62.9	0.0	60.5	62.9	1.0	63.9
009B 005.OG	5	009B	3	[redacted]	[redacted]	62.6	0.0	60.5	62.6	1.0	63.6
009B 006.OG	6	009B	3	[redacted]	[redacted]	62.2	0.0	60.5	62.2	1.0	63.2
009B 007.OG	7	009B	3	[redacted]	[redacted]	61.9	0.0	60.5	61.9	1.0	62.9
009B 008.OG	8	009B	3	[redacted]	[redacted]	61.6	0.0	60.5	61.6	1.0	62.6
009B 009.OG	9	009B	3	[redacted]	[redacted]	61.4	0.0	60.5	61.4	1.0	62.4
009B 010.OG	10	009B	3	[redacted]	[redacted]	61.1	0.0	60.5	61.1	1.0	62.1
009B 011.OG	11	009B	3	[redacted]	[redacted]	59.2	0.0	60.5	60.5	1.0	61.5
009C 001.OG	1	009C	3	[redacted]	[redacted]	54.8	0.0	60.5	60.5	1.0	61.5
009C 002.OG	2	009C	3	[redacted]	[redacted]	56.0	0.0	60.5	60.5	1.0	61.5
009C 003.OG	3	009C	3	[redacted]	[redacted]	57.0	0.0	60.5	60.5	1.0	61.5
009C 004.OG	4	009C	3	[redacted]	[redacted]	57.7	0.0	60.5	60.5	1.0	61.5
009C 005.OG	5	009C	3	[redacted]	[redacted]	58.0	0.0	60.5	60.5	1.0	61.5
009C 006.OG	6	009C	3	[redacted]	[redacted]	58.2	0.0	60.5	60.5	1.0	61.5
009C 007.OG	7	009C	3	[redacted]	[redacted]	58.3	0.0	60.5	60.5	1.0	61.5
009C 008.OG	8	009C	3	[redacted]	[redacted]	58.3	0.0	60.5	60.5	1.0	61.5
009C 009.OG	9	009C	3	[redacted]	[redacted]	58.2	0.0	60.5	60.5	1.0	61.5
009C 010.OG	10	009C	3	[redacted]	[redacted]	58.1	0.0	60.5	60.5	1.0	61.5
009C 011.OG	11	009C	3	[redacted]	[redacted]	56.9	0.0	60.5	60.5	1.0	61.5
009E 001.OG	1	009E	3	[redacted]	[redacted]	41.3	0.0	60.5	60.5	1.0	61.5
009E 002.OG	2	009E	3	[redacted]	[redacted]	45.2	0.0	60.5	60.5	1.0	61.5
009E 003.OG	3	009E	3	[redacted]	[redacted]	52.3	0.0	60.5	60.5	1.0	61.5
009E 004.OG	4	009E	3	[redacted]	[redacted]	58.1	0.0	60.5	60.5	1.0	61.5
009E 005.OG	5	009E	3	[redacted]	[redacted]	59.1	0.0	60.5	60.5	1.0	61.5
009E 006.OG	6	009E	3	[redacted]	[redacted]	60.5	0.0	60.5	60.5	1.0	61.5
009E 007.OG	7	009E	3	[redacted]	[redacted]	60.2	0.0	60.5	60.5	1.0	61.5
009E 008.OG	8	009E	3	[redacted]	[redacted]	60.0	0.0	60.5	60.5	1.0	61.5
009E 009.OG	9	009E	3	[redacted]	[redacted]	59.9	0.0	60.5	60.5	1.0	61.5
009E 010.OG	10	009E	3	[redacted]	[redacted]	59.6	0.0	60.5	60.5	1.0	61.5
009E 011.OG	11	009E	3	[redacted]	[redacted]	59.5	0.0	60.5	60.5	1.0	61.5
009G 001.OG	1	009G	3	[redacted]	[redacted]	50.6	0.0	60.5	60.5	1.0	61.5
009G 002.OG	2	009G	3	[redacted]	[redacted]	52.1	0.0	60.5	60.5	1.0	61.5
009G 003.OG	3	009G	3	[redacted]	[redacted]	53.4	0.0	60.5	60.5	1.0	61.5
009G 004.OG	4	009G	3	[redacted]	[redacted]	54.0	0.0	60.5	60.5	1.0	61.5
009G 005.OG	5	009G	3	[redacted]	[redacted]	54.1	0.0	60.5	60.5	1.0	61.5
009G 006.OG	6	009G	3	[redacted]	[redacted]	54.2	0.0	60.5	60.5	1.0	61.5
009G 007.OG	7	009G	3	[redacted]	[redacted]	54.1	0.0	60.5	60.5	1.0	61.5
009G 008.OG	8	009G	3	[redacted]	[redacted]	54.0	0.0	60.5	60.5	1.0	61.5
009G 009.OG	9	009G	3	[redacted]	[redacted]	53.9	0.0	60.5	60.5	1.0	61.5
009G 010.OG	10	009G	3	[redacted]	[redacted]	53.8	0.0	60.5	60.5	1.0	61.5
009G 011.OG	11	009G	3	[redacted]	[redacted]	52.5	0.0	60.5	60.5	1.0	61.5
009I 001.OG	1	009I	3	[redacted]	[redacted]	42.1	0.0	60.5	60.5	1.0	61.5
009I 002.OG	2	009I	3	[redacted]	[redacted]	43.0	0.0	60.5	60.5	1.0	61.5
009I 003.OG	3	009I	3	[redacted]	[redacted]	43.8	0.0	60.5	60.5	1.0	61.5
009I 004.OG	4	009I	3	[redacted]	[redacted]	44.5	0.0	60.5	60.5	1.0	61.5
009I 005.OG	5	009I	3	[redacted]	[redacted]	45.0	0.0	60.5	60.5	1.0	61.5
009I 006.OG	6	009I	3	[redacted]	[redacted]	45.4	0.0	60.5	60.5	1.0	61.5
009I 007.OG	7	009I	3	[redacted]	[redacted]	45.9	0.0	60.5	60.5	1.0	61.5
009I 008.OG	8	009I	3	[redacted]	[redacted]	46.4	0.0	60.5	60.5	1.0	61.5
009I 009.OG	9	009I	3	[redacted]	[redacted]	46.7	0.0	60.5	60.5	1.0	61.5
009I 010.OG	10	009I	3	[redacted]	[redacted]	47.4	0.0	60.5	60.5	1.0	61.5
009I 011.OG	11	009I	3	[redacted]	[redacted]	52.3	0.0	60.5	60.5	1.0	61.5
014A 001.OG	1	014A	2	[redacted]	[redacted]	65.8	-1.1	60.5	64.7	2.2	66.9
014A 002.OG	2	014A	2	[redacted]	[redacted]	66.4	-1.1	60.5	65.3	2.2	67.5
014A 003.OG	3	014A	2	[redacted]	[redacted]	66.0	-1.1	60.5	64.9	2.2	67.1
014A 004.OG	4	014A	2	[redacted]	[redacted]	65.4	-1.1	60.5	64.3	2.2	66.5
014A 005.OG	5	014A	2	[redacted]	[redacted]	64.9	-1.1	60.5	63.8	2.2	66.0
014A 006.OG	6	014A	2	[redacted]	[redacted]	64.4	-1.1	60.5	63.3	2.2	65.5
014A 007.OG	7	014A	2	[redacted]	[redacted]	63.8	-1.1	60.5	62.7	2.2	64.9
014A 008.OG	8	014A	2	[redacted]	[redacted]	63.4	-1.1	60.5	62.3	2.2	64.5
014A 009.OG	9	014A	2	[redacted]	[redacted]	62.8	-1.1	60.5	61.7	2.2	63.9
014A 010.OG	10	014A	2	[redacted]	[redacted]	62.4	-1.1	60.5	61.3	2.2	63.5
014B 001.OG	1	014B	2	[redacted]	[redacted]	56.6	-1.1	60.5	60.5	2.2	62.7
014B 002.OG	2	014B	2	[redacted]	[redacted]	58.7	-1.1	60.5	60.5	2.2	62.7
014B 003.OG	3	014B	2	[redacted]	[redacted]	58.3	-1.1	60.5	60.5	2.2	62.7
014B 004.OG	4	014B	2	[redacted]	[redacted]	57.7	-1.1	60.5	60.5	2.2	62.7
014B 005.OG	5	014B	2	[redacted]	[redacted]	57.5	-1.1	60.5	60.5	2.2	62.7
014B 006.OG	6	014B	2	[redacted]	[redacted]	57.4	-1.1	60.5	60.5	2.2	62.7
014B 007.OG	7	014B	2	[redacted]	[redacted]	57.8	-1.1	60.5	60.5	2.2	62.7
014B 008.OG	8	014B	2	[redacted]	[redacted]	58.1	-1.1	60.5	60.5	2.2	62.7
014B 009.OG	9	014B	2	[redacted]	[redacted]	58.7	-1.1	60.5	60.5	2.2	62.7
014B 010.OG	10	014B	2	[redacted]	[redacted]	58.7	-1.1	60.5	60.5	2.2	62.7
014D 001.OG	1	014D	2	[redacted]	[redacted]	58.5	-1.1	60.5	60.5	2.2	62.7
014D 002.OG	2	014D	2	[redacted]	[redacted]	60.3	-1.1	60.5	60.5	2.2	62.7
014D 003.OG	3	014D	2	[redacted]	[redacted]	60.6	-1.1	60.5	60.5	2.2	62.7
014D 004.OG	4	014D	2	[redacted]	[redacted]	60.4	-1.1	60.5	60.5	2.2	62.7
014D 005.OG	5	014D	2	[redacted]	[redacted]	60.1	-1.1	60.5	60.5	2.2	62.7
014D 006.OG	6	014D	2	[redacted]	[redacted]	59.8	-1.1	60.5	60.5	2.2	62.7
014D 007.OG	7	014D	2	[redacted]	[redacted]	59.5	-1.1	60.5	60.5	2.2	62.7
014D 008.OG	8	014D	2	[redacted]	[redacted]	59.1	-1.1	60.5	60.5	2.2	62.7
014D 009.OG	9	014D	2	[redacted]	[redacted]	58.7	-1.1	60.5	60.5	2.2	62.7
014D 010.OG	10	014D	2	[redacted]	[redacted]	58.4	-1.1	60.5	60.5	2.2	62.7
015A 001.OG	1	015A	2	[redacted]	[redacted]	60.2	-1.1	60.5	60.5	2.2	62.7
015A 002.OG	2	015A	2	[redacted]	[redacted]	62.5	-1.1	60.5	61.4	2.2	63.6
015A 003.OG	3	015A	2	[redacted]	[redacted]	62.9	-1.1	60.5	61.8	2.2	64.0
015A 004.OG	4	015A	2	[redacted]	[redacted]	62.8	-1.1	60.5	61.7	2.2	63.9
015A 005.OG	5	015A	2	[redacted]	[redacted]	62.5	-1.1	60.5	61.4	2.2	63.6
015A 006.OG	6	015A	2	[redacted]	[redacted]	62.1	-1.1	60.5	61.0	2.2	63.2
015A 007.OG	7	015A	2	[redacted]	[redacted]	61.8	-1.1	60.5	60.7	2.2	62.9
015A 008.OG	8	015A	2	[redacted]	[redacted]	61.4	-1.1	60.5	60.5	2.2	62.7
015A 009.OG	9	015A	2	[redacted]	[redacted]	61.0	-1.1	60.5	60.5	2.2	62.7
015A 010.OG	10	015A	2	[redacted]	[redacted]	59.4	-1.1	60.5	60.5	2.2	62.7
015B 001.OG	1	015B	2	[redacted]	[redacted]	34.5	-1.1	60.5	60.5	2.2	62.7
015B 002.OG	2	015B	2	[redacted]	[redacted]	35.3	-1.1	60.5	60.5	2.2	62.7
015B 003.OG	3	015B	2	[redacted]	[redacted]	36.3	-1.1	60.5	60.5	2.2	62.7
015B 004.OG	4	015B	2	[redacted]	[redacted]	37.8	-1.1	60.5	60.5	2.2	62.7
015B 005.OG	5	015B	2	[redacted]	[redacted]	43.9	-1.1	60.5	60.5	2.2	62.7
015B 006.OG	6	015B	2	[redacted]	[redacted]	47.6	-1.1	60.5	60.5	2.2	62.7
015B 007.OG	7	015B	2	[redacted]	[redacted]	51.6	-1.1	60.5	60.5	2.2	62.7
015B 008.OG	8	015B	2	[redacted]	[redacted]	54.2	-1.1	60.5	60.5	2.2	62.7
015B 009.OG	9	015B	2	[redacted]	[redacted]	55.6	-1.1	60.5	60.5	2.2	62.7
015B 010.OG	10	015B	2	[redacted]	[redacted]	55.4	-1.1	60.5	60.5	2.2	62.7
015C 001.OG	1	015C	2	[redacted]	[redacted]	48.9	-1.1	60.5	60.5	2.2	62.7
015C 002.OG	2	015C	2	[redacted]	[redacted]	50.8	-1.1	60.5	60.5	2.2	62.7
015C 003.OG	3	015C	2	[redacted]	[redacted]	52.3	-1.1	60.5	60.5	2.2	62.7
015C 004.OG	4	015C	2	[redacted]	[redacted]	52.5	-1.1	60.5	60.5	2.2	62.7
015C 005.OG	5	015C	2	[redacted]	[redacted]	52.8	-1.1	60.5	60.5	2.2	62.7
015C 006.OG	6	015C	2	[redacted]	[redacted]	53.4	-1.1	60.5	60.5	2.2	62.7
015C 007.OG	7	015C	2	[redacted]	[redacted]	53.6	-1.1	60.5	60.5	2.2	62.7
015C 008.OG	8	015C	2	[redacted]	[redacted]	54.6	-1.1	60.5	60.5	2.2	62.7
015C 009.OG	9	015C	2	[redacted]	[redacted]	55.5	-1.1	60.5	60.5	2.2	62.7
015C 010.OG	10	015C	2	[redacted]	[redacted]	56.2	-1.1	60.5	60.5	2.2	62.7
015D 001.OG	1	015D	2	[redacted]	[redacted]	35.3	-1.1	60.5	60.5	2.2	62.7
015D 002.OG	2	015D	2	[redacted]	[redacted]	36.2	-1.1	60.5	60.5	2.2	62.7
015D 003.OG	3	015D	2	[redacted]	[redacted]	37.2	-1.1	60.5	60.5	2.2	62.7
015D 004.OG	4	015D	2	[redacted]	[redacted]	39.3	-1.1	60.5	60.5	2.2	62.7
015D 005.OG	5	015D	2	[redacted]	[redacted]	44.9	-1.1	60.5	60.5	2.2	62.7
015D 006.OG	6	015D	2	[redacted]	[redacted]	48.7	-1.1	60.5	60.5	2.2	62.7
015D 007.OG	7	015D	2	[redacted]	[redacted]	52.5	-1.1	60.5	60.5	2.2	62.7
015D 008.OG	8	015D	2	[redacted]	[redacted]	54.7	-1.1	60.5	60.5	2.2	62.7
015D 009.OG	9	015D	2	[redacted]	[redacted]	56.2	-1.1	60.5	60.5	2.2	62.7
015D 010.OG	10	015D	2	[redacted]	[redacted]	56.1	-1.1	60.5	60.5	2.2	62.7
015E 001.OG	1	015E	2	[redacted]	[redacted]	56.6	-1.1	60.5	60.5	2.2	62.7
015E 002.OG	2	015E	2	[redacted]	[redacted]	59.0	-1.1	60.5	60.5	2.2	62.7
015E 003.OG	3	015E	2	[redacted]	[redacted]	59.6	-1.1	60.5	60.5	2.2	62.7
015E 004.OG	4	015E	2	[redacted]	[redacted]	59.5	-1.1	60.5	60.5	2.2	62.7
015E 005.OG	5	015E	2	[redacted]	[redacted]	59.3	-1.1	60.5	60.5	2.2	62.7
015E 006.OG	6	015E	2	[redacted]	[redacted]	58.9	-1.1	60.5	60.5	2.2	62.7
015E 007.OG	7	015E	2	[redacted]	[redacted]	58.5	-1.1	60.5	60.5	2.2	62.7
015E 008.OG	8	015E	2	[redacted]	[redacted]	58.2	-1.1	60.5	60.5	2.2	62.7
015E 009.OG	9	015E	2	[redacted]	[redacted]	57.8	-1.1	60.5	60.5	2.2	62.7
015E 010.OG	10	015E	2	[redacted]	[redacted]	57.7	-1.1	60.5	60.5	2.2	62.7
015F 001.OG	1	015F	2	[redacted]	[redacted]	35.2	-1.1	60.5	60.5	2.2	62.7
015F 002.OG	2	015F	2	[redacted]	[redacted]	36.1	-1.1	60.5	60.5	2.2	62.7
015F 003.OG	3	015F	2	[redacted]	[redacted]	37.3	-1.1	60.5	60.5	2.2	62.7
015F 004.OG	4	015F	2	[redacted]	[redacted]	39.4	-1.1	60.5	60.5	2.2	62.7
015F 005.OG	5	015F	2	[redacted]	[redacted]	44.7	-1.1	60.5	60.5	2.2	62.7
015F 006.OG	6	015F	2	[redacted]	[redacted]	48.5	-1.1	60.5	60.5	2.2	62.7
015F 007.OG	7	015F	2	[redacted]	[redacted]	52.3	-1.1	60.5	60.5	2.2	62.7
015F 008.OG	8	015F	2	[redacted]	[redacted]	54.7	-1.1	60.5	60.5	2.2	62.7
015F 009.OG	9	015F	2	[redacted]	[redacted]	56.2	-1.1	60.5	60.5	2.2	62.7
015F 010.OG	10	015F	2	[redacted]	[redacted]	56.2	-1.1	60.5	60.5	2.2	62.7
015H 001.OG	1	015H	2	[redacted]	[redacted]	33.0	-1.1	60.5	60.5	2.2	62.7
015H 002.OG	2	015H	2	[redacted]	[redacted]	33.8	-1.1	60.5	60.5	2.2	62.7
015H 003.OG	3	015H	2	[redacted]	[redacted]	34.6	-1.1	60.5	60.5	2.2	62.7
015H 004.OG	4	015H	2	[redacted]	[redacted]	35.8	-1.1	60.5	60.5	2.2	62.7
015H 005.OG	5	015H	2	[redacted]	[redacted]	40.5	-1.1	60.5	60.5	2.2	62.7
015H 006.OG	6	015H	2	[redacted]	[redacted]	44.4	-1.1	60.5	60.5	2.2	62.7
015H 007.OG	7	015H	2	[redacted]	[redacted]	48.4	-1.1	60.5	60.5	2.2	62.7
015H 008.OG	8	015H	2	[redacted]	[redacted]	51.2	-1.1	60.5	60.5	2.2	62.7
015H 009.OG	9	015H	2	[redacted]	[redacted]	52.8	-1.1	60.5	60.5	2.2	62.7
015H 010.OG	10	015H	2	[redacted]	[redacted]	53.7	-1.1	60.5	60.5	2.2	62.7
015I 001.OG	1	015I	2	[redacted]	[redacted]	55.9	-1.1	60.5	60.5	2.2	62.7
015I 002.OG	2	015I	2	[redacted]	[redacted]	58.3	-1.1	60.5	60.5	2.2	62.7
015I 003.OG	3	015I	2	[redacted]	[redacted]	59.0	-1.1	60.5	60.5	2.2	62.7
015I 004.OG	4	015I	2	[redacted]	[redacted]	59.0	-1.1	60.5	60.5	2.2	62.7
015I 005.OG	5	015I	2	[redacted]	[redacted]	58.8	-1.1	60.5	60.5	2.2	62.7
015I 006.OG	6	015I	2	[redacted]	[redacted]	58.5	-1.1	60.5	60.5	2.2	62.7
015I 007.OG	7	015I	2	[redacted]	[redacted]	58.2	-1.1	60.5	60.5	2.2	62.7
015I 008.OG	8	015I	2	[redacted]	[redacted]	57.9	-1.1	60.5	60.5	2.2	62.7
015I 009.OG	9	015I	2	[redacted]	[redacted]	57.5	-1.1	60.5	60.5	2.2	62.7
015I 010.OG	10	015I	2	[redacted]	[redacted]	57.5	-1.1	60.5	60.5	2.2	62.7
016A 001.OG	1	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 002.OG	2	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 003.OG	3	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 004.OG	4	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 005.OG	5	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 006.OG	6	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 007.OG	7	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016A 008.OG	8	016A	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 001.OG	1	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 002.OG	2	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 003.OG	3	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 004.OG	4	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 005.OG	5	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 006.OG	6	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 007.OG	7	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016B 008.OG	8	016B	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 001.OG	1	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 002.OG	2	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 003.OG	3	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 004.OG	4	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 005.OG	5	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 006.OG	6	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 007.OG	7	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016C 008.OG	8	016C	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 001.OG	1	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 002.OG	2	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 003.OG	3	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 004.OG	4	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 005.OG	5	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 006.OG	6	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 007.OG	7	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016D 008.OG	8	016D	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 001.OG	1	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 002.OG	2	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 003.OG	3	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 004.OG	4	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 005.OG	5	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 006.OG	6	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 007.OG	7	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016E 008.OG	8	016E	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 001.OG	1	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 002.OG	2	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 003.OG	3	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 004.OG	4	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 005.OG	5	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 006.OG	6	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 007.OG	7	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016F 008.OG	8	016F	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 001.OG	1	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 002.OG	2	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 003.OG	3	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 004.OG	4	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 005.OG	5	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 006.OG	6	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 007.OG	7	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016H 008.OG	8	016H	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 001.OG	1	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 002.OG	2	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 003.OG	3	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 004.OG	4	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 005.OG	5	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 006.OG	6	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 007.OG	7	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5
016L 008.OG	8	016L	1	[redacted]	[redacted]	0.0	-3.2	60.5	60.5	2.0	62.5

Scenario 1 - Construction Noise Results

Construction Noise Results

Construction Duration: 2 Phase I_Demo; 6 Phase I_Exc&Found; 3 Phase I_Super; 7 Phase I_Exterior; 3 Phase II_Demo; 6 Phase II_Exc&Found; 10 Phase II_Super; 18 Phase II_Exterior (each: Leq Const / Total / Change / Exceed?; L10 Total)

Bldg #	Façade Side	CadnaA Receptor Sites	Elevation (floor)	Façade Number	Existing Leq(1)	Existing L10	Max Change	Max L10
0	1	1	1	Spot Msmt Lo	68.6	70.6	0.0	70.6
0	2	2	1	Spot Msmt Lo	67.5	69.7	0.0	69.7
0	3	3	1	Spot Msmt Lo	63.8	64.8	0.0	64.8
0	4	4	1	Spot Msmt Lo	71.3	74.9	0.0	74.9
009	A	009A 001.OG	1	009A	68.3	69.3	2.0	71.3
009	A	009A 002.OG	2	009A	68.6	69.6	3.2	72.8
009	A	009A 003.OG	3	009A	68.2	69.2	3.5	72.7
009	A	009A 004.OG	4	009A	67.8	68.8	4.2	73.0
009	A	009A 005.OG	5	009A	67.4	68.4	4.8	73.2
009	A	009A 006.OG	6	009A	66.9	67.9	5.5	73.4
009	A	009A 007.OG	7	009A	66.5	67.5	5.7	73.2
009	A	009A 008.OG	8	009A	66.1	67.1	6.0	73.1
009	A	009A 009.OG	9	009A	65.7	66.7	6.3	73.0
009	A	009A 010.OG	10	009A	65.4	66.4	6.4	72.8
009	A	009A 011.OG	11	009A	65.0	66.0	6.7	72.7
009	B	009B 001.OG	1	009B	63.3	64.3	9.1	73.4
009	B	009B 002.OG	2	009B	63.2	64.2	11.2	75.4
009	B	009B 003.OG	3	009B	63.0	64.0	12.5	76.5
009	B	009B 004.OG	4	009B	62.9	63.9	12.7	76.6
009	B	009B 005.OG	5	009B	62.6	63.6	13.6	77.2
009	B	009B 006.OG	6	009B	62.2	63.2	13.9	77.1
009	B	009B 007.OG	7	009B	61.9	62.9	14.0	76.9
009	B	009B 008.OG	8	009B	61.6	62.6	14.2	76.8
009	B	009B 009.OG	9	009B	61.4	62.4	14.3	76.7
009	B	009B 010.OG	10	009B	61.1	62.1	14.5	76.6
009	B	009B 011.OG	11	009B	60.5	61.5	13.0	74.5
009	C	009C 001.OG	1	009C	60.5	61.5	17.2	78.7
009	C	009C 002.OG	2	009C	60.5	61.5	20.1	81.6
009	C	009C 003.OG	3	009C	60.5	61.5	22.0	83.5
009	C	009C 004.OG	4	009C	60.5	61.5	21.7	83.2
009	C	009C 005.OG	5	009C	60.5	61.5	21.4	82.9
009	C	009C 006.OG	6	009C	60.5	61.5	21.1	82.6
009	C	009C 007.OG	7	009C	60.5	61.5	20.8	82.3
009	C	009C 008.OG	8	009C	60.5	61.5	20.3	81.8
009	C	009C 009.OG	9	009C	60.5	61.5	19.9	81.4
009	C	009C 010.OG	10	009C	60.5	61.5	19.5	81.0
009	C	009C 011.OG	11	009C	60.5	61.5	16.5	78.0
009	E	009E 001.OG	1	009E	60.5	61.5	0.7	62.2
009	E	009E 002.OG	2	009E	60.5	61.5	1.2	62.8
009	E	009E 003.OG	3	009E	60.5	61.5	2.7	64.2
009	E	009E 004.OG	4	009E	60.5	61.5	3.2	64.7
009	E	009E 005.OG	5	009E	60.5	61.5	3.8	65.3
009	E	009E 006.OG	6	009E	60.5	61.5	4.2	65.8
009	E	009E 007.OG	7	009E	60.5	61.5	4.7	66.2
009	E	009E 008.OG	8	009E	60.5	61.5	4.7	66.3
009	E	009E 009.OG	9	009E	60.5	61.5	4.8	66.3
009	E	009E 010.OG	10	009E	60.5	61.5	4.8	66.3
009	E	009E 011.OG	11	009E	60.5	61.5	5.2	66.8
009	G	009G 001.OG	1	009G	60.5	61.5	16.6	78.1
009	G	009G 002.OG	2	009G	60.5	61.5	19.0	80.6
009	G	009G 003.OG	3	009G	60.5	61.5	21.1	82.6
009	G	009G 004.OG	4	009G	60.5	61.5	21.0	82.5
009	G	009G 005.OG	5	009G	60.5	61.5	20.8	82.3
009	G	009G 006.OG	6	009G	60.5	61.5	20.6	82.1
009	G	009G 007.OG	7	009G	60.5	61.5	20.4	81.9
009	G	009G 008.OG	8	009G	60.5	61.5	19.9	81.4
009	G	009G 009.OG	9	009G	60.5	61.5	19.5	81.0
009	G	009G 010.OG	10	009G	60.5	61.5	19.2	80.8
009	G	009G 011.OG	11	009G	60.5	61.5	16.1	77.6
009	I	009I 001.OG	1	009I	60.5	61.5	14.1	75.7
009	I	009I 002.OG	2	009I	60.5	61.5	18.4	80.0
009	I	009I 003.OG	3	009I	60.5	61.5	18.9	80.5
009	I	009I 004.OG	4	009I	60.5	61.5	19.1	80.7
009	I	009I 005.OG	5	009I	60.5	61.5	19.0	80.6
009	I	009I 006.OG	6	009I	60.5	61.5	18.4	80.0
009	I	009I 007.OG	7	009I	60.5	61.5	18.2	79.8
009	I	009I 008.OG	8	009I	60.5	61.5	18.0	79.6
009	I	009I 009.OG	9	009I	60.5	61.5	17.2	78.8
009	I	009I 010.OG	10	009I	60.5	61.5	16.9	78.4
009	I	009I 011.OG	11	009I	60.5	61.5	16.5	78.0
014	A	014A 001.OG	1	014A	64.7	66.9	0.5	67.4
014	A	014A 002.OG	2	014A	65.3	67.5	0.6	68.1
014	A	014A 003.OG	3	014A	64.9	67.1	0.6	67.7
014	A	014A 004.OG	4	014A	64.3	66.5	0.7	67.2
014	A	014A 005.OG	5	014A	63.8	66.0	0.7	66.7
014	A	014A 006.OG	6	014A	63.3	65.5	0.7	66.2
014	A	014A 007.OG	7	014A	62.7	64.9	0.8	65.7
014	A	014A 008.OG	8	014A	62.3	64.5	0.7	65.2
014	A	014A 009.OG	9	014A	61.7	63.9	0.7	64.6
014	A	014A 010.OG	10	014A	61.3	63.5	1.4	64.9
014	B	014B 001.OG	1	014B	60.5	62.7	16.0	78.7
014	B	014B 002.OG	2	014B	60.5	62.7	21.5	84.2
014	B	014B 003.OG	3	014B	60.5	62.7	20.9	83.6
014	B	014B 004.OG	4	014B	60.5	62.7	20.2	82.9
014	B	014B 005.OG	5	014B	60.5	62.7	19.5	82.2
014	B	014B 006.OG	6	014B	60.5	62.7	18.9	81.7
014	B	014B 007.OG	7	014B	60.5	62.7	18.4	81.2
014	B	014B 008.OG	8	014B	60.5	62.7	17.0	79.7
014	B	014B 009.OG	9	014B	60.5	62.7	16.6	79.3
014	B	014B 010.OG	10	014B	60.5	62.7	15.6	78.3
014	D	014D 001.OG	1	014D	60.5	62.7	0.8	63.5
014	D	014D 002.OG	2	014D	60.5	62.7	0.9	63.6
014	D	014D 003.OG	3	014D	60.5	62.7	1.0	63.7
014	D	014D 004.OG	4	014D	60.5	62.7	0.9	63.7
014	D	014D 005.OG	5	014D	60.5	62.7	0.9	63.6
014	D	014D 006.OG	6	014D	60.5	62.7	0.8	63.6
014	D	014D 007.OG	7	014D	60.5	62.7	0.8	63.5
014	D	014D 008.OG	8	014D	60.5	62.7	0.7	63.4
014	D	014D 009.OG	9	014D	60.5	62.7	0.6	63.4
014	D	014D 010.OG	10	014D	60.5	62.7	1.6	64.3
015	A	015A 001.OG	1	015A	60.5	62.7	1.0	63.7
015	A	015A 002.OG	2	015A	61.4	63.6	1.0	64.6
015	A	015A 003.OG	3	015A	61.8	64.0	1.0	65.0
015	A	015A 004.OG	4	015A	61.7	63.9	1.0	64.9
015	A	015A 005.OG	5	015A	61.4	63.6	1.0	64.6
015	A	015A 006.OG	6	015A	61.0	63.2	1.0	64.2
015	A	015A 007.OG	7	015A	60.7	62.9	0.8	63.7
015	A	015A 008.OG	8	015A	60.5	62.7	0.8	63.5
015	A	015A 009.OG	9	015A	60.5	62.7	0.7	63.4
015	A	015A 010.OG	10	015A	60.5	62.7	1.4	64.1
015	B	015B 001.OG	1	015B	60.5	62.7	13.6	76.3
015	B	015B 002.OG	2	015B	60.5	62.7	17.5	80.3
015	B	015B 003.OG	3	015B	60.5	62.7	19.6	82.3
015	B	015B 004.OG	4	015B	60.5	62.7	19.3	82.1
015	B	015B 005.OG	5	015B	60.5	62.7	19.8	82.5
015	B	015B 006.OG	6	015B	60.5	62.7	19.4	82.1
015	B	015B 007.OG	7	015B	60.5	62.7	19.2	82.0
015	B	015B 008.OG	8	015B	60.5	62.7	18.6	81.4
015	B	015B 009.OG	9	015B	60.5	62.7	18.0	80.8
015	B	015B 010.OG	10	015B	60.5	62.7	15.3	78.0
015	C	015C 001.OG	1	015C	60.5	62.7	3.0	65.7
015	C	015C 002.OG	2	015C	60.5	62.7	2.9	65.6
015	C	015C 003.OG	3	015C	60.5	62.7	2.7	65.4
015	C	015C 004.OG	4	015C	60.5	62.7	2.5	65.2
015	C	015C 005.OG	5	015C	60.5	62.7	2.3	65.0
015	C	015C 006.OG	6	015C	60.5	62.7	2.1	64.8
015	C	015C 007.OG	7	015C	60.5	62.7	1.9	64.6
015	C	015C 008.OG	8	015C	60.5	62.7	1.7	64.5
015	C	015C 009.OG	9	015C	60.5	62.7	1.6	64.3
015	C	015C 010.OG	10	015C	60.5	62.7	1.5	64.2
015	D	015D 001.OG	1	015D	60.5	62.7	16.5	79.2
015	D	015D 002.OG	2	015D	60.5	62.7	24.1	86.8
015	D	015D 003.OG	3	015D	60.5	62.7	24.9	87.6
015	D	015D 004.OG	4	015D	60.5	62.7	24.1	86.8
015	D	015D 005.OG	5	015D	60.5	62.7	23.4	86.1
015	D	015D 006.OG	6	015D	60.5	62.7	22.9	85.6
015	D	015D 007.OG	7	015D	60.5	62.7	22.3	85.0
015	D	015D 008.OG	8	015D	60.5	62.7	21.7	84.4
015	D	015D 009.OG	9	015D	60.5	62.7	21.2	83.9
015	D	015D 010.OG	10	015D	60.5	62.7	19.7	82.4
015	E	015E 001.OG	1	015E	60.5	62.7	1.0	63.8
015	E	015E 002.OG	2	015E	60.5	62.7	1.1	63.9
015	E	015E 003.OG	3	015E	60.5	62.7	1.2	63.9
015	E	015E 004.OG	4	015E	60.5	62.7	1.1	63.9
015	E	015E 005.OG	5	015E	60.5	62.7	1.0	63.8
015	E	015E 006.OG	6	015E	60.5	62.7	1.0	63.7
015	E	015E 007.OG	7	015E	60.5	62.7	0.9	63.6
015	E	015E 008.OG	8	015E	60.5	62.7	0.8	63.6
015	E	015E 009.OG	9	015E	60.5	62.7	0.8	63.5
015	E	015E 010.OG	10	015E	60.5	62.7	2.2	64.9
015	F	015F 001.OG	1	015F	60.5	62.7	16.5	79.2
015	F	015F 002.OG	2	015F	60.5	62.7	23.8	86.5
015	F	015F 003.OG	3	015F	60.5	62.7	24.7	87.4
015	F	015F 004.OG	4	015F	60.5	62.7	24.4	87.1
015	F	015F 005.OG	5	015F	60.5	62.7	23.7	86.4
015	F	015F 006.OG	6	015F	60.5	62.7	23.0	85.7
015	F	015F 007.OG	7	015F	60.5	62.7	21.9	84.6
015	F	015F 008.OG	8	015F	60.5	62.7	21.4	84.1
015	F	015F 009.OG	9	015F	60.5	62.7	20.7	83.4
015	F	015F 010.OG	10	015F	60.5	62.7	20.1	82.8
015	H	015H 001.OG	1	015H	60.5	62.7	5.9	68.7
015	H	015H 002.OG	2	015H	60.5	62.7	8.5	71.3
015	H	015H 003.OG	3	015H	60.5	62.7	9.8	72.5
015	H	015H 004.OG	4	015H	60.5	62.7	10.8	73.6
015	H	015H 005.OG	5	015H	60.5	62.7	11.1	73.8
015	H	015H 006.OG	6	015H	60.5	62.7	11.4	74.1
015	H	015H 007.OG	7	015H	60.5	62.7	12.2	75.0
015	H	015H 008.OG	8	015H	60.5	62.7	12.3	75.1
015	H	015H 009.OG	9	015H	60.5	62.7	11.7	74.4
015	H	015H 010.OG	10	015H	60.5	62.7	11.4	74.1
015	I	015I 001.OG	1	015I	60.5	62.7	0.7	63.5
015	I	015I 002.OG	2	015I	60.5	62.7	0.9	63.7
015	I	015I 003.OG	3	015I	60.5	62.7	1.0	63.7
015	I	015I 004.OG	4	015I	60.5	62.7	1.0	63.7
015	I	015I 005.OG	5	015I	60.5	62.7	1.0	63.7
015	I	015I 006.OG	6	015I	60.5	62.7	0.9	63.6
015	I	015I 007.OG	7	015I	60.5	62.7	0.7	63.5
015	I	015I 008.OG	8	015I	60.5	62.7	0.6	63.3
015	I	015I 009.OG	9	015I	60.5	62.7	0.6	63.3
015	I	015I 010.OG	10	015I	60.5	62.7	1.4	64.1
016	A	016A 001.OG	1	016A	60.5	62.5	18.8	81.4
016	A	016A 002.OG	2	016A	60.5	62.5	20.2	82.7
016	A	016A 003.OG	3	016A	60.5	62.5	19.5	82.0
016	A	016A 004.OG	4	016A	60.5	62.5	18.8	81.4
016	A	016A 005.OG	5	016A	60.5	62.5	18.1	80.7
016	A	016A 006.OG	6	016A	60.5	62.5	17.2	79.8
016	A	016A 007.OG	7	016A	60.5	62.5	16.9	79.4
016	A	016A 008.OG	8	016A	60.5	62.5	16.6	79.1
016	B	016B 001.OG	1	016B	60.5	62.5	4.3	66.8
016	B	016B 002.OG	2	016B	60.5	62.5	6.6	69.2
016	B	016B 003.OG	3	016B	60.5	62.5	7.2	69.7
016	B	016B 004.OG	4	016B	60.5	62.5	7.8	70.4
016	B	016B 005.OG	5	016B	60.5	62.5	8.6	71.1
016	B	016B 006.OG	6	016B	60.5	62.5	9.5	72.0
016	B	016B 007.OG	7	016B	60.5	62.5	9.2	71.8
016	B	016B 008.OG	8	016B	60.5	62.5	9.8	72.4
016	C	016C 001.OG	1	016C	60.5	62.5	8.2	70.7
016	C	016C 002.OG	2	016C	60.5	62.5	8.0	70.5
016	C	016C 003.OG	3	016C	60.5	62.5	8.3	70.8
016	C	016C 004.OG	4	016C	60.5	62.5	7.9	70.5
016	C	016C 005.OG	5	016C	60.5	62.5	7.8	70.4
016	C	016C 006.OG	6	016C	60.5	62.5	7.7	70.2
016	C	016C 007.OG	7	016C	60.5	62.5	7.4	70.0
016	C	016C 008.OG	8	016C	60.5	62.5	7.5	70.0
016	D	016D 001.OG	1	016D	60.5	62.5	14.3	76.9
016	D	016D 002.OG	2	016D	60.5	62.5	21.7	84.2
016	D	016D 003.OG	3	016D	60.5	62.5	22.7	85.2
016	D	016D 004.OG	4	016D	60.5	62.5	22.6	85.1
016	D	016D 005.OG	5	016D	60.5	62.5	22.3	84.8
016	D	016D 006.OG	6	016D	60.5	62.5	22.1	84.6
016	D	016D 007.OG	7	016D	60.5	62.5	21.8	84.3
016	D	016D 008.OG	8	016D	60.5	62.5	21.5	84.0
016	E	016E 001.OG	1	016E	60.5	62.5	15.9	78.4
016	E	016E 002.OG	2	016E	60.5	62.5	18.2	80.8
016	E	016E 003.OG	3	016E	60.5	62.5	18.4	81.0
016	E	016E 004.OG	4	016E	60.5	62.5	18.4	81.0
016	E	016E 005.OG	5	016E	60.5	62.5	18.4	81.0
016	E	016E 006.OG	6	016E	60.5	62.5	18.2	80.8
016	E	016E 007.OG	7	016E	60.5	62.5	17.9	80.5
016	E	016E 008.OG	8	016E	60.5	62.5	17.8	80.4
016	F	016F 001.OG	1	016F	60.5	62.5	6.2	68.8
016	F	016F 002.OG	2	016F	60.5	62.5	9.7	72.2
016	F	016F 003.OG	3	016F	60.5	62.5	10.9	73.5
016	F	016F 004.OG	4	016F	60.5	62.5	11.1	73.6
016	F	016F 005.OG	5	016F	60.5	62.5	10.4	72.9
016	F	016F 006.OG	6	016F	60.5	62.5	11.1	73.6
016	F	016F 007.OG	7	016F	60.5	62.5	11.0	73.6
016	F	016F 008.OG	8	016F	60.5	62.5	11.7	74.2
016	H	016H 001.OG	1	016H	60.5	62.5	15.9	78.4
016	H	016H 002.OG	2	016H	60.5	62.5	18.5	81.1
016	H	016H 003.OG	3	016H	60.5	62.5	18.5	81.1
016	H	016H 004.OG	4	016H	60.5	62.5	18.6	81.2
016	H	016H 005.OG	5	016H	60.5	62.5	18.5	81.1
016	H	016H 006.OG	6	016H	60.5	62.5	18.4	81.0
016	H	016H 007.OG	7	016H	60.5	62.5	18.3	80.9
016	H	016H 008.OG	8	016H	60.5	62.5	18.2	80.8
016	L	016L 001.OG	1	016L	60.5	62.5	6.1	68.6
016	L	016L 002.OG	2	016L	60.5	62.5	8.4	71.0
016	L	016L 003.OG	3	016L	60.5	62.5	9.6	72.1
016	L	016L 004.OG	4	016L	60.5	62.5	11.2	73.7
016	L	016L 005.OG	5	016L	60.5	62.5	12.0	74.6
016	L	016L 006.OG	6	016L	60.5	62.5	12.1	74.7
016	L	016L 007.OG	7	016L	60.5	62.5	12.1	74.7
016	L	016L 008.OG	8	016L	60.5	62.5	11.1	73.6

Scenario 2 - Existing Conditions

Select # for Meas. Noise Receptor Sites		Name of Receptor in CadnaA	Select Measurement Period	dBA: ExAM L_{eq} at Meas	ExAM L_{10} at Meas	Cadna ExAM L_{eq}	Adjustment Factor at Meas Loc	Min Level (min of all L_{eq})	Existing L_{eq}	L_{10} Difference	Existing L_{10}
1		Spot Msmt Location 1	AM	68.6	70.6	71.8	-3.2	63.2	68.6	2.0	70.6
2		Spot Msmt Location 2	AM	67.5	69.7	68.6	-1.1	63.2	67.5	2.2	69.7
3		Spot Msmt Location 3	AM	63.8	64.8	63.8	0.0	63.2	63.8	1.0	64.8
4		Spot Msmt Location 4	AM	71.3	74.9	71.7	-0.4	63.2	71.3	3.6	74.9

Noise Receptor Sites	Elevation (floor)	Address/Façade Number (ID)	Input Governing Measurement Loc	dBA: ExAM L_{eq} at Meas	ExAM L_{10} at Meas	Cadna ExAM L_{eq}	Adjustment Factor at Meas Loc	Min Level (avg Meas L_{90})	Existing L_{eq}	L_{10} Difference	Existing L_{10}
1	1	Spot Msmt Location 1	1	[redacted]		71.8	-3.2	63.2	68.6	2.0	70.6
2	1	Spot Msmt Location 2	2	[redacted]		68.6	-1.1	63.2	67.5	2.2	69.7
3	1	Spot Msmt Location 3	3	[redacted]		63.8	0.0	63.2	63.8	1.0	64.8
4	1	Spot Msmt Location 4	4	[redacted]		71.7	-0.4	63.2	71.3	3.6	74.9
001A 001.OG	1	001A	2	[redacted]		47.3	-1.1	63.2	63.2	2.2	65.4
001A 002.OG	2	001A	2	[redacted]		41.2	-1.1	63.2	63.2	2.2	65.4
001A 003.OG	3	001A	2	[redacted]		43.6	-1.1	63.2	63.2	2.2	65.4
001A 004.OG	4	001A	2	[redacted]		45.5	-1.1	63.2	63.2	2.2	65.4
001A 005.OG	5	001A	2	[redacted]		47.8	-1.1	63.2	63.2	2.2	65.4
001A 006.OG	6	001A	2	[redacted]		48.3	-1.1	63.2	63.2	2.2	65.4
001A 007.OG	7	001A	2	[redacted]		48.8	-1.1	63.2	63.2	2.2	65.4
001A 008.OG	8	001A	2	[redacted]		49.4	-1.1	63.2	63.2	2.2	65.4
001A 009.OG	9	001A	2	[redacted]		49.3	-1.1	63.2	63.2	2.2	65.4
001A 010.OG	10	001A	2	[redacted]		49.1	-1.1	63.2	63.2	2.2	65.4
001B 001.OG	1	001B	2	[redacted]		53.7	-1.1	63.2	63.2	2.2	65.4
001B 002.OG	2	001B	2	[redacted]		56.5	-1.1	63.2	63.2	2.2	65.4
001B 003.OG	3	001B	2	[redacted]		57.7	-1.1	63.2	63.2	2.2	65.4
001B 004.OG	4	001B	2	[redacted]		58.3	-1.1	63.2	63.2	2.2	65.4
001B 005.OG	5	001B	2	[redacted]		58.6	-1.1	63.2	63.2	2.2	65.4
001B 006.OG	6	001B	2	[redacted]		58.7	-1.1	63.2	63.2	2.2	65.4
001B 007.OG	7	001B	2	[redacted]		58.7	-1.1	63.2	63.2	2.2	65.4
001B 008.OG	8	001B	2	[redacted]		58.7	-1.1	63.2	63.2	2.2	65.4
001B 009.OG	9	001B	2	[redacted]		58.4	-1.1	63.2	63.2	2.2	65.4
001B 010.OG	10	001B	2	[redacted]		58.2	-1.1	63.2	63.2	2.2	65.4
001B 011.OG	11	001B	2	[redacted]		58.0	-1.1	63.2	63.2	2.2	65.4
001B 012.OG	12	001B	2	[redacted]		57.8	-1.1	63.2	63.2	2.2	65.4
001B 013.OG	13	001B	2	[redacted]		57.7	-1.1	63.2	63.2	2.2	65.4
001B 014.OG	14	001B	2	[redacted]		57.5	-1.1	63.2	63.2	2.2	65.4
001B 015.OG	15	001B	2	[redacted]		57.3	-1.1	63.2	63.2	2.2	65.4
001C 001.OG	1	001C	2	[redacted]		71.6	-1.1	63.2	70.5	2.2	72.7
001C 002.OG	2	001C	2	[redacted]		71.5	-1.1	63.2	70.4	2.2	72.6
001C 003.OG	3	001C	2	[redacted]		70.8	-1.1	63.2	69.7	2.2	71.9
001C 004.OG	4	001C	2	[redacted]		70.0	-1.1	63.2	68.9	2.2	71.1
001C 005.OG	5	001C	2	[redacted]		69.4	-1.1	63.2	68.3	2.2	70.5
001C 006.OG	6	001C	2	[redacted]		68.8	-1.1	63.2	67.7	2.2	69.9
001C 007.OG	7	001C	2	[redacted]		68.3	-1.1	63.2	67.2	2.2	69.4
001C 008.OG	8	001C	2	[redacted]		67.9	-1.1	63.2	66.8	2.2	69.0
001C 009.OG	9	001C	2	[redacted]		67.5	-1.1	63.2	66.4	2.2	68.6
001C 010.OG	10	001C	2	[redacted]		67.1	-1.1	63.2	66.0	2.2	68.2
001C 011.OG	11	001C	2	[redacted]		66.6	-1.1	63.2	65.5	2.2	67.7
001C 012.OG	12	001C	2	[redacted]		66.3	-1.1	63.2	65.2	2.2	67.4
001C 013.OG	13	001C	2	[redacted]		66.0	-1.1	63.2	64.9	2.2	67.1
001C 014.OG	14	001C	2	[redacted]		65.7	-1.1	63.2	64.6	2.2	66.8
001C 015.OG	15	001C	2	[redacted]		65.4	-1.1	63.2	64.3	2.2	66.5
001C 016.OG	16	001C	2	[redacted]		65.1	-1.1	63.2	64.0	2.2	66.2
001C 017.OG	17	001C	2	[redacted]		64.8	-1.1	63.2	63.7	2.2	65.9
001C 018.OG	18	001C	2	[redacted]		64.6	-1.1	63.2	63.5	2.2	65.7
001C 019.OG	19	001C	2	[redacted]		64.3	-1.1	63.2	63.2	2.2	65.4
001C 020.OG	20	001C	2	[redacted]		64.1	-1.1	63.2	63.2	2.2	65.4
001D 001.OG	1	001D	2	[redacted]		43.2	-1.1	63.2	63.2	2.2	65.4
001D 002.OG	2	001D	2	[redacted]		45.2	-1.1	63.2	63.2	2.2	65.4
001D 003.OG	3	001D	2	[redacted]		46.5	-1.1	63.2	63.2	2.2	65.4
001D 004.OG	4	001D	2	[redacted]		47.3	-1.1	63.2	63.2	2.2	65.4
001D 005.OG	5	001D	2	[redacted]		48.3	-1.1	63.2	63.2	2.2	65.4
001D 006.OG	6	001D	2	[redacted]		49.2	-1.1	63.2	63.2	2.2	65.4
001D 007.OG	7	001D	2	[redacted]		49.5	-1.1	63.2	63.2	2.2	65.4
001D 008.OG	8	001D	2	[redacted]		49.8	-1.1	63.2	63.2	2.2	65.4
001D 009.OG	9	001D	2	[redacted]		50.1	-1.1	63.2	63.2	2.2	65.4
001D 010.OG	10	001D	2	[redacted]		50.3	-1.1	63.2	63.2	2.2	65.4
001D 011.OG	11	001D	2	[redacted]		50.3	-1.1	63.2	63.2	2.2	65.4
001D 012.OG	12	001D	2	[redacted]		50.4	-1.1	63.2	63.2	2.2	65.4
001D 013.OG	13	001D	2	[redacted]		50.0	-1.1	63.2	63.2	2.2	65.4
001D 014.OG	14	001D	2	[redacted]		50.8	-1.1	63.2	63.2	2.2	65.4
001D 015.OG	15	001D	2	[redacted]		52.1	-1.1	63.2	63.2	2.2	65.4
001D 016.OG	16	001D	2	[redacted]		53.7	-1.1	63.2	63.2	2.2	65.4
001D 017.OG	17	001D	2	[redacted]		54.8	-1.1	63.2	63.2	2.2	65.4
001D 018.OG	18	001D	2	[redacted]		54.5	-1.1	63.2	63.2	2.2	65.4
001D 019.OG	19	001D	2	[redacted]		54.4	-1.1	63.2	63.2	2.2	65.4
001D 020.OG	20	001D	2	[redacted]		54.5	-1.1	63.2	63.2	2.2	65.4
001F 001.OG	1	001F	2	[redacted]		68.2	-1.1	63.2	67.1	2.2	69.3
001F 002.OG	2	001F	2	[redacted]		68.7	-1.1	63.2	67.6	2.2	69.8
001F 003.OG	3	001F	2	[redacted]		68.4	-1.1	63.2	67.3	2.2	69.5
001F 004.OG	4	001F	2	[redacted]		67.9	-1.1	63.2	66.8	2.2	69.0
001F 005.OG	5	001F	2	[redacted]		67.4	-1.1	63.2	66.3	2.2	68.5
001F 006.OG	6	001F	2	[redacted]		66.9	-1.1	63.2	65.8	2.2	68.0
001F 007.OG	7	001F	2	[redacted]		66.5	-1.1	63.2	65.4	2.2	67.6
001F 008.OG	8	001F	2	[redacted]		66.1	-1.1	63.2	65.0	2.2	67.2
001F 009.OG	9	001F	2	[redacted]		65.7	-1.1	63.2	64.6	2.2	66.8
001F 010.OG	10	001F	2	[redacted]		65.3	-1.1	63.2	64.2	2.2	66.4
001G 002.OG	2	001G	2	[redacted]		51.9	-1.1	63.2	63.2	2.2	65.4
001G 003.OG	3	001G	2	[redacted]		54.1	-1.1	63.2	63.2	2.2	65.4
001G 004.OG	4	001G	2	[redacted]		54.5	-1.1	63.2	63.2	2.2	65.4
001G 005.OG	5	001G	2	[redacted]		54.7	-1.1	63.2	63.2	2.2	65.4
001G 006.OG	6	001G	2	[redacted]		54.9	-1.1	63.2	63.2	2.2	65.4
001G 007.OG	7	001G	2	[redacted]		55.1	-1.1	63.2	63.2	2.2	65.4
001G 008.OG	8	001G	2	[redacted]		55.2	-1.1	63.2	63.2	2.2	65.4
001G 009.OG	9	001G	2	[redacted]		55.3	-1.1	63.2	63.2	2.2	65.4
001G 010.OG	10	001G	2	[redacted]		55.3	-1.1	63.2	63.2	2.2	65.4
001G 011.OG	11	001G	2	[redacted]		55.1	-1.1	63.2	63.2	2.2	65.4
001G 012.OG	12	001G	2	[redacted]		54.9	-1.1	63.2	63.2	2.2	65.4
001G 013.OG	13	001G	2	[redacted]		54.7	-1.1	63.2	63.2	2.2	65.4
001G 014.OG	14	001G	2	[redacted]		54.5	-1.1	63.2	63.2	2.2	65.4
001G 015.OG	15	001G	2	[redacted]		54.4	-1.1	63.2	63.2	2.2	65.4
001G 016.OG	16	001G	2	[redacted]		54.3	-1.1	63.2	63.2	2.2	65.4
001G 017.OG	17	001G	2	[redacted]		54.3	-1.1	63.2	63.2	2.2	65.4
001G 018.OG	18	001G	2	[redacted]		54.3	-1.1	63.2	63.2	2.2	65.4
001G 019.OG	19	001G	2	[redacted]		54.3	-1.1	63.2	63.2	2.2	65.4
001G 020.OG	20	001G	2	[redacted]		54.6	-1.1	63.2	63.2	2.2	65.4
001H 001.OG	1	001H	2	[redacted]		53.8	-1.1	63.2	63.2	2.2	65.4
001H 002.OG	2	001H	2	[redacted]		55.0	-1.1	63.2	63.2	2.2	65.4
001H 003.OG	3	001H	2	[redacted]		56.1	-1.1	63.2	63.2	2.2	65.4
001H 004.OG	4	001H	2	[redacted]		56.8	-1.1	63.2	63.2	2.2	65.4
001H 005.OG	5	001H	2	[redacted]		57.2	-1.1	63.2	63.2	2.2	65.4
001H 006.OG	6	001H	2	[redacted]		57.2	-1.1	63.2	63.2	2.2	65.4
001H 007.OG	7	001H	2	[redacted]		57.2	-1.1	63.2	63.2	2.2	65.4
001H 008.OG	8	001H	2	[redacted]		57.1	-1.1	63.2	63.2	2.2	65.4
001H 009.OG	9	001H	2	[redacted]		56.8	-1.1	63.2	63.2	2.2	65.4
001H 010.OG	10	001H	2	[redacted]		56.6	-1.1	63.2	63.2	2.2	65.4
001H 011.OG	11	001H	2	[redacted]		56.4	-1.1	63.2	63.2	2.2	65.4
001H 012.OG	12	001H	2	[redacted]		56.2	-1.1	63.2	63.2	2.2	65.4
001H 013.OG	13	001H	2	[redacted]		55.7	-1.1	63.2	63.2	2.2	65.4
001H 014.OG	14	001H	2	[redacted]		55.3	-1.1	63.2	63.2	2.2	65.4
001H 015.OG	15	001H	2	[redacted]		55.3	-1.1	63.2	63.2	2.2	65.4
001H 016.OG	16	001H	2	[redacted]		55.5	-1.1	63.2	63.2	2.2	65.4
001H 017.OG	17	001H	2	[redacted]		56.2	-1.1	63.2	63.2	2.2	65.4
001H 018.OG	18	001H	2	[redacted]		56.5	-1.1	63.2	63.2	2.2	65.4
001H 019.OG	19	001H	2	[redacted]		57.0	-1.1	63.2	63.2	2.2	65.4
001H 020.OG	20	001H	2	[redacted]		57.2	-1.1	63.2	63.2	2.2	65.4
001K 001.OG	1	001K	2	[redacted]		59.0	-1.1	63.2	63.2	2.2	65.4
001K 002.OG	2	001K	2	[redacted]		60.8	-1.1	63.2	63.2	2.2	65.4
001K 003.OG	3	001K	2	[redacted]		61.4	-1.1	63.2	63.2	2.2	65.4
001K 004.OG	4	001K	2	[redacted]		61.5	-1.1	63.2	63.2	2.2	65.4
001K 005.OG	5	001K	2	[redacted]		61.5	-1.1	63.2	63.2	2.2	65.4
001K 006.OG	6	001K	2	[redacted]		61.3	-1.1	63.2	63.2	2.2	65.4
001K 007.OG	7	001K	2	[redacted]		61.0	-1.1	63.2	63.2	2.2	65.4
001K 008.OG	8	001K	2	[redacted]		60.8	-1.1	63.2	63.2	2.2	65.4
001K 009.OG	9	001K	2	[redacted]		60.6	-1.1	63.2	63.2	2.2	65.4
001K 010.OG	10	001K	2	[redacted]		60.3	-1.1	63.2	63.2	2.2	65.4
001L 001.OG	1	001L	2	[redacted]		69.1	-1.1	63.2	68.0	2.2	70.2
001L 002.OG	2	001L	2	[redacted]		69.7	-1.1	63.2	68.6	2.2	70.8
001L 003.OG	3	001L	2	[redacted]		69.2	-1.1	63.2	68.1	2.2	70.3
001L 004.OG	4	001L	2	[redacted]		68.6	-1.1	63.2	67.5	2.2	69.7
001L 005.OG	5	001L	2	[redacted]		67.9	-1.1	63.2	66.8	2.2	69.0
001L 006.OG	6	001L	2	[redacted]		67.3	-1.1	63.2	66.2	2.2	68.4
001L 007.OG	7	001L	2	[redacted]		66.8	-1.1	63.2	65.7	2.2	67.9
001L 008.OG	8	001L	2	[redacted]		66.2	-1.1	63.2	65.1	2.2	67.3
001L 009.OG	9	001L	2	[redacted]		65.7	-1.1	63.2	64.6	2.2	66.8
001L 010.OG	10	001L	2	[redacted]		65.3	-1.1	63.2	64.2	2.2	66.4
002D 001.OG	1	002D	1	[redacted]		61.0	-3.2	63.2	63.2	2.0	65.2
002D 002.OG	2	002D	1	[redacted]		63.0	-3.2	63.2	63.2	2.0	65.2
002D 003.OG	3	002D	1	[redacted]		63.6	-3.2	63.2	63.2	2.0	65.2
002D 004.OG	4	002D	1	[redacted]		63.9	-3.2	63.2	63.2	2.0	65.2
003A 001.OG	1	003A	1	[redacted]		67.6	-3.2	63.2	64.4	2.0	66.4
003A 002.OG	2	003A	1	[redacted]		69.1	-3.2	63.2	65.9	2.0	67.9
003A 003.OG	3	003A	1	[redacted]		69.1	-3.2	63.2	65.9	2.0	67.9
003A 004.OG	4	003A	1	[redacted]		68.9	-3.2	63.2	65.7	2.0	67.7
003A 005.OG	5	003A	1	[redacted]		68.6	-3.2	63.2	65.4	2.0	67.4
003A 006.OG	6	003A	1	[redacted]		68.2	-3.2	63.2	65.0	2.0	67.0
003A 007.OG	7	003A	1	[redacted]		67.8	-3.2	63.2	64.6	2.0	66.6
003A 008.OG	8	003A	1	[redacted]		67.4	-3.2	63.2	64.2	2.0	66.2
003A 009.OG	9	003A	1	[redacted]		67.0	-3.2	63.2	63.8	2.0	65.8
003A 010.OG	10	003A	1	[redacted]		66.7	-3.2	63.2	63.5	2.0	65.5
003A 011.OG	11	003A	1	[redacted]		66.3	-3.2	63.2	63.2	2.0	65.2
003A 012.OG	12	003A	1	[redacted]		66.0	-3.2	63.2	63.2	2.0	65.2
003A 013.OG	13	003A	1	[redacted]		65.6	-3.2	63.2	63.2	2.0	65.2
003A 014.OG	14	003A	1	[redacted]		65.2	-3.2	63.2	63.2	2.0	65.2
003A 015.OG	15	003A	1	[redacted]		63.7	-3.2	63.2	63.2	2.0	65.2
003D 001.OG	1	003D	1	[redacted]		63.9	-3.2	63.2	63.2	2.0	65.2
003D 002.OG	2	003D	1	[redacted]		65.5	-3.2	63.2	63.2	2.0	65.2
003D 003.OG	3	003D	1	[redacted]		65.9	-3.2	63.2	63.2	2.0	65.2
003D 004.OG	4	003D	1	[redacted]		65.8	-3.2	63.2	63.2	2.0	65.2
003D 005.OG	5	003D	1	[redacted]		65.5	-3.2	63.2	63.2	2.0	65.2
003D 006.OG	6	003D	1	[redacted]		65.2	-3.2	63.2	63.2	2.0	65.2
003D 007.OG	7	003D	1	[redacted]		64.8	-3.2	63.2	63.2	2.0	65.2
003D 008.OG	8	003D	1	[redacted]		64.5	-3.2	63.2	63.2	2.0	65.2
003D 009.OG	9	003D	1	[redacted]		64.1	-3.2	63.2	63.2	2.0	65.2
003D 010.OG	10	003D	1	[redacted]		63.8	-3.2	63.2	63.2	2.0	65.2
003D 011.OG	11	003D	1	[redacted]		63.4	-3.2	63.2	63.2	2.0	65.2
003D 012.OG	12	003D	1	[redacted]		63.1	-3.2	63.2	63.2	2.0	65.2
003D 013.OG	13	003D	1	[redacted]		62.8	-3.2	63.2	63.2	2.0	65.2
003D 014.OG	14	003D	1	[redacted]		62.5	-3.2	63.2	63.2	2.0	65.2
003D 015.OG	15	003D	1	[redacted]		62.3	-3.2	63.2	63.2	2.0	65.2
003H 001.OG	1	003H	1	[redacted]		66.5	-3.2	63.2	63.3	2.0	65.3
003H 002.OG	2	003H	1	[redacted]		68.0	-3.2	63.2	64.8	2.0	66.8
003H 003.OG	3	003H	1	[redacted]		68.2	-3.2	63.2	65.0	2.0	67.0
003H 004.OG	4	003H	1	[redacted]		68.1	-3.2	63.2	64.9	2.0	66.9
003H 005.OG	5	003H	1	[redacted]		67.8	-3.2	63.2	64.6	2.0	66.6
003H 006.OG	6	003H	1	[redacted]		67.4	-3.2	63.2	64.2	2.0	66.2
003H 007.OG	7	003H	1	[redacted]		67.0	-3.2	63.2	63.8	2.0	65.8
003H 008.OG	8	003H	1	[redacted]		66.6	-3.2	63.2	63.4	2.0	65.4
003H 009.OG	9	003H	1	[redacted]		66.2	-3.2	63.2	63.2	2.0	65.2
003H 010.OG	10	003H	1	[redacted]		65.9	-3.2	63.2	63.2	2.0	65.2
003H 011.OG	11	003H	1	[redacted]		65.5	-3.2	63.2	63.2	2.0	65.2
003H 012.OG	12	003H	1	[redacted]		65.2	-3.2	63.2	63.2	2.0	65.2
003H 013.OG	13	003H	1	[redacted]		64.8	-3.2	63.2	63.2	2.0	65.2
003H 014.OG	14	003H	1	[redacted]		64.5	-3.2	63.2	63.2	2.0	65.2
003H 015.OG	15	003H	1	[redacted]		62.8	-3.2	63.2	63.2	2.0	65.2
003L 002.OG	2	003L	1	[redacted]		65.1	-3.2	63.2	63.2	2.0	65.2
003L 003.OG	3	003L	1	[redacted]		65.3	-3.2	63.2	63.2	2.0	65.2
003L 004.OG	4	003L	1	[redacted]		65.2	-3.2	63.2	63.2	2.0	65.2
003L 005.OG	5	003L	1	[redacted]		64.9	-3.2	63.2	63.2	2.0	65.2
003L 006.OG	6	003L	1	[redacted]		64.5	-3.2	63.2	63.2	2.0	65.2
003L 007.OG	7	003L	1	[redacted]		64.2	-3.2	63.2	63.2	2.0	65.2
003L 008.OG	8	003L	1	[redacted]		63.9	-3.2	63.2	63.2	2.0	65.2
003L 009.OG	9	003L	1	[redacted]		63.5	-3.2	63.2	63.2	2.0	65.2
003L 010.OG	10	003L	1	[redacted]		63.2	-3.2	63.2	63.2	2.0	65.2
003L 011.OG	11	003L	1	[redacted]		62.9	-3.2	63.2	63.2	2.0	65.2

Scenario 2 - Existing Conditions

003L 012.OG	12	003L	1	[redacted]	62.6	-3.2	63.2	63.2	2.0	65.2
003L 013.OG	13	003L	1	[redacted]	62.4	-3.2	63.2	63.2	2.0	65.2
003L 014.OG	14	003L	1	[redacted]	62.1	-3.2	63.2	63.2	2.0	65.2
003L 015.OG	15	003L	1	[redacted]	62.0	-3.2	63.2	63.2	2.0	65.2
004A 001.OG	1	004A	1	[redacted]	62.8	-3.2	63.2	63.2	2.0	65.2
004A 002.OG	2	004A	1	[redacted]	64.6	-3.2	63.2	63.2	2.0	65.2
004A 003.OG	3	004A	1	[redacted]	64.9	-3.2	63.2	63.2	2.0	65.2
004A 004.OG	4	004A	1	[redacted]	64.9	-3.2	63.2	63.2	2.0	65.2
004A 005.OG	5	004A	1	[redacted]	64.8	-3.2	63.2	63.2	2.0	65.2
004A 006.OG	6	004A	1	[redacted]	64.6	-3.2	63.2	63.2	2.0	65.2
004C 001.OG	1	004C	1	[redacted]	55.1	-3.2	63.2	63.2	2.0	65.2
004C 002.OG	2	004C	1	[redacted]	55.8	-3.2	63.2	63.2	2.0	65.2
004C 003.OG	3	004C	1	[redacted]	56.7	-3.2	63.2	63.2	2.0	65.2
004C 004.OG	4	004C	1	[redacted]	57.5	-3.2	63.2	63.2	2.0	65.2
004C 005.OG	5	004C	1	[redacted]	58.0	-3.2	63.2	63.2	2.0	65.2
004C 006.OG	6	004C	1	[redacted]	58.4	-3.2	63.2	63.2	2.0	65.2
004H 001.OG	1	004H	1	[redacted]	64.4	-3.2	63.2	63.2	2.0	65.2
004H 002.OG	2	004H	1	[redacted]	65.7	-3.2	63.2	63.2	2.0	65.2
004H 003.OG	3	004H	1	[redacted]	65.9	-3.2	63.2	63.2	2.0	65.2
004H 004.OG	4	004H	1	[redacted]	65.7	-3.2	63.2	63.2	2.0	65.2
004H 005.OG	5	004H	1	[redacted]	65.4	-3.2	63.2	63.2	2.0	65.2
004H 006.OG	6	004H	1	[redacted]	65.1	-3.2	63.2	63.2	2.0	65.2
005A 001.OG	1	005A	1	[redacted]	65.4	-3.2	63.2	63.2	2.0	65.2
005A 002.OG	2	005A	1	[redacted]	66.2	-3.2	63.2	63.2	2.0	65.2
005A 003.OG	3	005A	1	[redacted]	65.9	-3.2	63.2	63.2	2.0	65.2
005A 004.OG	4	005A	1	[redacted]	65.4	-3.2	63.2	63.2	2.0	65.2
005A 005.OG	5	005A	1	[redacted]	64.9	-3.2	63.2	63.2	2.0	65.2
005C 001.OG	1	005C	1	[redacted]	68.9	-3.2	63.2	65.7	2.0	67.7
005C 002.OG	2	005C	1	[redacted]	68.7	-3.2	63.2	65.5	2.0	67.5
005C 003.OG	3	005C	1	[redacted]	67.9	-3.2	63.2	64.7	2.0	66.7
005C 004.OG	4	005C	1	[redacted]	67.1	-3.2	63.2	63.9	2.0	65.9
005C 005.OG	5	005C	1	[redacted]	66.5	-3.2	63.2	63.3	2.0	65.3
005D 001.OG	1	005D	1	[redacted]	52.7	-3.2	63.2	63.2	2.0	65.2
005D 002.OG	2	005D	1	[redacted]	53.4	-3.2	63.2	63.2	2.0	65.2
005D 003.OG	3	005D	1	[redacted]	53.3	-3.2	63.2	63.2	2.0	65.2
005D 004.OG	4	005D	1	[redacted]	53.3	-3.2	63.2	63.2	2.0	65.2
005D 005.OG	5	005D	1	[redacted]	53.5	-3.2	63.2	63.2	2.0	65.2
006C 001.OG	1	006C	3	[redacted]	53.6	0.0	63.2	63.2	1.0	64.2
006C 002.OG	2	006C	3	[redacted]	54.1	0.0	63.2	63.2	1.0	64.2
006C 003.OG	3	006C	3	[redacted]	53.6	0.0	63.2	63.2	1.0	64.2
006C 004.OG	4	006C	3	[redacted]	53.3	0.0	63.2	63.2	1.0	64.2
006C 005.OG	5	006C	3	[redacted]	53.2	0.0	63.2	63.2	1.0	64.2
006C 006.OG	6	006C	3	[redacted]	58.9	0.0	63.2	63.2	1.0	64.2
006D 001.OG	1	006D	3	[redacted]	46.0	0.0	63.2	63.2	1.0	64.2
006D 002.OG	2	006D	3	[redacted]	49.5	0.0	63.2	63.2	1.0	64.2
006D 003.OG	3	006D	3	[redacted]	50.5	0.0	63.2	63.2	1.0	64.2
006D 004.OG	4	006D	3	[redacted]	50.7	0.0	63.2	63.2	1.0	64.2
006D 005.OG	5	006D	3	[redacted]	50.5	0.0	63.2	63.2	1.0	64.2
006D 006.OG	6	006D	3	[redacted]	50.4	0.0	63.2	63.2	1.0	64.2
006E 001.OG	1	006E	3	[redacted]	62.7	0.0	63.2	63.2	1.0	64.2
006E 002.OG	2	006E	3	[redacted]	62.8	0.0	63.2	63.2	1.0	64.2
006E 003.OG	3	006E	3	[redacted]	62.6	0.0	63.2	63.2	1.0	64.2
006E 004.OG	4	006E	3	[redacted]	62.3	0.0	63.2	63.2	1.0	64.2
006E 005.OG	5	006E	3	[redacted]	61.9	0.0	63.2	63.2	1.0	64.2
006E 006.OG	6	006E	3	[redacted]	61.5	0.0	63.2	63.2	1.0	64.2
007C 001.OG	1	007C	3	[redacted]	62.8	0.0	63.2	63.2	1.0	64.2
007C 002.OG	2	007C	3	[redacted]	65.0	0.0	63.2	65.0	1.0	66.0
007C 003.OG	3	007C	3	[redacted]	66.0	0.0	63.2	66.0	1.0	67.0
007C 004.OG	4	007C	3	[redacted]	66.1	0.0	63.2	66.1	1.0	67.1
007C 005.OG	5	007C	3	[redacted]	66.1	0.0	63.2	66.1	1.0	67.1
007C 006.OG	6	007C	3	[redacted]	65.9	0.0	63.2	65.9	1.0	66.9
007E 001.OG	1	007E	3	[redacted]	45.5	0.0	63.2	63.2	1.0	64.2
007E 002.OG	2	007E	3	[redacted]	46.5	0.0	63.2	63.2	1.0	64.2
007E 003.OG	3	007E	3	[redacted]	47.5	0.0	63.2	63.2	1.0	64.2
007E 004.OG	4	007E	3	[redacted]	48.4	0.0	63.2	63.2	1.0	64.2
007E 005.OG	5	007E	3	[redacted]	48.9	0.0	63.2	63.2	1.0	64.2
007E 006.OG	6	007E	3	[redacted]	49.3	0.0	63.2	63.2	1.0	64.2
008C 001.OG	1	008C	4	[redacted]	51.0	-0.4	63.2	63.2	3.6	66.8
008C 002.OG	2	008C	4	[redacted]	52.5	-0.4	63.2	63.2	3.6	66.8
008C 003.OG	3	008C	4	[redacted]	52.6	-0.4	63.2	63.2	3.6	66.8
008C 004.OG	4	008C	4	[redacted]	52.4	-0.4	63.2	63.2	3.6	66.8
008C 005.OG	5	008C	4	[redacted]	52.0	-0.4	63.2	63.2	3.6	66.8
008C 006.OG	6	008C	4	[redacted]	51.6	-0.4	63.2	63.2	3.6	66.8
008D 001.OG	1	008D	4	[redacted]	69.5	-0.4	63.2	69.1	3.6	72.7
008D 002.OG	2	008D	4	[redacted]	70.0	-0.4	63.2	69.6	3.6	73.2
008D 003.OG	3	008D	4	[redacted]	69.5	-0.4	63.2	69.1	3.6	72.7
008D 004.OG	4	008D	4	[redacted]	68.9	-0.4	63.2	68.5	3.6	72.1
008D 005.OG	5	008D	4	[redacted]	68.3	-0.4	63.2	67.9	3.6	71.5
008D 006.OG	6	008D	4	[redacted]	67.7	-0.4	63.2	67.3	3.6	70.9
008E 001.OG	1	008E	4	[redacted]	60.4	-0.4	63.2	63.2	3.6	66.8
008E 002.OG	2	008E	4	[redacted]	60.7	-0.4	63.2	63.2	3.6	66.8
008E 003.OG	3	008E	4	[redacted]	60.7	-0.4	63.2	63.2	3.6	66.8
008E 004.OG	4	008E	4	[redacted]	60.5	-0.4	63.2	63.2	3.6	66.8
008E 005.OG	5	008E	4	[redacted]	60.1	-0.4	63.2	63.2	3.6	66.8
008E 006.OG	6	008E	4	[redacted]	59.7	-0.4	63.2	63.2	3.6	66.8
009A 001.OG	1	009A	3	[redacted]	68.3	0.0	63.2	68.3	1.0	69.3
009A 002.OG	2	009A	3	[redacted]	68.6	0.0	63.2	68.6	1.0	69.6
009A 003.OG	3	009A	3	[redacted]	68.2	0.0	63.2	68.2	1.0	69.2
009A 004.OG	4	009A	3	[redacted]	67.8	0.0	63.2	67.8	1.0	68.8
009A 005.OG	5	009A	3	[redacted]	67.4	0.0	63.2	67.4	1.0	68.4
009A 006.OG	6	009A	3	[redacted]	66.9	0.0	63.2	66.9	1.0	67.9
009A 007.OG	7	009A	3	[redacted]	66.5	0.0	63.2	66.5	1.0	67.5
009A 008.OG	8	009A	3	[redacted]	66.1	0.0	63.2	66.1	1.0	67.1
009A 009.OG	9	009A	3	[redacted]	65.7	0.0	63.2	65.7	1.0	66.7
009A 010.OG	10	009A	3	[redacted]	65.4	0.0	63.2	65.4	1.0	66.4
009A 011.OG	11	009A	3	[redacted]	65.0	0.0	63.2	65.0	1.0	66.0
009B 001.OG	1	009B	3	[redacted]	63.3	0.0	63.2	63.3	1.0	64.3
009B 002.OG	2	009B	3	[redacted]	63.2	0.0	63.2	63.2	1.0	64.2
009B 003.OG	3	009B	3	[redacted]	63.0	0.0	63.2	63.2	1.0	64.2
009B 004.OG	4	009B	3	[redacted]	62.9	0.0	63.2	63.2	1.0	64.2
009B 005.OG	5	009B	3	[redacted]	62.6	0.0	63.2	63.2	1.0	64.2
009B 006.OG	6	009B	3	[redacted]	62.2	0.0	63.2	63.2	1.0	64.2
009B 007.OG	7	009B	3	[redacted]	61.9	0.0	63.2	63.2	1.0	64.2
009B 008.OG	8	009B	3	[redacted]	61.6	0.0	63.2	63.2	1.0	64.2
009B 009.OG	9	009B	3	[redacted]	61.4	0.0	63.2	63.2	1.0	64.2
009B 010.OG	10	009B	3	[redacted]	61.1	0.0	63.2	63.2	1.0	64.2
009B 011.OG	11	009B	3	[redacted]	59.2	0.0	63.2	63.2	1.0	64.2
009C 001.OG	1	009C	3	[redacted]	35.5	0.0	63.2	63.2	1.0	64.2
009C 002.OG	2	009C	3	[redacted]	36.1	0.0	63.2	63.2	1.0	64.2
009C 003.OG	3	009C	3	[redacted]	36.7	0.0	63.2	63.2	1.0	64.2
009C 004.OG	4	009C	3	[redacted]	37.6	0.0	63.2	63.2	1.0	64.2
009C 005.OG	5	009C	3	[redacted]	39.3	0.0	63.2	63.2	1.0	64.2
009C 006.OG	6	009C	3	[redacted]	43.7	0.0	63.2	63.2	1.0	64.2
009C 007.OG	7	009C	3	[redacted]	51.0	0.0	63.2	63.2	1.0	64.2
009C 008.OG	8	009C	3	[redacted]	53.8	0.0	63.2	63.2	1.0	64.2
009C 009.OG	9	009C	3	[redacted]	54.6	0.0	63.2	63.2	1.0	64.2
009C 010.OG	10	009C	3	[redacted]	55.8	0.0	63.2	63.2	1.0	64.2
009C 011.OG	11	009C	3	[redacted]	55.0	0.0	63.2	63.2	1.0	64.2
009E 001.OG	1	009E	3	[redacted]	41.3	0.0	63.2	63.2	1.0	64.2
009E 002.OG	2	009E	3	[redacted]	45.3	0.0	63.2	63.2	1.0	64.2
009E 003.OG	3	009E	3	[redacted]	52.3	0.0	63.2	63.2	1.0	64.2
009E 004.OG	4	009E	3	[redacted]	58.1	0.0	63.2	63.2	1.0	64.2
009E 005.OG	5	009E	3	[redacted]	59.1	0.0	63.2	63.2	1.0	64.2
009E 006.OG	6	009E	3	[redacted]	60.5	0.0	63.2	63.2	1.0	64.2
009E 007.OG	7	009E	3	[redacted]	60.2	0.0	63.2	63.2	1.0	64.2
009E 008.OG	8	009E	3	[redacted]	60.0	0.0	63.2	63.2	1.0	64.2
009E 009.OG	9	009E	3	[redacted]	59.9	0.0	63.2	63.2	1.0	64.2
009E 010.OG	10	009E	3	[redacted]	59.6	0.0	63.2	63.2	1.0	64.2
009E 011.OG	11	009E	3	[redacted]	59.5	0.0	63.2	63.2	1.0	64.2
009G 001.OG	1	009G	3	[redacted]	34.7	0.0	63.2	63.2	1.0	64.2
009G 002.OG	2	009G	3	[redacted]	35.3	0.0	63.2	63.2	1.0	64.2
009G 003.OG	3	009G	3	[redacted]	35.9	0.0	63.2	63.2	1.0	64.2
009G 004.OG	4	009G	3	[redacted]	36.5	0.0	63.2	63.2	1.0	64.2
009G 005.OG	5	009G	3	[redacted]	37.3	0.0	63.2	63.2	1.0	64.2
009G 006.OG	6	009G	3	[redacted]	38.7	0.0	63.2	63.2	1.0	64.2
009G 007.OG	7	009G	3	[redacted]	41.2	0.0	63.2	63.2	1.0	64.2
009G 008.OG	8	009G	3	[redacted]	46.3	0.0	63.2	63.2	1.0	64.2
009G 009.OG	9	009G	3	[redacted]	48.8	0.0	63.2	63.2	1.0	64.2
009G 010.OG	10	009G	3	[redacted]	49.9	0.0	63.2	63.2	1.0	64.2
009G 011.OG	11	009G	3	[redacted]	50.2	0.0	63.2	63.2	1.0	64.2
009I 001.OG	1	009I	3	[redacted]	34.1	0.0	63.2	63.2	1.0	64.2
009I 002.OG	2	009I	3	[redacted]	34.6	0.0	63.2	63.2	1.0	64.2
009I 003.OG	3	009I	3	[redacted]	35.1	0.0	63.2	63.2	1.0	64.2
009I 004.OG	4	009I	3	[redacted]	35.7	0.0	63.2	63.2	1.0	64.2
009I 005.OG	5	009I	3	[redacted]	36.2	0.0	63.2	63.2	1.0	64.2
009I 006.OG	6	009I	3	[redacted]	37.5	0.0	63.2	63.2	1.0	64.2
009I 007.OG	7	009I	3	[redacted]	39.3	0.0	63.2	63.2	1.0	64.2
009I 008.OG	8	009I	3	[redacted]	40.9	0.0	63.2	63.2	1.0	64.2
009I 009.OG	9	009I	3	[redacted]	42.1	0.0	63.2	63.2	1.0	64.2
009I 010.OG	10	009I	3	[redacted]	43.9	0.0	63.2	63.2	1.0	64.2
009I 011.OG	11	009I	3	[redacted]	51.5	0.0	63.2	63.2	1.0	64.2
10	1	10	4	[redacted]	72.4	-0.4	63.2	72.0	3.6	75.6
011B 001.OG	1	011B	3	[redacted]	63.1	0.0	63.2	63.2	1.0	64.2
011B 002.OG	2	011B	3	[redacted]	64.6	0.0	63.2	64.6	1.0	65.6
011B 003.OG	3	011B	3	[redacted]	64.8	0.0	63.2	64.8	1.0	65.8
011B 004.OG	4	011B	3	[redacted]	64.5	0.0	63.2	64.5	1.0	65.5
011B 005.OG	5	011B	3	[redacted]	64.2	0.0	63.2	64.2	1.0	65.2
011B 006.OG	6	011B	3	[redacted]	63.9	0.0	63.2	63.9	1.0	64.9
012D 001.OG	1	012D	1	[redacted]	60.9	-3.2	63.2	63.2	2.0	65.2
012D 002.OG	2	012D	1	[redacted]	62.5	-3.2	63.2	63.2	2.0	65.2
012D 003.OG	3	012D	1	[redacted]	63.2	-3.2	63.2	63.2	2.0	65.2
012D 004.OG	4	012D	1	[redacted]	63.4	-3.2	63.2	63.2	2.0	65.2
012D 005.OG	5	012D	1	[redacted]	63.5	-3.2	63.2	63.2	2.0	65.2
012D 006.OG	6	012D	1	[redacted]	63.5	-3.2	63.2	63.2	2.0	65.2
012D 007.OG	7	012D	1	[redacted]	63.5	-3.2	63.2	63.2	2.0	65.2
012D 008.OG	8	012D	1	[redacted]	63.3	-3.2	63.2	63.2	2.0	65.2
012D 009.OG	9	012D	1	[redacted]	63.2	-3.2	63.2	63.2	2.0	65.2
012D 010.OG	10	012D	1	[redacted]	63.2	-3.2	63.2	63.2	2.0	65.2
012D 011.OG	11	012D	1	[redacted]	63.3	-3.2	63.2	63.2	2.0	65.2
012D 012.OG	12	012D	1	[redacted]	63.3	-3.2	63.2	63.2	2.0	65.2
012D 013.OG	13	012D	1	[redacted]	63.2	-3.2	63.2	63.2	2.0	65.2
012D 014.OG	14	012D	1	[redacted]	63.1	-3.2	63.2	63.2	2.0	65.2
012D 015.OG	15	012D	1	[redacted]	63.1	-3.2	63.2	63.2	2.0	65.2
012D 016.OG	16	012D	1	[redacted]	63.1	-3.2	63.2	63.2	2.0	65.2
012D 017.OG	17	012D	1	[redacted]	63.2	-3.2	63.2	63.2	2.0	65.2
012D 018.OG	18	012D	1	[redacted]	63.1	-3.2	63.2	63.2	2.0	65.2
012D 019.OG	19	012D	1	[redacted]	63.0	-3.2	63.2	63.2	2.0	65.2
012D 020.OG	20	012D	1	[redacted]	62.8	-3.2	63.2	63.2	2.0	65.2
013E 001.OG	1	013E	3	[redacted]	59.4	0.0	63.2	63.2	1.0	64.2
013E 002.OG	2	013E	3	[redacted]	61.8	0.0	63.2	63.2	1.0	64.2
013E 003.OG	3	013E	3	[redacted]	62.3	0.0	63.2	63.2	1.0	64.2
013E 004.OG	4	013E	3	[redacted]	62.1	0.0	63.2	63.2	1.0	64.2
013E 005.OG	5	013E	3	[redacted]	61.8	0.0	63.2	63.2	1.0	64.2

Scenario 2 - Construction Noise Results

Construction Noise Results

							Construction Duration																																				
							5					3					4					3					10					7					14						
							2020 Sep					2020 Dec					2021 Feb					2021 July					2022 Jan					2022 Oct					2023 Jun						
							Leq				L10	Leq				L10	Leq				L10	Leq				L10	Leq				L10	Leq				L10	Leq				L10		
Bldg #	Façade Side	CadnaA Receptor Sites	Elevation (floor)	Façade Number	Existing Leq(1)	Existing L10	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Const	Total	Change	Exceed?	Total	Max Change	Max L10
009	A	009A 001.OG	1	009A	68.3	69.3	-88.0	68.3	0.0	0.0	69.3	-88.0	68.3	0.0	0.0	69.3	-88.0	68.3	0.0	0.0	69.3	-88.0	68.3	0.0	0.0	69.3	67.4	70.9	2.6	0.0	71.9	51.8	68.4	0.1	0.0	69.4	52.2	68.4	0.1	0.0	69.4	2.6	71.9
009	A	009A 002.OG	2	009A	68.6	69.6	-88.0	68.6	0.0	0.0	69.6	-88.0	68.6	0.0	0.0	69.6	-88.0	68.6	0.0	0.0	69.6	-88.0	68.6	0.0	0.0	69.6	67.2	71.0	2.4	0.0	72.0	52.3	68.7	0.1	0.0	69.7	52.8	68.7	0.1	0.0	69.7	2.4	72.0
009	A	009A 003.OG	3	009A	68.2	69.2	-88.0	68.2	0.0	0.0	69.2	-88.0	68.2	0.0	0.0	69.2	-88.0	68.2	0.0	0.0	69.2	-88.0	68.2	0.0	0.0	69.2	66.2	70.3	2.1	0.0	71.3	51.8	68.3	0.1	0.0	69.3	52.6	68.3	0.1	0.0	69.3	2.1	71.3
009	A	009A 004.OG	4	009A	67.8	68.8	-88.0	67.8	0.0	0.0	68.8	-88.0	67.8	0.0	0.0	68.8	-88.0	67.8	0.0	0.0	68.8	-88.0	67.8	0.0	0.0	68.8	65.5	69.8	2.0	0.0	70.8	51.2	67.9	0.1	0.0	68.9	52.6	67.9	0.1	0.0	68.9	2.0	70.8
009	A	009A 005.OG	5	009A	67.4	68.4	-88.0	67.4	0.0	0.0	68.4	-88.0	67.4	0.0	0.0	68.4	-88.0	67.4	0.0	0.0	68.4	-88.0	67.4	0.0	0.0	68.4	64.9	69.3	1.9	0.0	70.3	50.6	67.5	0.1	0.0	68.5	52.2	67.5	0.1	0.0	68.5	1.9	70.3
009	A	009A 006.OG	6	009A	66.9	67.9	-88.0	66.9	0.0	0.0	67.9	-88.0	66.9	0.0	0.0	67.9	-88.0	66.9	0.0	0.0	67.9	-88.0	66.9	0.0	0.0	67.9	64.3	68.8	1.9	0.0	69.8	50.1	67.0	0.1	0.0	68.0	51.8	67.0	0.1	0.0	68.0	1.9	69.8
009	A	009A 007.OG	7	009A	66.5	67.5	-88.0	66.5	0.0	0.0	67.5	-88.0	66.5	0.0	0.0	67.5	-88.0	66.5	0.0	0.0	67.5	-88.0	66.5	0.0	0.0	67.5	63.9	68.4	1.9	0.0	69.4	49.6	66.6	0.1	0.0	67.6	51.5	66.6	0.1	0.0	67.6	1.9	69.4
009	A	009A 008.OG	8	009A	66.1	67.1	-88.0	66.1	0.0	0.0	67.1	-88.0	66.1	0.0	0.0	67.1	-88.0	66.1	0.0	0.0	67.1	-88.0	66.1	0.0	0.0	67.1	63.4	68.0	1.9	0.0	69.0	49.2	66.2	0.1	0.0	67.2	51.2	66.2	0.1	0.0	67.2	1.9	69.0
009	A	009A 009.OG	9	009A	65.7	66.7	-88.0	65.7	0.0	0.0	66.7	-88.0	65.7	0.0	0.0	66.7	-88.0	65.7	0.0	0.0	66.7	-88.0	65.7	0.0	0.0	66.7	63.0	67.6	1.9	0.0	68.6	48.8	65.8	0.1	0.0	66.8	50.9	65.8	0.1	0.0	66.8	1.9	68.6
009	A	009A 010.OG	10	009A	65.4	66.4	-88.0	65.4	0.0	0.0	66.4	-88.0	65.4	0.0	0.0	66.4	-88.0	65.4	0.0	0.0	66.4	-88.0	65.4	0.0	0.0	66.4	62.7	67.3	1.9	0.0	68.3	48.4	65.5	0.1	0.0	66.5	50.6	65.5	0.1	0.0	66.5	1.9	68.3
009	A	009A 011.OG	11	009A	65.0	66.0	-88.0	65.0	0.0	0.0	66.0	-88.0	65.0	0.0	0.0	66.0	-88.0	65.0	0.0	0.0	66.0	-88.0	65.0	0.0	0.0	66.0	62.8	67.0	2.0	0.0	68.0	48.3	65.1	0.1	0.0	66.1	51.0	65.2	0.2	0.0	66.2	2.0	68.0
009	B	009B 001.OG	1	009B	63.3	64.3	-88.0	63.3	0.0	0.0	64.3	-88.0	63.3	0.0	0.0	64.3	-88.0	63.3	0.0	0.0	64.3	-88.0	63.3	0.0	0.0	64.3	61.3	65.4	2.1	0.0	66.4	54.8	63.9	0.6	0.0	64.9	56.5	64.1	0.8	0.0	65.1	2.1	66.4
009	B	009B 002.OG	2	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.9	66.6	3.4	YES	67.6	54.8	63.8	0.6	0.0	64.8	58.8	64.5	1.3	0.0	65.5	3.4	67.6
009	B	009B 003.OG	3	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.5	66.9	3.7	YES	67.9	54.1	63.7	0.5	0.0	64.7	58.5	64.5	1.3	0.0	65.5	3.7	67.9
009	B	009B 004.OG	4	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.4	66.9	3.7	YES	67.9	53.3	63.6	0.4	0.0	64.6	58.2	64.4	1.2	0.0	65.4	3.7	67.9
009	B	009B 005.OG	5	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.3	66.8	3.6	YES	67.8	52.6	63.6	0.4	0.0	64.6	57.9	64.3	1.1	0.0	65.3	3.6	67.8
009	B	009B 006.OG	6	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.2	66.7	3.5	YES	67.7	51.9	63.5	0.3	0.0	64.5	57.6	64.3	1.1	0.0	65.3	3.5	67.7
009	B	009B 007.OG	7	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.0	66.6	3.4	YES	67.6	51.3	63.5	0.3	0.0	64.5	57.2	64.2	1.0	0.0	65.2	3.4	67.6
009	B	009B 008.OG	8	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.8	66.5	3.3	YES	67.5	50.8	63.4	0.2	0.0	64.4	56.9	64.1	0.9	0.0	65.1	3.3	67.5
009	B	009B 009.OG	9	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.7	66.5	3.3	YES	67.5	50.2	63.4	0.2	0.0	64.4	56.6	64.1	0.9	0.0	65.1	3.3	67.5
009	B	009B 010.OG	10	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.5	66.4	3.2	YES	67.4	49.8	63.4	0.2	0.0	64.4	56.3	64.0	0.8	0.0	65.0	3.2	67.4
009	B	009B 011.OG	11	009B	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.6	66.4	3.2	YES	67.4	49.5	63.4	0.2	0.0	64.4	56.1	64.0	0.8	0.0	65.0	3.2	67.4
009	C	009C 001.OG	1	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	63.3	66.3	3.1	YES	67.3	44.5	63.3	0.1	0.0	64.3	54.1	63.7	0.5	0.0	64.7	3.1	67.3
009	C	009C 002.OG	2	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.2	70.2	7.0	YES	71.2	46.2	63.3	0.1	0.0	64.3	56.3	64.0	0.8	0.0	65.0	7.0	71.2
009	C	009C 003.OG	3	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.5	70.4	7.2	YES	71.4	46.6	63.3	0.1	0.0	64.3	56.9	64.1	0.9	0.0	65.1	7.2	71.4
009	C	009C 004.OG	4	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.9	70.7	7.5	YES	71.7	47.3	63.3	0.1	0.0	64.3	57.0	64.1	0.9	0.0	65.1	7.5	71.7
009	C	009C 005.OG	5	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	70.2	71.0	7.8	YES	72.0	47.6	63.3	0.1	0.0	64.3	56.9	64.1	0.9	0.0	65.1	7.8	72.0
009	C	009C 006.OG	6	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	70.6	71.3	8.1	YES	72.3	48.0	63.3	0.1	0.0	64.3	56.8	64.1	0.9	0.0	65.1	8.1	72.3
009	C	009C 007.OG	7	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	71.0	71.7	8.5	YES	72.7	48.0	63.3	0.1	0.0	64.3	56.6	64.1	0.9	0.0	65.1	8.5	72.7
009	C	009C 008.OG	8	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	71.3	71.9	8.7	YES	72.9	48.1	63.3	0.1	0.0	64.3	56.5	64.0	0.8	0.0	65.0	8.7	72.9
009	C	009C 009.OG	9	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	70.9	71.6	8.4	YES	72.6	48.4	63.3	0.1	0.0	64.3	56.4	64.0	0.8	0.0	65.0	8.4	72.6
009	C	009C 010.OG	10	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	70.8	71.5	8.3	YES	72.5	48.3	63.3	0.1	0.0	64.3	56.2	64.0	0.8	0.0	65.0	8.3	72.5
009	C	009C 011.OG	11	009C	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.6	69.7	6.5	YES	70.7	48.5	63.3	0.1	0.0	64.3	56.1	64.0	0.8	0.0	65.0	6.5	70.7
009	E	009E 001.OG	1	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	48.2	63.3	0.1	0.0	64.3	26.0	63.2	0.0	0.0	64.2	37.1	63.2	0.0	0.0	64.2	0.1	64.3
009	E	009E 002.OG	2	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	50.9	63.4	0.2	0.0	64.4	29.6	63.2	0.0	0.0	64.2	40.1	63.2	0.0	0.0	64.2	0.2	64.4
009	E	009E 003.OG	3	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	55.9	63.9	0.7	0.0	64.9	36.8	63.2	0.0	0.0	64.2	45.0	63.3	0.1	0.0	64.3	0.7	64.9
009	E	009E 004.OG	4	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	57.7	64.3	1.1	0.0	65.3	43.3	63.2	0.0	0.0	64.2	47.8	63.3	0.1	0.0	64.3	1.1	65.3
009	E	009E 005.OG	5	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	57.8	64.3	1.1	0.0	65.3	44.3	63.3	0.1	0.0	64.3	48.6	63.3	0.1	0.0	64.3	1.1	65.3
009	E	009E 006.OG	6	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.0	64.3	1.1	0.0	65.3	46.1	63.3	0.1	0.0	64.3	49.3	63.4	0.2	0.0	64.4	1.1	65.3
009	E	009E 007.OG	7	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.1	64.4	1.2	0.0	65.4	45.8	63.3	0.1	0.0	64.3	49.1	63.4	0.2	0.0	64.4	1.2	65.4
009	E	009E 008.OG	8	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.1	64.4	1.2	0.0	65.4	45.7	63.3	0.1	0.0	64.3	49.1	63.4	0.2	0.0	64.4	1.2	65.4
009	E	009E 009.OG	9	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.0	64.3	1.1	0.0	65.3	45.4	63.3	0.1	0.0	64.3	48.9	63.4	0.2	0.0	64.4	1.1	65.3
009	E	009E 010.OG	10	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.0	64.3	1.1	0.0	65.3	45.1	63.3	0.1	0.0	64.3	48.8	63.4	0.2	0.0	64.4	1.1	65.3
009	E	009E 011.OG	11	009E	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	58.6	64.5	1.3	0.0	65.5	45.2	63.3	0.1	0.0	64.3	48.9	63.4	0.2	0.0	64.4	1.3	65.5
009	G	009G 001.OG	1	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	64.4	66.9	3.7	YES	67.9	40.4	63.2	0.0	0.0	64.2	52.7	63.6	0.4	0.0	64.6	3.7	67.9
009	G	009G 002.OG	2	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.1	70.1	6.9	YES	71.1	45.1	63.3	0.1	0.0	64.3	57.7	64.3	1.1	0.0	65.3	6.9	71.1
009	G	009G 003.OG	3	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.3	70.3	7.1	YES	71.3	46.0	63.3	0.1	0.0	64.3	57.9	64.3	1.1	0.0	65.3	7.1	71.3
009	G	009G 004.OG	4	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.3	70.3	7.1	YES	71.3	46.7	63.3	0.1	0.0	64.3	57.8	64.3	1.1	0.0	65.3	7.1	71.3
009	G	009G 005.OG	5	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.2	70.2	7.0	YES	71.2	47.5	63.3	0.1	0.0	64.3	57.7	64.3	1.1	0.0	65.3	7.0	71.2
009	G	009G 006.OG	6	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.2	70.2	7.0	YES	71.2	48.1	63.3	0.1	0.0	64.3	57.6	64.3	1.1	0.0	65.3	7.0	71.2
009	G	009G 007.OG	7	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.1	70.1	6.9	YES	71.1	48.4	63.3	0.1	0.0	64.3	57.4	64.2	1.0	0.0	65.2	6.9	71.1
009	G	009G 008.OG	8	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.0	70.0	6.8	YES	71.0	48.4	63.3	0.1	0.0	64.3	57.1	64.2	1.0	0.0	65.2	6.8	71.0
009	G	009G 009.OG	9	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.0	70.0	6.8	YES	71.0	48.4	63.3	0.1	0.0	64.3	56.9	64.1	0.9	0.0	65.1	6.8	71.0
009	G	009G 010.OG	10	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.0	70.0	6.8	YES	71.0	48.4	63.3	0.1	0.0	64.3	56.6	64.1	0.9	0.0	65.1	6.8	71.0
009	G	009G 011.OG	11	009G	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	69.1	70.1	6.9	YES	71.1	48.3	63.3	0.1	0.0	64.3	56.4	64.0	0.8	0.0	65.0	6.9	71.1
009	I	009I 001.OG	1	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	60.6	65.1	1.9	0.0	66.1	40.0	63.2	0.0	0.0	64.2	41.8	63.2	0.0	0.0	64.2	1.9	66.1
009	I	009I 002.OG	2	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.7	69.8	6.6	YES	70.8	45.5	63.3	0.1	0.0	64.3	57.3	64.2	1.0	0.0	65.2	6.6	70.8
009	I	009I 003.OG	3	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.9	69.9	6.7	YES	70.9	45.8	63.3	0.1	0.0	64.3	57.2	64.2	1.0	0.0	65.2	6.7	70.9
009	I	009I 004.OG	4	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.9	69.9	6.7	YES	70.9	46.1	63.3	0.1	0.0	64.3	57.0	64.1	0.9	0.0	65.1	6.7	70.9
009	I	009I 005.OG	5	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.8	69.9	6.7	YES	70.9	46.5	63.3	0.1	0.0	64.3	56.8	64.1	0.9	0.0	65.1	6.7	70.9
009	I	009I 006.OG	6	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.6	69.7	6.5	YES	70.7	46.8	63.3	0.1	0.0	64.3	56.5	64.0	0.8	0.0	65.0	6.5	70.7
009	I	009I 007.OG	7	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.4	69.5	6.3	YES	70.5	46.9	63.3	0.1	0.0	64.3	56.1	64.0	0.8	0.0	65.0	6.3	70.5
009	I	009I 008.OG	8	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.2	69.4	6.2	YES	70.4	47.3	63.3	0.1	0.0	64.3	55.8	63.9	0.7	0.0	64.9	6.2	70.4
009	I	009I 009.OG	9	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	68.0	69.2	6.0	YES	70.2	47.6	63.3	0.1	0.0	64.3	55.4	63.9	0.7	0.0	64.9	6.0	70.2
009	I	009I 010.OG	10	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	67.9	69.2	6.0	YES	70.2	47.5	63.3	0.1	0.0	64.3	55.0	63.8	0.6	0.0	64.8	6.0	70.2
009	I	009I 011.OG	11	009I	63.2	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	-88.0	63.2	0.0	0.0	64.2	67.7	69.0	5.8	YES	70.0	47.1	63.3	0.1	0.0	64.3	54.9	63.8	0.6	0.0	64.8	5.8	70.0