



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** 280 Cadman Plaza West**1. Reference Numbers**CEQR REFERENCE NUMBER (to be assigned by lead agency)
15DME005K

BSA REFERENCE NUMBER (if applicable)

ULURP REFERENCE NUMBER (if applicable)
M860392AZSK, 150399PPK, 150400PQKOTHER REFERENCE NUMBER(S) (if applicable)
(e.g., legislative intro, CAPA)**2a. Lead Agency Information**NAME OF LEAD AGENCY
Mayor's Office of Sustainability**2b. Applicant Information**NAME OF APPLICANT
Cadman Associates LLCNAME OF LEAD AGENCY CONTACT PERSON
Nilda MesaNAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON
Karen HuADDRESS 253 Broadway, 7th Floor

ADDRESS 826 Broadway, 11th Floor

CITY New York

STATE NY

ZIP 10038

CITY New York

STATE NY

ZIP 10003

TELEPHONE (212) 788-9956

EMAIL
nmesa@cityhall.nyc.gov

TELEPHONE (212) 710-6026

EMAIL khu@hudsoninc.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):**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 proposed project would redevelop the 26,620-square-foot (sf) site that currently contains the 2-story Brooklyn Heights branch of the Brooklyn Public Library (Block 239, Lot 16; "the development site") with an approximately 407,989-gross-square-foot (gsf) 36-story mixed-use building. The proposed mixed-use building would contain: approximately 21,500 gsf of improved branch library space; approximately 19,800 gsf of community facility use; approximately 650 gsf of retail use; approximately 308,082 gsf of residential use (139 market-rate units as designed); and an approximately 38,098-gsf, 45-space below-grade parking facility. For conservative analysis purposes, it is assumed that a larger number of residential units could be developed within the proposed mixed-use building on the development site. Therefore, while 139 units are proposed (at an average size of 2,216 gsf), the analysis will instead assume the development of 308 units, at a much smaller, standard unit size of 1,000 gsf. During construction of the proposed project, the branch library would be relocated to a temporary facility at 95 Remsen Street (Block 249, Lot 16; "the interim site"). The proposed project also would develop 115 affordable dwelling units at two off-site locations at 911-917 Altantic Avenue and 1041-1047 Fulton Street within the Clinton Hill neighborhood of Brooklyn Community District 2. Information requested on this form is provided in the attached pages for the two off-site housing locations.

Project Location

BOROUGH Brooklyn

COMMUNITY DISTRICT(S) CD 2

STREET ADDRESS 280 Cadman Plaza West

TAX BLOCK(S) AND LOT(S) Block 239, Lot 16

ZIP CODE 11201

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Block bounded by Cadman Plaza West (to the northeast), Clinton Street (to the west), and Pierrepont Street (to the south)

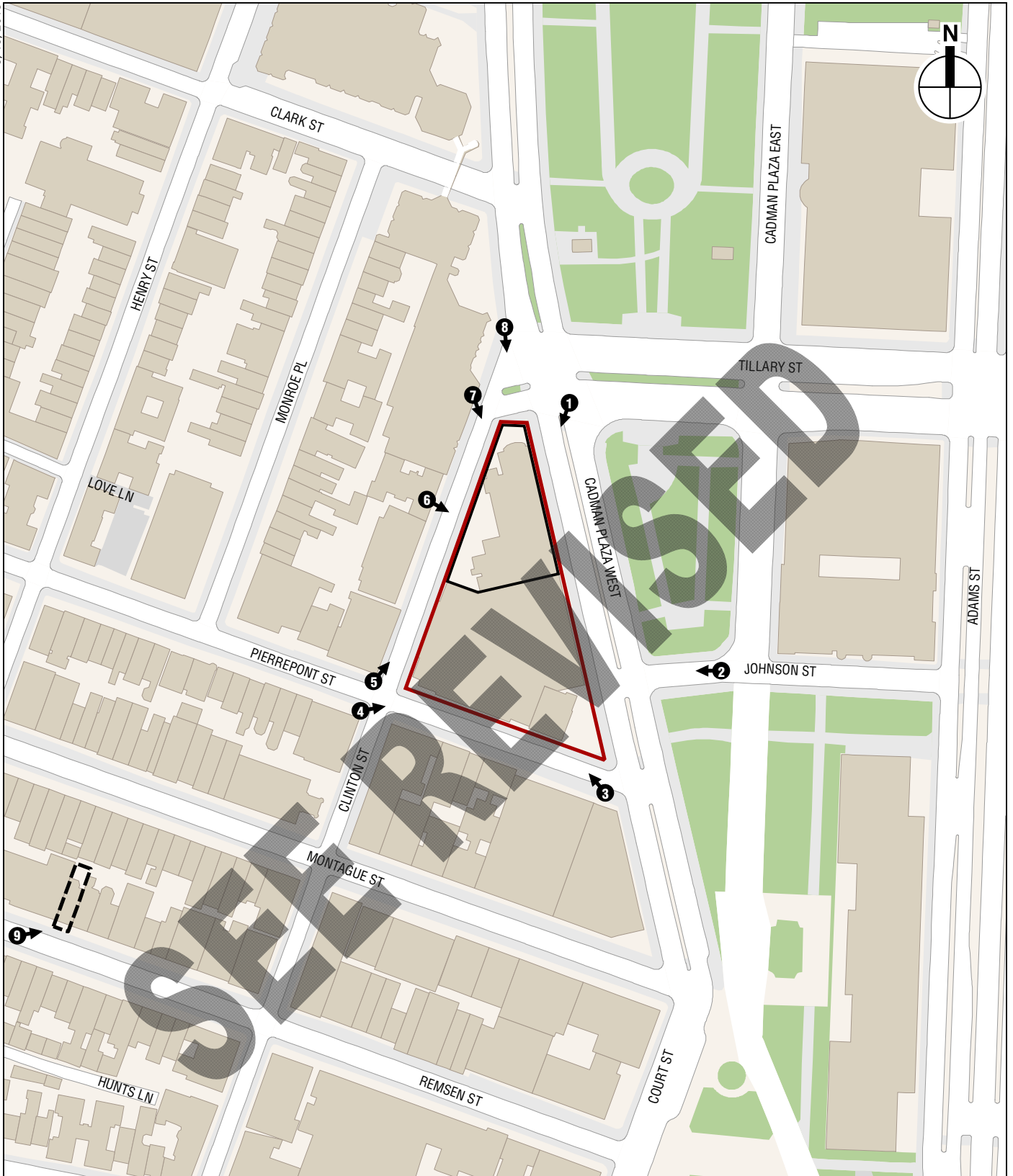
EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY C6-4

ZONING SECTIONAL MAP NUMBER 12d

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:

<input checked="" type="checkbox"/> SPECIAL PERMIT (if appropriate, specify type: <input checked="" type="checkbox"/> modification; <input type="checkbox"/> renewal; <input type="checkbox"/> other); EXPIRATION DATE: SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION ZR §74-721	
Board of Standards and Appeals: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> VARIANCE (use) <input type="checkbox"/> VARIANCE (bulk) <input type="checkbox"/> SPECIAL PERMIT (if appropriate, specify type: <input type="checkbox"/> modification; <input type="checkbox"/> renewal; <input type="checkbox"/> other); EXPIRATION DATE: SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION	
Department of Environmental Protection: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If "yes," specify:	
Other City Approvals Subject to CEQR (check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> LEGISLATION <input type="checkbox"/> RULEMAKING <input type="checkbox"/> CONSTRUCTION OF PUBLIC FACILITIES <input checked="" type="checkbox"/> 384(b)(4) APPROVAL <input type="checkbox"/> OTHER, explain: </div> <div style="width: 48%;"> <input type="checkbox"/> FUNDING OF CONSTRUCTION, specify: <input type="checkbox"/> POLICY OR PLAN, specify: <input type="checkbox"/> FUNDING OF PROGRAMS, specify: <input type="checkbox"/> PERMITS, specify: </div> </div>	
Other City Approvals Not Subject to CEQR (check all that apply) <input checked="" type="checkbox"/> PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) <input type="checkbox"/> LANDMARKS PRESERVATION COMMISSION APPROVAL <input type="checkbox"/> OTHER, explain:	
State or Federal Actions/Approvals/Funding: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If "yes," specify:	
6. Site Description: <i>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.</i> Graphics: <i>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.</i> <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> SITE LOCATION MAP <input checked="" type="checkbox"/> ZONING MAP <input checked="" type="checkbox"/> SANBORN OR OTHER LAND USE MAP <input checked="" type="checkbox"/> TAX MAP <input type="checkbox"/> FOR LARGE AREAS OR MULTIPLE SITES, A GIS SHAPE FILE THAT DEFINES THE PROJECT SITE(S) <input checked="" type="checkbox"/> PHOTOGRAPHS OF THE PROJECT SITE TAKEN WITHIN 6 MONTHS OF EAS SUBMISSION AND KEYED TO THE SITE LOCATION MAP </div>	
Physical Setting (both developed and undeveloped areas) Total directly affected area (sq. ft.): 26,620 sf Waterbody area (sq. ft.) and type: 0 Roads, buildings, and other paved surfaces (sq. ft.): 26,620 sf Other, describe (sq. ft.): 0	
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): ±407,989 NUMBER OF BUILDINGS: 1 GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): ±407,989 HEIGHT OF EACH BUILDING (ft.): ±441 NUMBER OF STORIES OF EACH BUILDING: 36	
Does the proposed project involve changes in zoning on one or more sites? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If "yes," specify: The total square feet owned or controlled by the applicant: The total square feet not owned or controlled by the applicant:	
Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known): AREA OF TEMPORARY DISTURBANCE: 26,620 sq. ft. (width x length) VOLUME OF DISTURBANCE: 931,700 cubic ft. (width x length x depth) AREA OF PERMANENT DISTURBANCE: 26,620 sq. ft. (width x length)	
8. Analysis Year CEQR Technical Manual Chapter 2 ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2019 ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 40 WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF MULTIPLE PHASES, HOW MANY? BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:	
9. Predominant Land Use in the Vicinity of the Project (check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <input checked="" type="checkbox"/> RESIDENTIAL <input type="checkbox"/> MANUFACTURING <input checked="" type="checkbox"/> COMMERCIAL <input checked="" type="checkbox"/> PARK/FOREST/OPEN SPACE </div> <div style="width: 35%;"> <input checked="" type="checkbox"/> OTHER, specify: Institutional (government buildings, religious and educational facilities) </div> </div>	

6/16/2015



Project Area (Zoning Lot)

Development Site

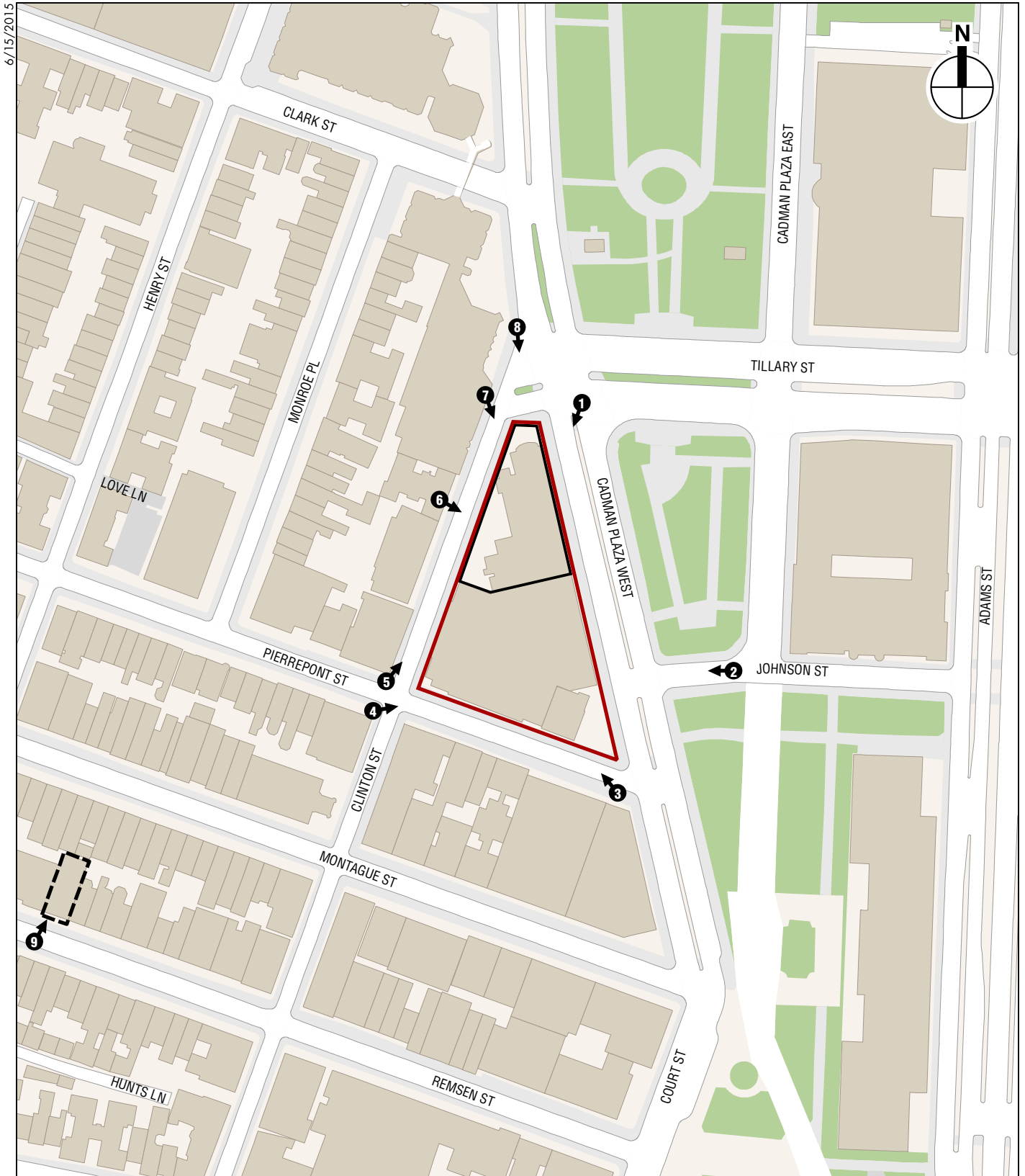
Branch Library Interim Site

Photo View Direction and Reference Number

0 400 FEET

280 CADMAN PLAZA WEST

Project Location and Key to Photographs
Figure 1



Project Area (Zoning Lot)

Development Site

Branch Library Interim Site

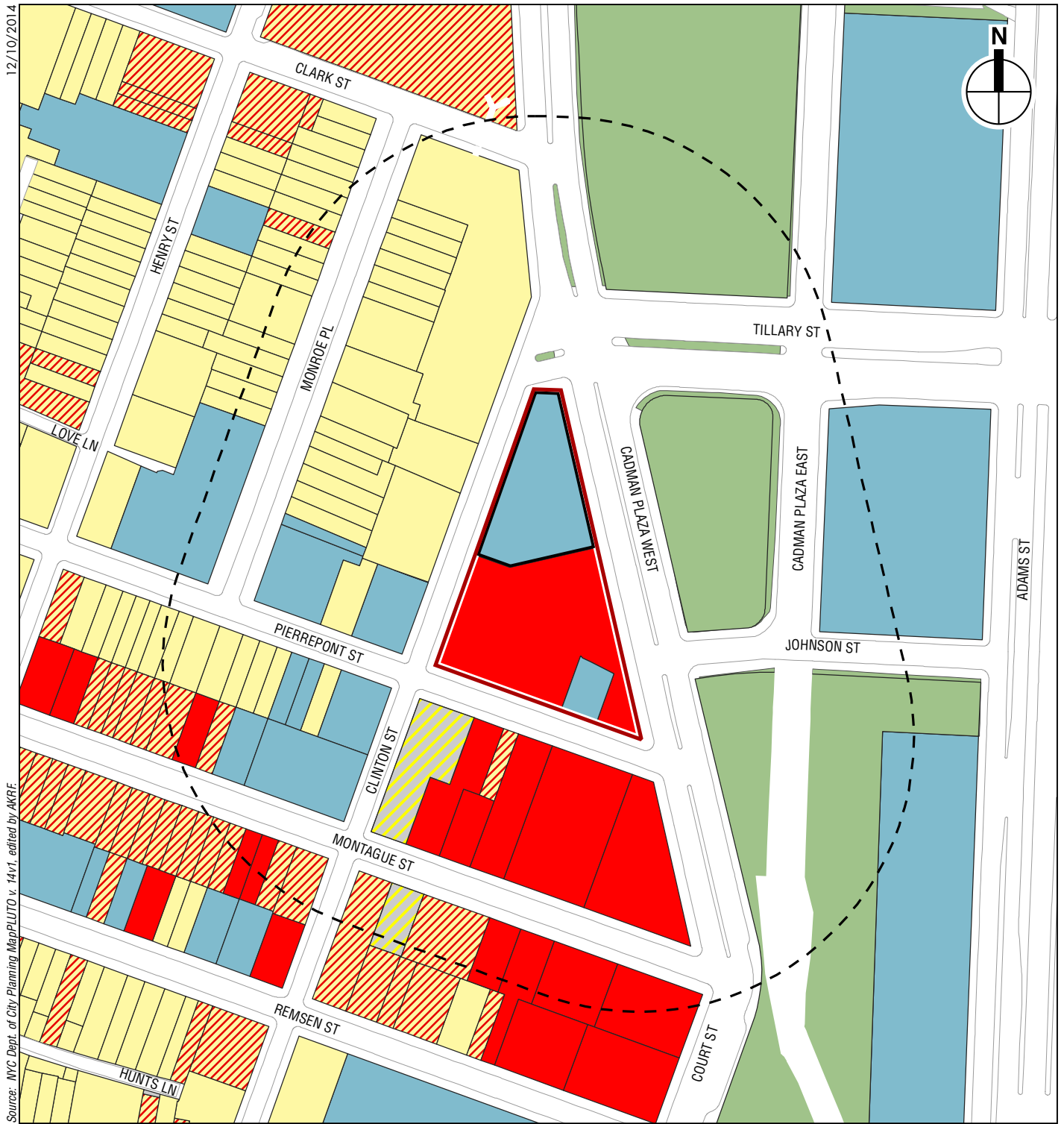


Photo View Direction and Reference Number

0 400 FEET

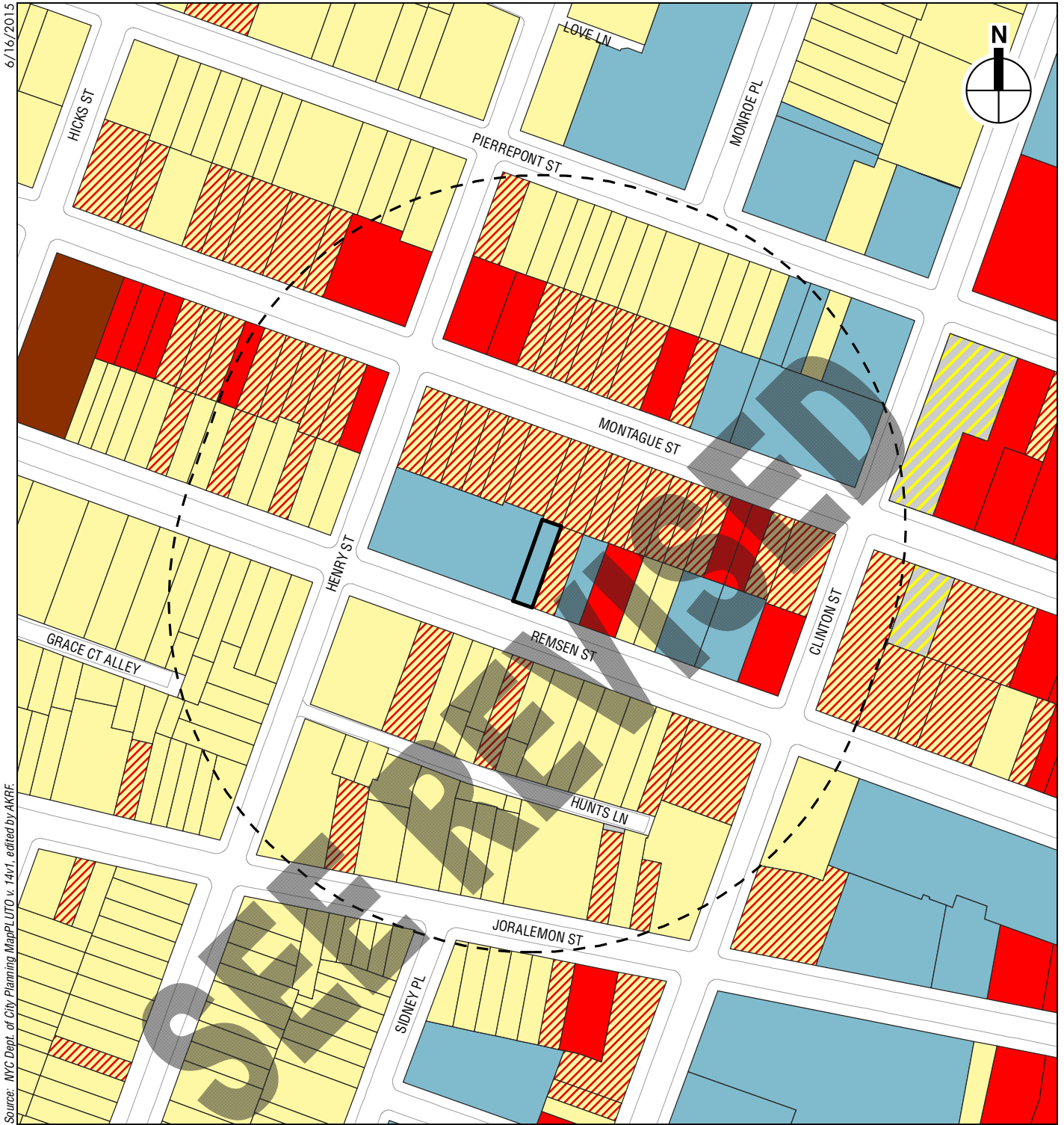
280 CADMAN PLAZA WEST

Project Location and Key to Photographs
Figure 1



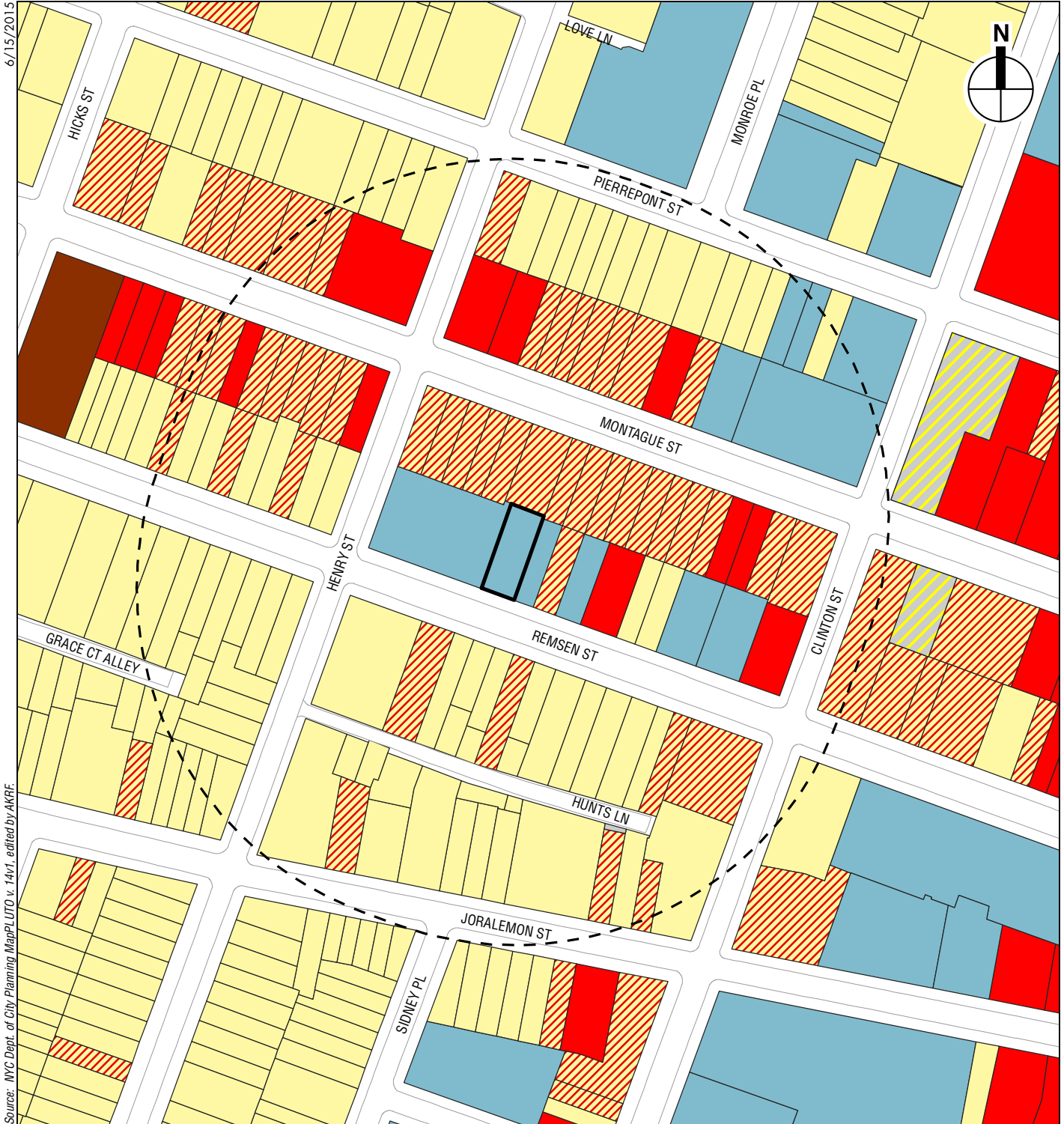
- | | |
|-----------------------------------|------------------------------------|
| Project Area | Public Facilities and Institutions |
| Development Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Open Space and Outdoor Recreation | Under Construction |

0 200 FEET



- | | |
|------------------------------------|-----------------------------------|
| Interim Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Hotels | Under Construction |
| Public Facilities and Institutions | |

0 200 FEET



6/15/2015

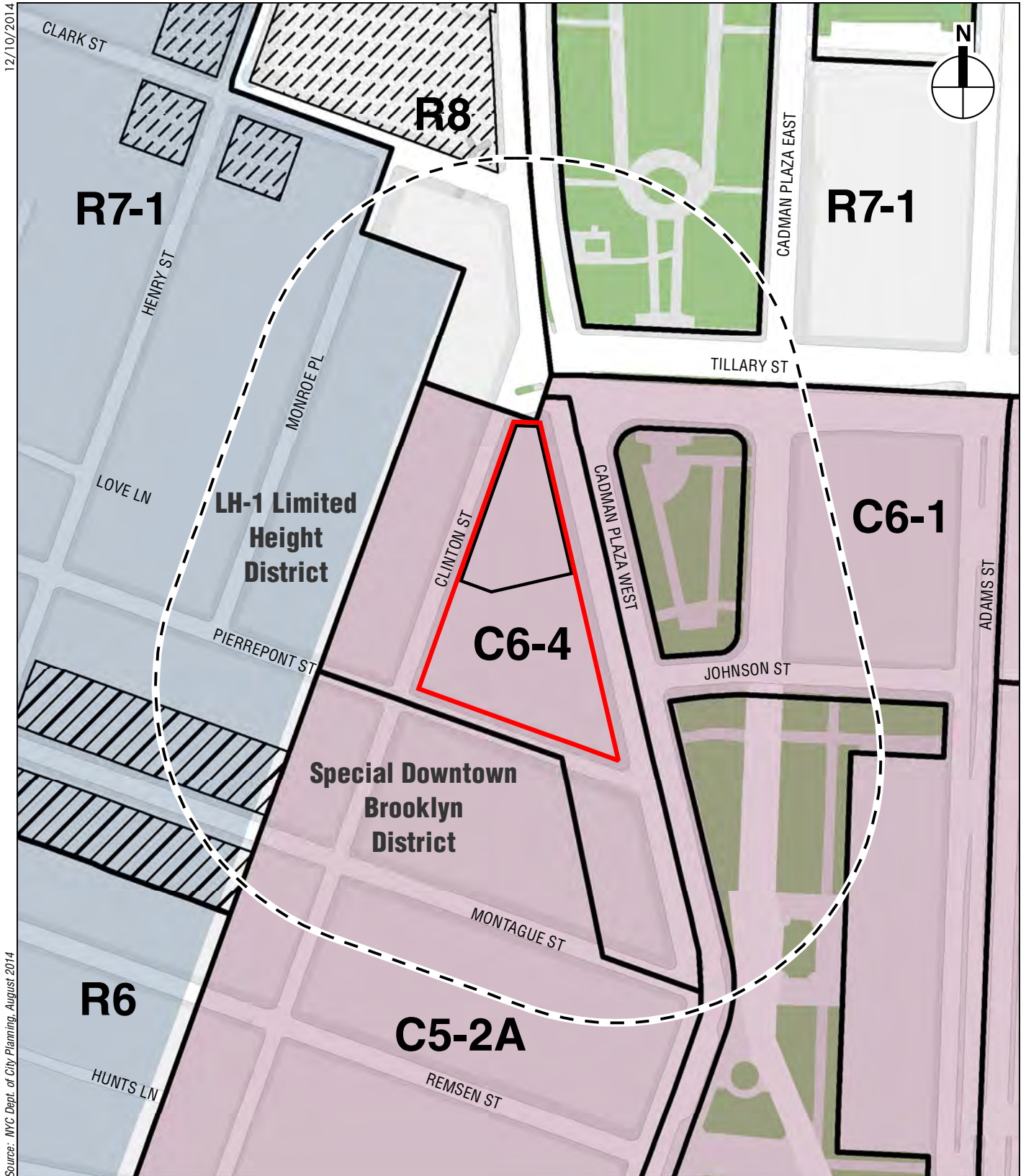
Source: NYC Dept. of City Planning MapPLUTO v. 14v1, edited by AKRF.

- Interim Site
- Study Area (400-foot boundary)
- Commercial and Office Buildings
- Hotels
- Public Facilities and Institutions
- Residential
- Residential with Commercial Below
- Vacant Land
- Under Construction

0 200 FEET

280 CADMAN PLAZA WEST

Branch Library
Interim Site Land Use
Figure 2b



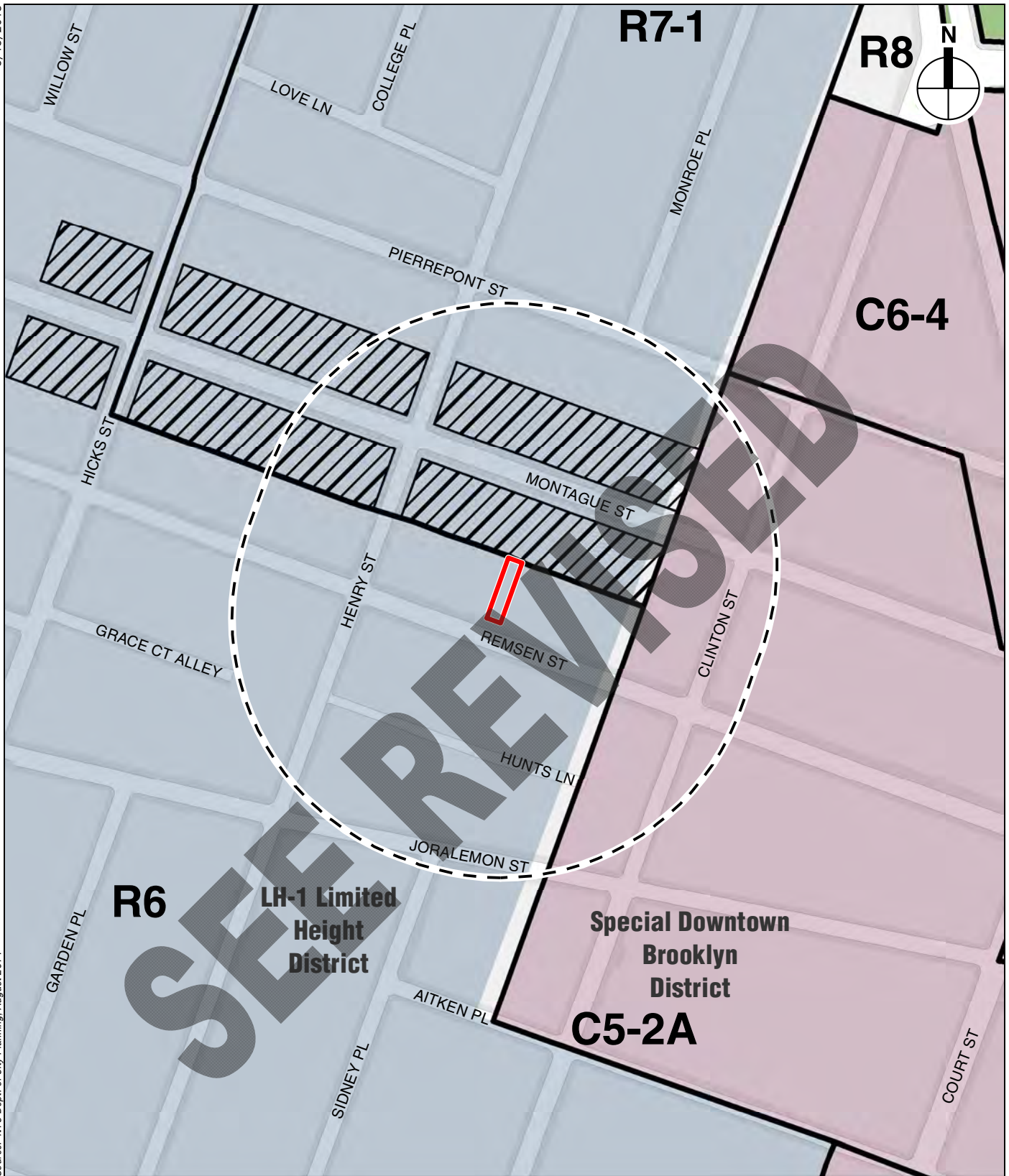
Source: NYC Dept. of City Planning, August 2014

- | | |
|--------------------------------|--------------------------|
| Project Area | Special Purpose District |
| Development Site | Limited Height District |
| Study Area (400-foot boundary) | C1-3 |
| Zoning Districts | C1-5 |

0 200 FEET

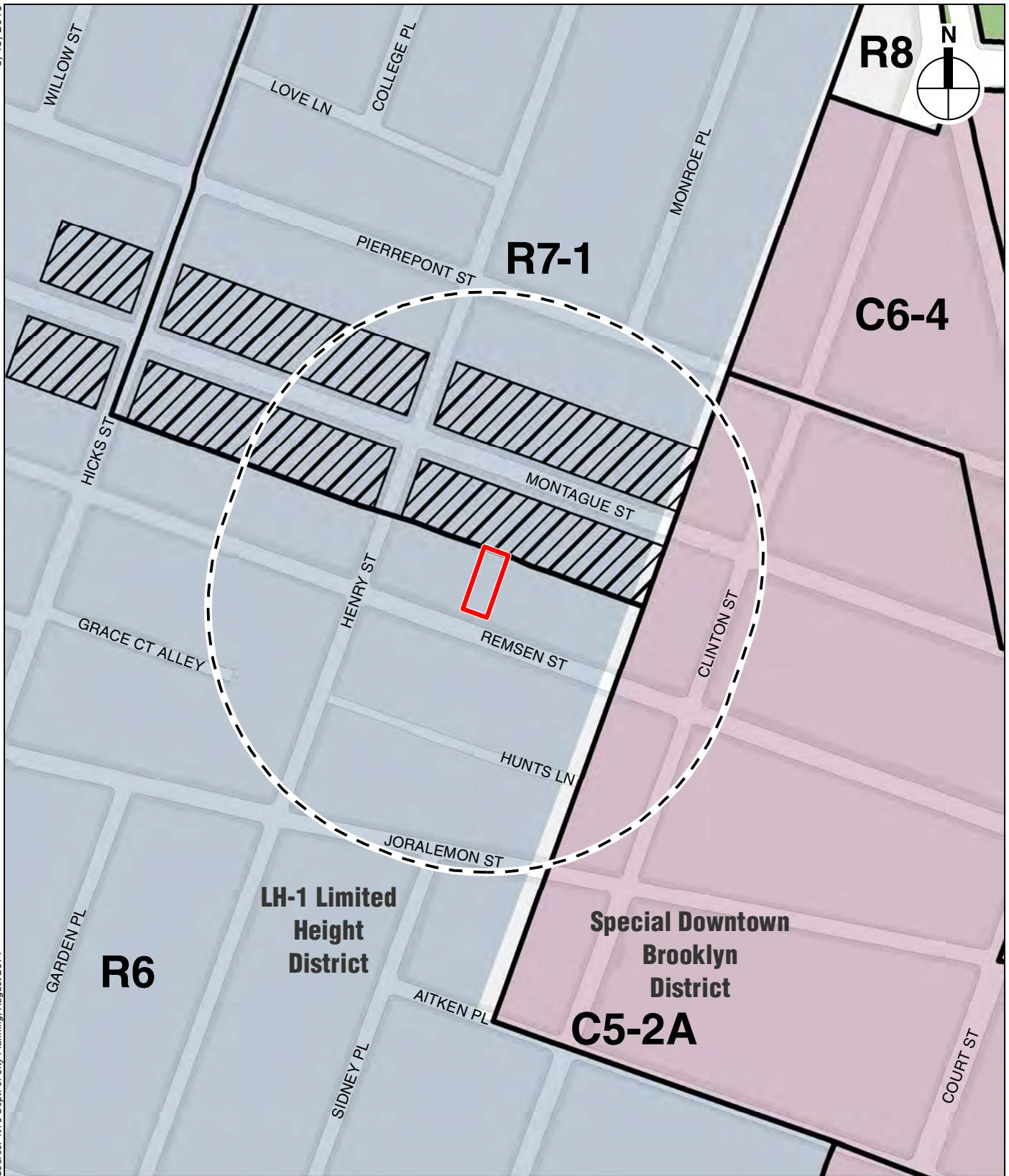
280 CADMAN PLAZA WEST

Zoning
Figure 3a



- | | |
|--------------------------------|--------------------------|
| Interim Site | Special Purpose District |
| Study Area (400-foot boundary) | Limited Height District |
| Zoning Districts | C1-3 |

0 200 FEET



- Interim Site
- Study Area (400-foot boundary)
- Zoning Districts
- Special Purpose District
- Limited Height District
- C1-3

0 200 FEET



NYC Digital Tax Map

Effective Date : 03-20-2013 11:53:38

End Date : Current

Brooklyn Block: 239



- Legend
- Streets

Miscellaneous Text

Possession Hooks

Boundary Lines

Lot Face Possession Hooks

Regular

Underwater

Tax Lot Polygon

Condo Number

Tax Block Polygon



- Project Area (Zoning Lot)
- Development Site

0 5 10 20 30 40 Feet

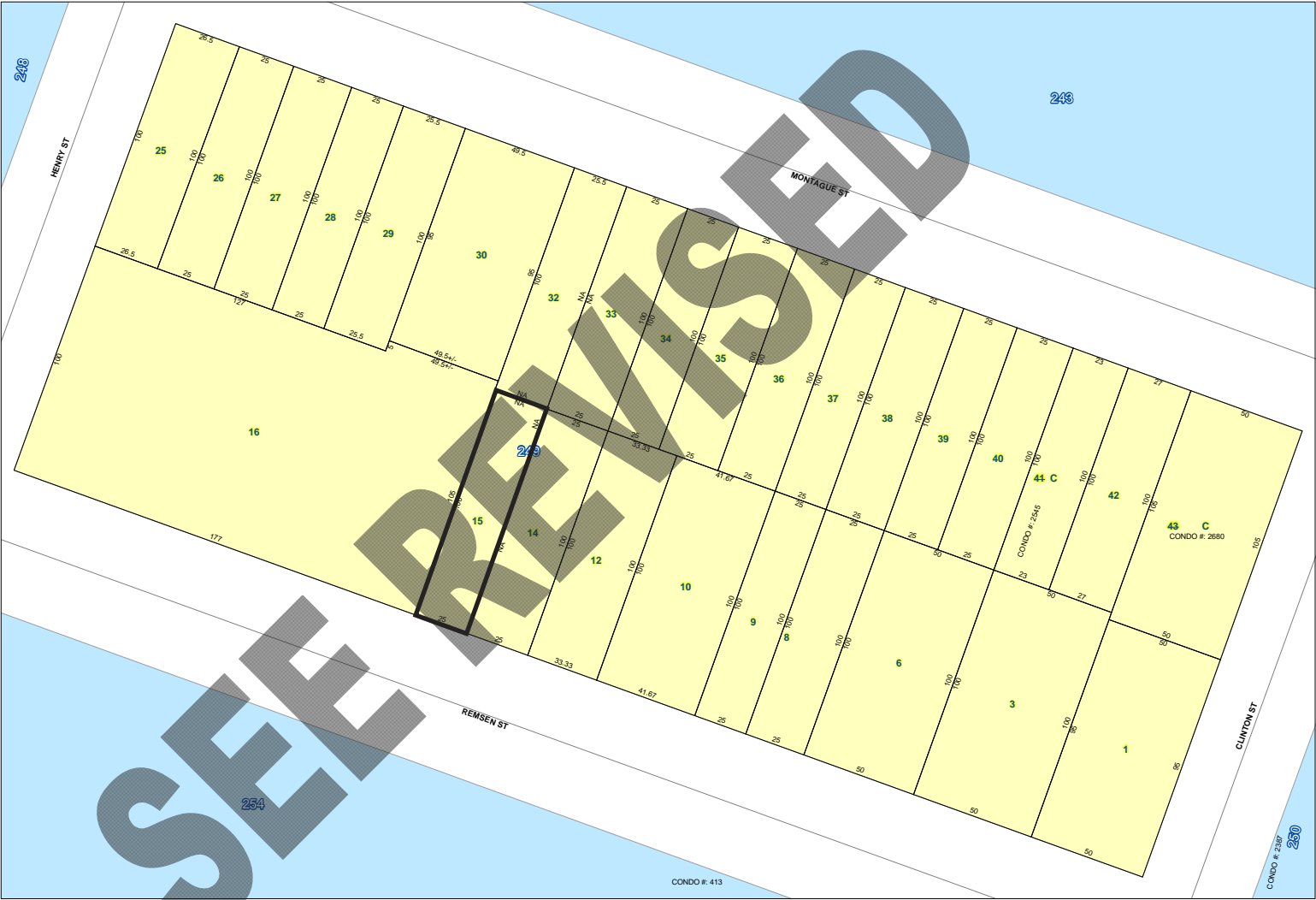


NYC Digital Tax Map

Effective Date : 12-17-2009 14:22:44
End Date : Current
Brooklyn Block: 249



- Legend
- Streets
 - Miscellaneous Text
 - Possession Hooks
 - Boundary Lines
 - Lot Face Possession Hooks
 - Regular
 - Underwater
 - Tax Lot Polygon
 - Condo Number
 - Tax Block Polygon



 Interim Site

0 4 8 16 24 32 Feet

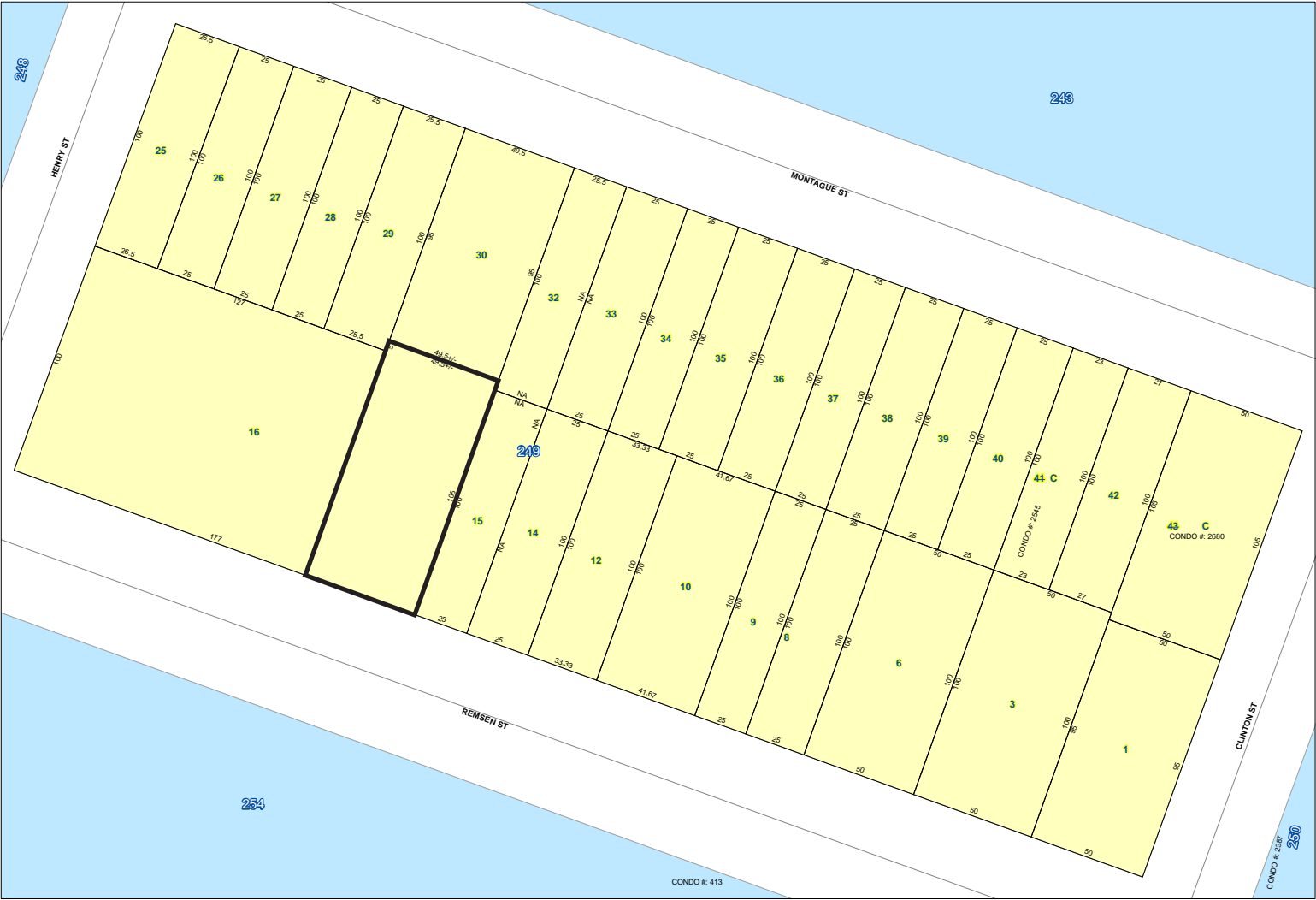


NYC Digital Tax Map

Effective Date : 12-17-2009 14:22:44
End Date : Current
Brooklyn Block: 249



- Legend
- Streets
 - Miscellaneous Text
 - Possession Hooks
 - Boundary Lines
 - Lot Face Possession Hooks
 - Regular
 - Underwater
 - Tax Lot Polygon
 - Condo Number
 - Tax Block Polygon



Interim Site

0 4 8 16 24 32 Feet



1



2



3



4



5



6



7



8





DESCRIPTION OF EXISTING AND PROPOSED CONDITIONS

The information requested in this table applies to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory control. The increment is the difference between the No-Action and the With-Action conditions.

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
LAND USE				
Residential	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
Describe type of residential structures			1 apartment building	
No. of dwelling units			308	+308
No. of low- to moderate-income units			0	0
Gross floor area (sq. ft.)			±308,082	+308,082
Commercial	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
Describe type (retail, office, other)			Retail	
Gross floor area (sq. ft.)			±650	+650
Manufacturing/Industrial	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify the following:				
Type of use				
Gross floor area (sq. ft.)				
Open storage area (sq. ft.)				
If any unenclosed activities, specify:				
Community Facility	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
Type	Public library	Public library	Public library, community facility	
Gross floor area (sq. ft.)	±59,146 library (±32,431 "usable")	±59,146 library (±32,431 "usable")	±21,500 library, and ±19,800 community facility	-37,646 library, -10,931 "usable" +19,800 community facility
Vacant Land	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," describe:				
Publicly Accessible Open Space	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify type (mapped City, State, or Federal parkland, wetland—mapped or otherwise known, other):				
Other Land Uses	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," describe:				
PARKING				
Garages	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces			±45	+45
Operating hours			24 hours	
Attended or non-attended			Unattended	
Lots	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If "yes," describe:				
POPULATION				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Residents	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify number:			619	+619
Briefly explain how the number of residents was calculated:	Estimates based on 2010 Census average household size of 2.01 for Brooklyn Community District 2.			
Businesses	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If "yes," specify the following:				
No. and type	Library	Library	Library, retail, residential	
No. and type of workers by business	38 (17 branch library, 21 Business and Career Library)	17 (branch library)	17 (branch library) 2 (retail), 12 (residential)	+0 / +2 /+12
No. and type of non-residents who are not workers	-	-	-	-
Briefly explain how the number of businesses was calculated:	Workers calculated using estimate of 333 sf per worker for retail space, 1 employee/25 units for residential, BPL estimates for library.			
Other (students, visitors, concert-goers, etc.)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If any, specify type and number:				
Briefly explain how the number was calculated:	No increase in student enrollment or school employment expected to be attributable to new community facility use.			
ZONING				
Zoning classification	C6-4	C6-4	C6-4	
Maximum amount of floor area that can be developed	26,620 (lot size) x 10.0 max. FAR = 266,200 sf / 12.0 FAR w/IHP bonus = 319,920 sf			
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Residential, commercial, park, institutional (government buildings, religious and educational facilities); R7-1, R8, C5-2A, C6-1, C6-4, C1-3, and C1-5 Overlay	Residential, commercial, park, institutional (government buildings, religious and educational facilities); R7-1, R8, C5-2A, C6-1, C6-4, C1-3, and C1-5 Overlay	Residential, commercial, park, institutional (government buildings, religious and educational facilities); R7-1, R8, C5-2A, C6-1, C6-4, C1-3, and C1-5 Overlay	
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.				

911-917 ATLANTIC AVENUE SITE

Project Location			
Brooklyn	COMMUNITY DISTRICT(S) CD 2	STREET ADDRESS 911-917 Atlantic Avenue	
Block 2018, Lots 62-64		ZIP CODE 11238	
DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Block bounded by St. James Place to the west, Lefferts Place to the north, Grand Avenue to the east, and Atlantic Avenue to the south			
EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R7A with C2-4 overlay. A small, rear portion of Lot 64 is located within an R6B zoning district			ZONING SECTIONAL MAP NO: 16C
Physical Setting (both developed and undeveloped areas)			
Total directly affected area (sq. ft.): 12,660		Waterbody area (sq. ft.) and type: 0	
Roads, building and other paved surfaces (sq. ft.): 12,660		Other, describe (sq. ft.): 0	
7. Physical Dimensions and Scale of Project (if the project affects multiple sites, provide the total development below facilitated by the action)			
SIZE OF PROJECT TO BE DEVELOPED (gross square feet): 65,817			
NUMBER OF BUILDINGS: 1		GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 54,441	
HEIGHT OF EACH BUILDING (ft): 80		NUMBER OF STORIES OF EACH BUILDING: 9	
Does the proposed project involve in-ground excavation or subsurface disturbance, including but not limited to foundation work, pilings, utility lines, or grading?			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
If 'Yes,' indicate the estimated area and volume dimensions of subsurface disturbance (if known):			
AREA OF TEMPORARY DISTURBANCE: 12,660 sq. ft. (width x length)		VOLUME OF DISTURBANCE: 126,600 cubic feet (width x length x depth)	
AREA OF PERMANENT DISTURBANCE: 12,660 sq. ft. (width x length)			

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If yes, specify the following				
Describe type of residential structures			1 apartment building	
No. of dwelling units	3	No change from existing conditions	76	+73
No. of low- to moderate-income units	0	No change from existing conditions	75	+75
Gross Floor Area (sq. ft.)	3,000	No change from existing conditions	65,817	+62,817
Commercial	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
Describe type (retail, office, other)	Retail and office	No change from existing conditions		
Gross floor area (sq. ft.)	2,000	No change from existing conditions		-2,000
Manufacturing/Industrial	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
Type of use	Wholesale electrical supply	No change from existing conditions		
Gross floor area (sq. ft.)	14,620	No change from existing conditions		-14,620
Open storage area (sq. ft.)				
If any unenclosed activities, specify				
Community Facility	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following				
Type				
Gross floor area (sq. ft.)				
Vacant Land	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe				
Publicly Accessible Open Space	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify type (mapped City, State, or Federal Parkland, wetland—mapped or otherwise known, other)				
Other Land Uses	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe				
Parking				
Garages	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Attended or non-attended				
Lots	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Population				
Residents	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If any, specify number	6	No change from existing conditions	153	+147
Briefly explain how the number of residents was calculated	Estimates based on 2010 Census average household size of 2.01 for Brooklyn Community District 2.			
Businesses	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If any, specify the following:				
No. and type	1 wholesale electrical supply, 1 industrial use, 1 office	No change from existing conditions		
No. and type of workers by business	±19	±19		-19
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated	Estimates based on the following standard industry employment ratios: 1 employee per 1,000 sf of industrial uses; 1 employee per 250 sf of commercial uses.			
Students (non-resident)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If any, specify number				
Briefly explain how the number of students was calculated				
Zoning				
Zoning classification	R6B/R7A	No change	No change	
Maximum amount of floor area that can be developed	54,004 sf (1,322 X 2.0 max. FAR = 2,645 sf/1,322 X 4.0 max. FAR = 5,290 sf/10,015 X 4.6 max FAR = 46,069 sf)	No change	No change	
Predominant land use and zoning classifications within land use study areas or a 400-foot radius of proposed project	Residential, commercial, industrial, institutional	No change	No change	

1041-1047 FULTON STREET SITE

Project Location			
Brooklyn	COMMUNITY DISTRICT(S)	CD 2	STREET ADDRESS 1041-1047 Fulton Street
Block 1992, Lots 5-9	ZIP CODE 11238		
DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Block bounded by Downing Street to the west, Putnam Avenue to the north, Irving Place to the east, and Fulton Street to the south			
EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R7A with C2-4 overlay			ZONING SECTIONAL MAP NO: 16C
Physical Setting (both developed and undeveloped areas)			
Total directly affected area (sq. ft.): 6,405		Waterbody area (sq. ft.) and type: 0	
Roads, building and other paved surfaces (sq. ft.): 6,405		Other, describe (sq. ft.): 0	
7. Physical Dimensions and Scale of Project (if the project affects multiple sites, provide the total development below facilitated by the action)			
SIZE OF PROJECT TO BE DEVELOPED (gross square feet): 34,937			
NUMBER OF BUILDINGS:	1	GROSS FLOOR AREA OF EACH BUILDING (sq. ft.):	34,937
HEIGHT OF EACH BUILDING (ft):	80	NUMBER OF STORIES OF EACH BUILDING:	8
Does the proposed project involve in-ground excavation or subsurface disturbance, including but not limited to foundation work, pilings, utility lines, or grading?			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
If 'Yes,' indicate the estimated area and volume dimensions of subsurface disturbance (if known):			
AREA OF TEMPORARY DISTURBANCE:	6,405	sq. ft. (width x length)	VOLUME OF DISTURBANCE: 64,050 cubic feet (width x length x depth)
AREA OF PERMANENT DISTURBANCE:	6,405	sq. ft. (width x length)	

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If yes, specify the following				
Describe type of residential structures			1 apartment building	
No. of dwelling units			39	+39
No. of low- to moderate-income units			12	+12
Gross Floor Area (sq. ft.)			33,812	+33,812
Commercial	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If yes, specify the following:				
Describe type (retail, office, other)			Ground-floor retail	
Gross floor area (sq. ft.)			1,125	+1,125
Manufacturing/Industrial	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
Type of use				
Gross floor area (sq. ft.)				
Open storage area (sq. ft.)				
If any unenclosed activities, specify				
Community Facility	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following				
Type				
Gross floor area (sq. ft.)				
Vacant Land	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe	Entire site is vacant.	No change from existing conditions		
Publicly Accessible Open Space	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify type (mapped City, State, or Federal Parkland, wetland—mapped or otherwise known, other)				
Other Land Uses	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe				
Parking				
Garages	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Attended or non-attended				
Lots	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If yes, describe				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Population				
Residents	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
If any, specify number			78	+78
Briefly explain how the number of residents was calculated	Estimates based on 2010 Census average household size of 2.01 for Brooklyn Community District 2.			
Businesses	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If any, specify the following:				
No. and type			1 retail use	1 retail use
No. and type of workers by business			3	+3
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated	Estimate based on the following standard industry employment ratio: 1 employee per 333 sf of retail use			
Students (non-resident)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
If any, specify number				
Briefly explain how the number of students was calculated				
Zoning				
Zoning classification	R7A	No change	No change	
Maximum amount of floor area that can be developed	6,405 (lot size) X 4.6 max FAR = 29,463 sf	No change	No change	
Predominant land use and zoning classifications within land use study areas or a 400-foot radius of proposed project	Residential, commercial, institutional, park	No change	No change	

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Is there the potential to affect an applicable public policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) If "yes," to (a), (b), and/or (c), complete a preliminary assessment and attach.		
(e) Is the project a large, publicly sponsored project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
▪ If "yes," answer both questions 2(b)(ii) and 2(b)(iv) below.		
o Directly displace 500 or more residents?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ If "yes," answer questions 2(b)(i), 2(b)(ii), and 2(b)(iv) below.		
o Directly displace more than 100 employees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ If "yes," answer questions under 2(b)(iii) and 2(b)(iv) below.		
o Affect conditions in a specific industry?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▪ 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?	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>
ii. Indirect Residential Displacement		
o Would expected average incomes of the new population exceed the average incomes of study area populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes:"		
▪ Would the population of the primary study area increase by more than 10 percent?	<input type="checkbox"/>	<input type="checkbox"/>
▪ 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?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes" to either of the preceding questions, would more than 5 percent of all housing units be renter-occupied and unprotected?	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>
o Is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve,	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the project increase the collective utilization rate by 5 percent or more from the No-Action scenario?	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project increase the study area population by 5 percent or more from the No-Action levels?	<input type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the additional population impair the delivery of library services in the study area?	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the project increase this collective utilization rate by 5 percent or more from the No-Action scenario?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Health Care Facilities		
o Would the project result in the introduction of a sizeable new neighborhood?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project affect the operation of health care facilities in the area?	<input type="checkbox"/>	<input type="checkbox"/>
v. Fire and Police Protection		
o Would the project result in the introduction of a sizeable new neighborhood?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the project affect the operation of fire or police protection in the area?	<input type="checkbox"/>	<input type="checkbox"/>
4. OPEN SPACE: CEQR Technical Manual Chapter 7		
(a) Would the project change or eliminate existing open space?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Is the project located within an under-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes," would the project generate more than 50 additional residents or 125 additional employees?	<input type="checkbox"/>	<input type="checkbox"/>
(d) Is the project located within a well-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) If "yes," would the project generate more than 350 additional residents or 750 additional employees?	<input type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	YES	NO
percent?		
<ul style="list-style-type: none"> o If "yes," are there qualitative considerations, such as the quality of open space, that need to be considered? Please specify: 	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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. See Attachment F		
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)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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. See Attachment G		
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Has a Phase I Environmental Site Assessment been performed for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> o If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: 1) Suspect drywell identified on-site. 2) The site was previously occupied by other structures, potentially leaving historic fill of unknown origin and suspect buried structures. 3) Historic maps identified an on-site laundry facility in 1904 that may have used petroleum-based solvents. 4) An on-site #2 fuel oil underground storage tank was closed in place, according to regulatory agency databases. 5) In 2005, there was a spill of approximately 11,000 gallons of #2 fuel oil on the south adjoining property; monitoring wells remain on the sidewalk surrounding the property, and a request for information submitted to NYSDEC and 	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	YES	NO
NYSDOH has not been fulfilled, as of January 2014.		
(i) Based on the Phase I Assessment, is a Phase II Investigation needed? See Attachment H	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) If "yes" to any of the above, conduct the appropriate preliminary analyses and attach supporting documentation. See Page 9a		
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): 14,025		
o Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	<input type="checkbox"/>	<input type="checkbox"/>
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): 49,528,000,000		
(b) Would the proposed project affect the transmission or generation of energy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. TRANSPORTATION: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? <i>**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.</i>	<input type="checkbox"/>	<input type="checkbox"/>
o Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Would the proposed project result in more than 200 pedestrian trips per project peak hour?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. AIR QUALITY: CEQR Technical Manual Chapter 17		
(a) <i>Mobile Sources:</i> Would the proposed project result in the conditions outlined in Section 210 in Chapter 17 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) <i>Stationary Sources:</i> Would the proposed project result in the conditions outlined in Section 220 in Chapter 17 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Does the proposed project involve multiple buildings on the project site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. See Attachment J		

	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project fundamentally change the City's solid waste management system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Would the proposed project result in the development of 350,000 square feet or more?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>
16. NOISE: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. See Attachment K		
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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. See Page 9a		
19. CONSTRUCTION: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
o Construction activities lasting longer than two years?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o The operation of several pieces of diesel equipment in a single location at peak construction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Closure of a community facility or disruption in its services?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Activities within 400 feet of a historic or cultural resource?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Disturbance of a site containing or adjacent to a site containing natural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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. See Attachment L		
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		

Additional Technical Information for EAS Part II

A. URBAN DESIGN AND VISUAL RESOURCES

According to the 2014 *CEQR Technical Manual*, an analysis of urban design and visual resources is warranted when a project would result in a physical alteration, observable to the pedestrian at street level, beyond that allowed by existing zoning. The proposed mixed-use building on the development site would comply with the existing zoning regulations related to building height, bulk, and setback requirements. Therefore, an urban design and visual resources analysis is not warranted and is not included in this EAS.

B. NATURAL RESOURCES

According to the 2014 *CEQR Technical Manual*, a natural resource is defined as a plant or animal species and any area capable of providing habitat for plant and animal species or capable of functioning to support environmental systems and maintain the City's environmental balance. Such resources include surface and groundwater, wetlands, dunes and beaches, grasslands, woodlands, landscaped areas, gardens, and built structures used by wildlife. An assessment of natural resources is appropriate if a natural resource exists on or near the site of the proposed action, or if an action involves disturbance of that resource. There are no significant natural resources on the development site, and it is not anticipated that the proposed actions would result in significant adverse impacts on natural resources from the proposed mixed-use building on the development site. Therefore, no further assessment of the proposed mixed-use building's effects on natural resources is warranted.

C. WATER AND SEWER INFRASTRUCTURE

WATER SUPPLY

According to the 2014 *CEQR Technical Manual*, an analysis of an action's impact on the water supply system should be conducted only for actions that would have exceptionally large demand for water, such as power plants, very large cooling systems, or large developments (e.g., those that use more than 1 million gallons per day [gpd]). In addition, actions located in areas of low water pressure at the extremities of the water distribution system should be analyzed. The proposed actions, which would facilitate the construction of the proposed building on the development site, would not result in development that meets any of these criteria; based on water usage rates in Table 13-2 of the *CEQR Technical Manual*, the proposed mixed-use building on the development site would use an estimated 125,691 gpd (see **Table 1**, below), and the development site is not located at the extremities of the water distribution system. Therefore, an analysis of water supply is not warranted.

WASTEWATER AND STORMWATER CONVEYANCE AND TREATMENT

According to the guidelines of the 2014 *CEQR Technical Manual*, a preliminary analysis of wastewater and stormwater conveyance and treatment is warranted if a project: is located in a combined sewer area and would have an incremental increase above the No Action condition of 400 residential units or 150,000 square feet of commercial, public facility and institution and/or community facility space in Brooklyn; is located in a separately sewer area and would exceed certain incremental development thresholds; is located in an area that is partially sewer or currently unsewered; involves development on a site five acres or larger where the amount of impervious surface would increase; would involve development on a site one acre or larger where the amount of impervious surface would increase and other criteria are met; or would involve construction of a new stormwater outfall that requires federal and/or state permits.

The proposed project would result in the development of 308 market-rate units on the development site which is located in a combined sewer area served by the Red Hook Wastewater Treatment Plant (WWTP). Although the number of residential units in the proposed mixed-use building on the development site is below the threshold of 400 units that warrants a preliminary analysis of wastewater and stormwater conveyance and treatment, for the purposes of a conservative analysis this assessment has been performed to determine the full impact of the proposed building, which also includes retail and community facility uses.

The proposed building on the development site would not result in an increase of impervious surface on a site one acre or larger; therefore the proposed building is not expected to result in a substantial increase in stormwater runoff. Existing wastewater and stormwater conveyance infrastructure is expected to be sufficient to carry the incremental increase in wastewater flow, described below, and no further analysis of conveyance infrastructure is warranted.

The Red Hook WWTP is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC), which also establishes a maximum permitted capacity: for the Red Hook WWTP, the maximum permitted capacity is 60 million gallons per day (mgd). The average monthly flow to the Red Hook WWTP over the past 12 months is 28 mgd,¹ well below the maximum permitted capacity. As shown in **Table 1**, the proposed building on the development site is expected to result in an incremental increase in sanitary sewage flows to the WWTP of 60,271 gpd. This amount would represent approximately 0.21 percent of the Red Hook WWTP's average daily flow, and would not result in an exceedance of the WWTP's permitted capacity of 60 mgd. Therefore, the proposed project is not anticipated to result in a significant adverse impact on the City's sanitary sewage conveyance and treatment system.

Table 1
Water Consumption and Sewage Generation

Use ¹	Size (gsf/residents)	Rate	Consumption (gpd)
No Action Condition			
Commercial/Office—Domestic	59,146 gsf	0.10 gpd/sf	5,915
Commercial/Office—Air Conditioning	59,146 gsf	0.17 gpd/sf	10,055
Total Water Demand			15,969
Total Sewer Demand²			5,915
With Action Condition			
Residential—Domestic	619 residents ³	100 gpd/person	61,900
Residential—Air Conditioning	308,082 gsf	0.17 gpd/sf	52,374
Retail Stores—Domestic	650 gsf	0.24 gpd/sf	156
Retail Stores—Air Conditioning	650 gsf	0.17 gpd/sf	111
Commercial/Office—Domestic	41,300 gsf	0.10 gpd/sf	4,130
Commercial/Office—Air Conditioning	41,300 gsf	0.17 gpd/sf	7,021
Total Water Demand			125,691
Total Sewer Demand²			66,186
Incremental Water Demand			109,722
Incremental Sewer Demand			60,271
Notes: 1. For purposes of analysis, community facility space (library and/or school recreation/community center) are estimated to consume water and generate sewage at the rates for commercial/office space. 2. Does not include water used by air conditioning, which is typically not discharged to the sewer system. 3. 308 total units multiplied by Brooklyn Community District 2 average household size of 2.01 (2010 Census).			
Sources: Rates from Table 13-2, 2014 <i>CEQR Technical Manual</i>			

D. SOLID WASTE

According to the 2014 *CEQR Technical Manual*, a solid waste assessment is appropriate if a project generates 50 tons per week or more. As shown in **Table 2**, based on Citywide solid waste generation rates identified in Table 14-1 of the *CEQR*

¹ 12-month period through January 2015.

Technical Manual, the proposed project would generate an estimated 14,025 pounds (7.01 tons) of solid waste per week. Therefore, an analysis of solid waste is not warranted.

Table 2
Development Site Solid Waste Generation

Use	Floor Area	Employees/Units	Solid Waste Generation Rate (per week) ¹	Solid Waste Generation (pounds per week)
Residential	308,082 gsf	308 units	41 pounds per unit	12,628
Retail	650 gsf	2 ²	79 pounds per employee	158
Community Facility ³	41,300 gsf	N/A	0.03 pounds per square foot	1,239
Total				14,025
Notes: 1. See Table 14-1 of the <i>CEQR Technical Manual</i> 2. Based on estimate of one employee per 333 gsf of retail space. 3. For purposes of analysis, community facility space (library and/or school recreation/community center) is assumed to generate solid waste at the government office rate.				

E. ENERGY

As recommended by the 2014 *CEQR Technical Manual*, this section projects the amount of energy consumption required by the proposed project at the development site. The energy consumption of the proposed mixed-use building at the development site would be an estimated 49,528 million BTUs per year (see **Table 3**). This increase in energy consumption is a negligible change that would not overburden the electrical generation transmission system. Therefore, the proposed mixed-use building at the development site would not have any potential significant adverse impacts on energy.

Table 3
Development Site Energy Consumption

Use	Floor Area	Energy Consumption (Million BTU per year) ¹
Residential	308,082 gsf	39,034
Retail	650 gsf	141
Community Facility	41,300 gsf	10,354
Total		49,528
Note: 1. Energy consumption based on rates presented in Table 15-1 of the <i>CEQR Technical Manual</i> : 126.7 Thousand BTUs (MBtu) per square foot of residential space, 216.3 MBtu per square foot of commercial space, and 250.7 MBtu per square foot of institutional (community facility) space.		

F. GREENHOUSE GAS EMISSIONS

According to the 2014 *CEQR Technical Manual*, a greenhouse gas (GHG) consistency assessment is appropriate for projects in New York City being reviewed in an Environmental Impact Statement (EIS) that would result in development of 350,000 sf or greater. This EAS finds that the proposed actions would not result in significant adverse impacts requiring the preparation of an EIS; therefore, an assessment of the proposed project's consistency with the City's GHG emissions goals is not required. However, because the proposed project would introduce uses slightly in excess of the 350,000-sf threshold, the following summarizes measures that would be implemented to increase energy efficiency, which in turn would reduce GHG emissions.

Based on information provided by the developer, the proposed mixed-use building is expected to: include highly efficient exterior walls that outperform the City's energy code; incorporate insulation exceeding building code requirements; apply

window glazing that would optimize daylighting, heat loss, and solar heat gain; install high-efficiency heating, ventilation, and air conditioning systems and generators; use high-albedo roofing materials to reduce the building's cooling energy demand; incorporate motion-sensor lighting control; maximize interior daylighting; use efficient, directed exterior lighting; use efficient interior lighting and elevators (exceeding requirements) and/or Energy Star appliances; provide for the storage and collection of recyclables; and design water-efficient landscaping.

With respect to construction practices, the proposed project would replace traditional concrete with less carbon-intensive material, such as slag or fly ash, and would require cement meeting ASTM C1157¹ or require cement produced using natural gas or renewable energy. The proposed project also would aim to divert 50 percent of construction waste from landfill through reuse and recycling of construction materials, use building materials with recycled content, and use building materials that are extracted and/or manufactured within the region. In addition, the developer would provide sustainable construction and design guidelines for build-out by tenants.

The proposed project would include mainly residential and community facility uses, as well as retail and accessory parking. None of these proposed uses are considered to be energy intensive (for example, no manufacturing, hospital, or data center uses are proposed). Furthermore, the proposed mixed-use building is located in an area with many transportation options, which would reduce emissions associated with transportation because of the available alternatives to driving. The development site is in the vicinity of multiple subway stations, including the Court Street Station (R train), the Clark Street Station (No. 2 and 3 trains), the High Street Station (A and C trains), the Borough Hall Station (No. 2, 3, 4, and 5 trains), and the Jay Street/MetroTech Station (A, C, F, and R trains). The proposed project also would designate on-site parking for alternative vehicles and provide on-site charging for electric vehicles. The proposed project site is connected to the Brooklyn Bridge Bikeway, Brooklyn Bridge Park Greenway, as well as well-connected bike lanes on the street network. By including enclosed bike storage, the proposed project would support sustainable transportation.

With the above-described sustainable features in place, the proposed project would be consistent with the City's GHG goals.

G. PUBLIC HEALTH

According to the guidelines of the 2014 *CEQR Technical Manual*, a public health assessment may be warranted if an unmitigated significant adverse impact is identified in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise. Based on the analysis in this EAS, no significant adverse impacts were identified, and therefore, an assessment of public health is not warranted.

H. NEIGHBORHOOD CHARACTER

An assessment of neighborhood character is generally warranted when a proposed project has the potential to result in significant adverse impacts in one of the elements that define a neighborhood's character, or when a project may have moderate effects on several of the elements. Neighborhood character is determined by a number of factors, such as land use, urban design, visual resources, historic resources, socioeconomic conditions, traffic, and noise. This EAS finds that the proposed actions would not substantively affect one or more of these technical areas. Therefore, an assessment of neighborhood character is not warranted.

¹ Organized in 1898, ASTM International is one of the largest voluntary standards developing organizations in the world. ASTM is a not-for-profit organization that provides a forum for the development and publication of voluntary consensus standards for materials, products, systems, and services. ASTM C1157 is a standard performance specification for hydraulic cement.

that seeks the permits, approvals, funding, or other governmental action(s) described in this EAS.

APPLICANT/REPRESENTATIVE NAME

John Neill (AKRF, Inc.)

SIGNATURE



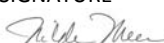
DATE

6/11/2015

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.		Potentially Significant Adverse Impact	
IMPACT CATEGORY	YES	NO	
Land Use, Zoning, and Public Policy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Socioeconomic Conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Community Facilities and Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Open Space	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Shadows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Historic and Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Urban Design/Visual Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Natural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hazardous Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Water and Sewer Infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Solid Waste and Sanitation Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Transportation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Greenhouse Gas Emissions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Noise	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Public Health	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Neighborhood Character	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Check determination to be issued by the lead agency:			
<input type="checkbox"/> 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 <i>Positive Declaration</i> and prepares a draft Scope of Work for the Environmental Impact Statement (EIS).			
<input type="checkbox"/> Conditional Negative Declaration: A <i>Conditional Negative Declaration</i> (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.			
<input checked="" type="checkbox"/> 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 <i>Negative Declaration</i> . The <i>Negative Declaration</i> 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 Assistant to the Mayor		LEAD AGENCY Office of the Deputy Mayor for Housing and Economic Development	
NAME Nilda Mesa		DATE June 12, 2015	
SIGNATURE 			

NEGATIVE DECLARATION (Use of this form is optional)**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, _____ 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 that finds the proposed project:

No other significant effects upon the environment that would require the preparation of a Draft Environmental Impact Statement are foreseeable. This Negative Declaration has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law (SEQRA).

TITLE	LEAD AGENCY
NAME	DATE
SIGNATURE	

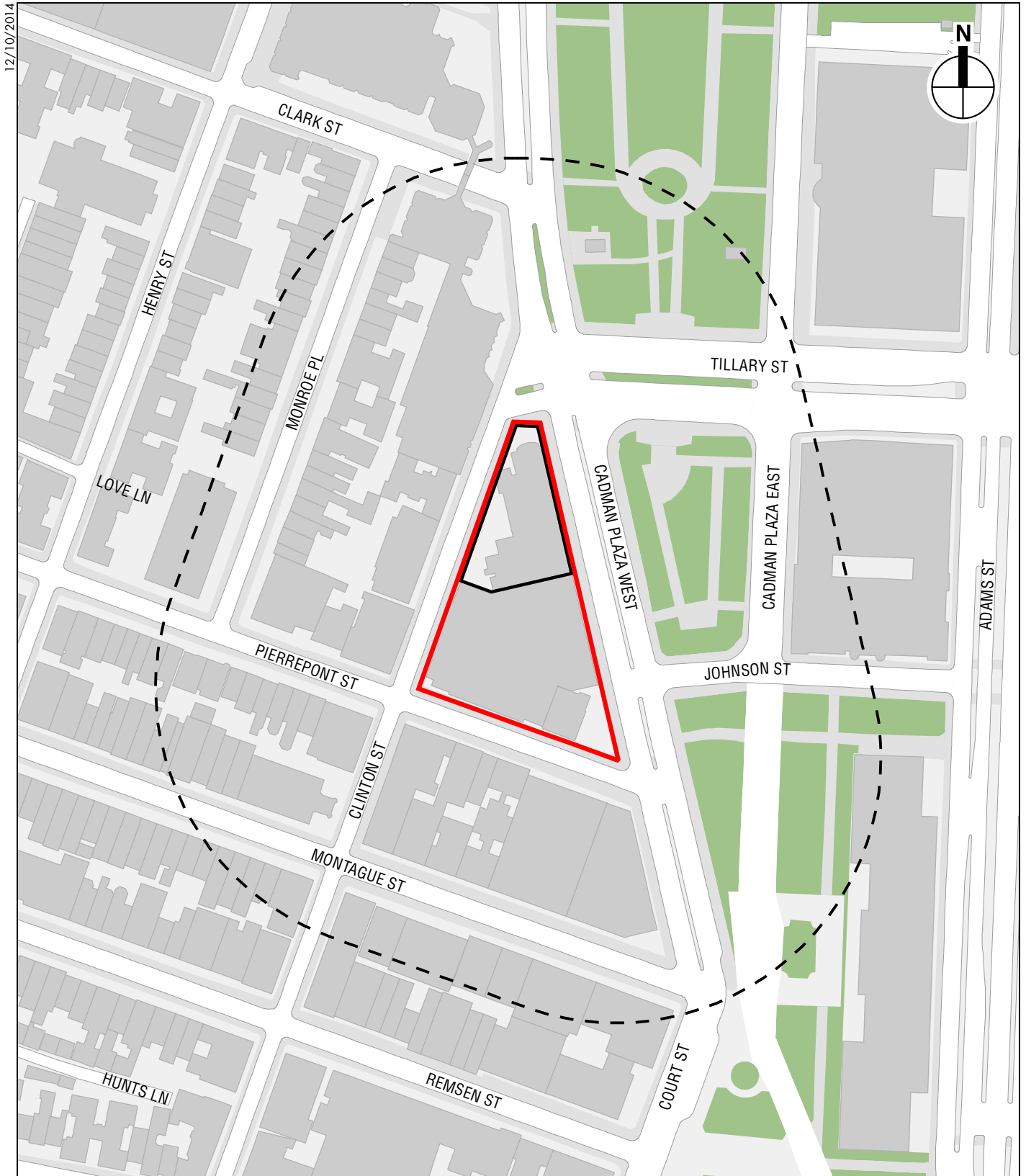
A. INTRODUCTION

The applicants—New York City Department of Citywide Administrative Services (DCAS), Brooklyn Public Library (BPL), and Cadman Associates LLC (collectively, “the Co-Applicants”)—are seeking the disposition of City-owned property to Cadman Associates LLC (“the developer”), in order to construct a mixed-use development (“the proposed project”) at 280 Cadman Plaza West (Block 239, Lot 16, referred to as the “development site”) in the Brooklyn Heights neighborhood of Brooklyn (see **Figure A-1**). In order to facilitate the proposed mixed-use building the developer is acquiring development rights from St. Ann’s School, the owner of an adjacent property (Block 239, Lot 3). The Co-Applicants also are seeking the acquisition by the City of New York (for one dollar) of a condominium unit within the new mixed-use development for use as the Brooklyn Heights branch of the BPL. The proposed project also would require a ~~minor~~ modification of a previously-approved height and setback special permit for One Pierrepont Plaza (Block 239, Lot 1), which is located on the same zoning lot as the development site. In addition, the developer proposes to construct 115 affordable dwelling units (DUs) at two off-site locations within the Clinton Hill neighborhood of Brooklyn and within the same community district as the proposed mixed-use development (Community District (CD) 2).

The development site at 280 Cadman Plaza West is approximately 26,620 square feet (sf) in size. It is currently owned by the City of New York and operated by BPL under a long-term agreement and in accordance with the establishment of the BPL system. The existing 2-story, approximately 59,146-gross-square-foot (gsf) building on the development site currently is in use as the Brooklyn Heights branch of the BPL. The branch library includes an estimated 32,431 gsf of usable space, including 17,471 gsf of branch library space and 14,960 gsf of Business and Career Library space. The remaining 26,715 gsf of space in the existing building are inaccessible to the public and are comprised of mechanical and utility spaces; BPL does not define this space as branch library use.

According to BPL, the building has an inefficient floor plan, with approximately 46 percent of the space unavailable for public use. The branch library building is also aging and has more than \$9 million in unmet capital needs, according to the BPL. The branch library was built in 1962 and requires numerous repairs, including the replacement of its non-functioning HVAC system, boiler, roof and roof bulkhead. It also requires new elevators and a machine room, lighting upgrades, a building automation system, safety and security enhancements, and site drainage and waterproofing. The Business and Career Library is planned for relocation to the BPL central branch (located at 10 Grand Army Plaza in the Prospect Heights neighborhood) in the future without or with the proposed project.

The development site (Block 239, Lot 16) is on a zoning lot that includes Lot 1, which is owned by the City of New York and leased to Forest City Ratner Companies under a 99-year ground lease. Lot 1 is approximately 46,050 sf in size and is occupied by One Pierrepont Plaza, a 19-story, approximately 726,000-gsf commercial office building. Morgan Stanley and the U.S.



- Project Area
- Development Site
- Study Area (400-foot boundary)

0 400 FEET

Attorney for the Eastern District of New York are among the building's tenants. The *Pierrepoint Street Site Final Environmental Impact Statement* (1985), which analyzed the potential effects of the One Pierrepoint Plaza project, included mitigation measures for the project's identified impacts on neighborhood character, historic and archaeological resources, traffic and transportation, noise, and microwave radiation. As part of the approvals for its development, One Pierrepoint Plaza was granted a height and setback waiver (C 960033A) to allow 26 percent of the volume of the building to penetrate the sky exposure plane, and C 860392 ZSK modified the special permit granted under C 960033A to increase the height of the building from 375 feet to 397 feet (an increase in floors from 19 to 21) and reduce building setback encroachments by establishing 15-foot setbacks at the base of the 7th floor. The proposed actions include ~~minor~~ modification of this special permit in order to make the special permit applicable to a zoning lot that is proposed to be formed by Lots 1, 3, and 16 on Block 239.

As part of the proposed actions the existing zoning lot would be merged with Lot 3 on the same block (collectively, the "project area"). Lot 3, which contains a 6-story, approximately 28,000-gsf building, is owned and occupied by St. Ann's School. Lot 3 is approximately 3,956 sf in size. In the future with the proposed project, Lot 3 would be merged with the existing zoning lot on Block 239, which currently contains Lots 1 and 16. Subsequent to this zoning lot merger, approximately 16,667 sf of unused floor area from St. Ann's School (Lot 3) would be transferred to the developer (Lot 16). The developer also would be generating a 2.0 Inclusionary Housing FAR bonus for the entire combined zoning lot, whereby Lots 3 and 1 would generate an additional approximately 100,012 sf of floor area for use on Lot 16.

The proposed building on the development site would contain: a replacement branch library approximately 21,500 gsf in size; approximately 650 gsf of retail use; approximately 308,000 gsf of residential use (139 market-rate units as designed¹); and an approximately 38,082-gsf, 45-space below-grade accessory parking facility (see **Figures A-2 and A-3**). In addition, approximately 19,800 gsf of space in the building is proposed for community facility use for a yet-to-be-identified tenant. In the event that a tenant is not secured before construction commences, this 19,800 gsf of building space intended for a community facility use would not be constructed. For conservative analysis purposes, this EAS considers a building program and design that includes the community facility use.

The proposed building would be 36 stories and approximately 441 feet tall (including a mechanical bulkhead of approximately 25 feet). The proposed building is expected to be complete and operational by 2019.

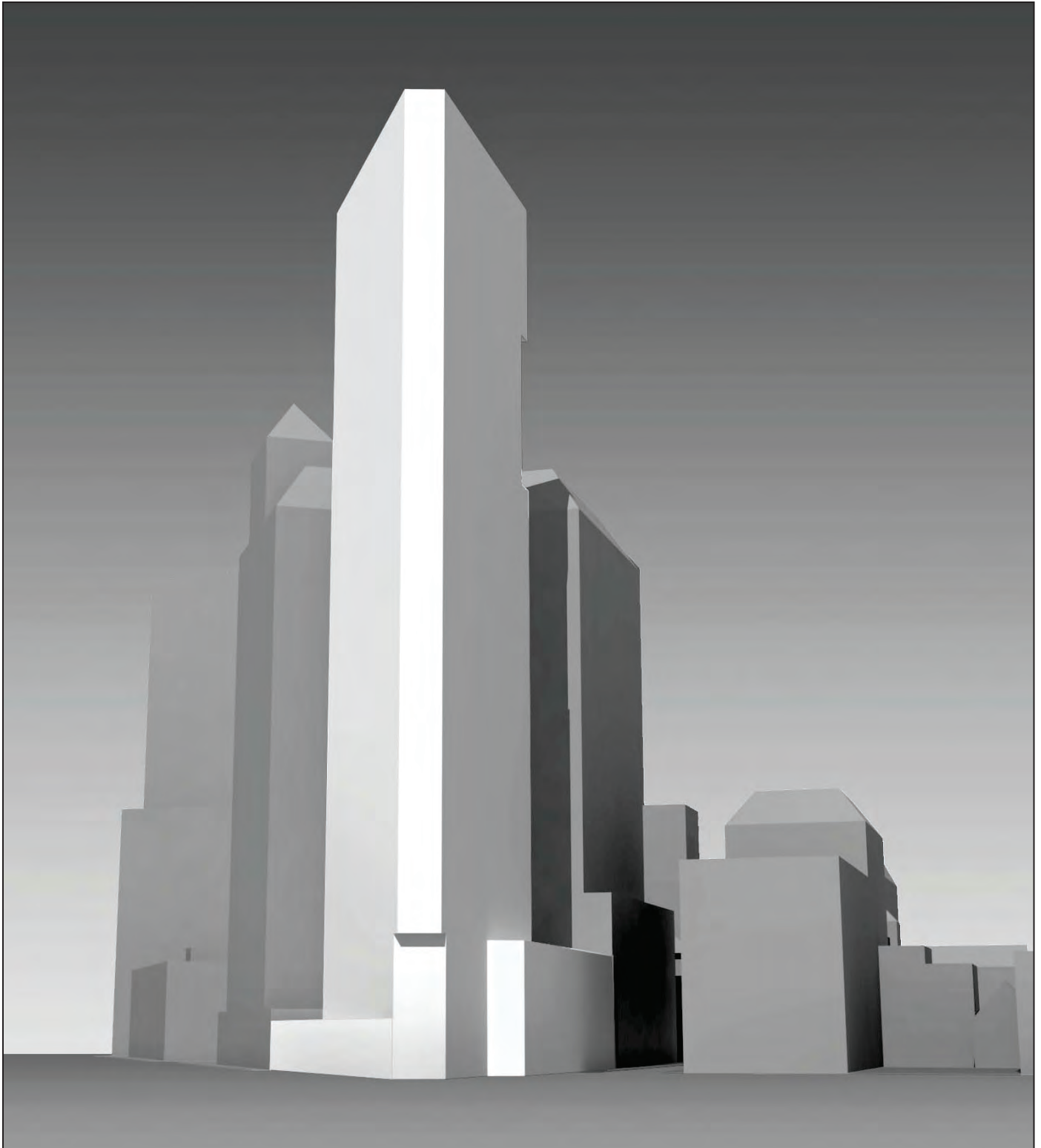
As shown in **Figure A-1**, the development site is located at the northern end of the block bounded by Clinton Street to the west, Tillary Street to the north, Cadman Plaza West to the east, and Pierrepoint Street to the south. The development site has street frontages along Clinton and Tillary Streets and Cadman Plaza West. The development site and project area are located in CD 2 and within a C6-4 commercial zoning district in the Special Downtown Brooklyn District (DB).

During construction of the proposed project, the branch library would be relocated to a temporary facility (the "interim site") at ~~443~~ 95 Remsen Street (Block 249, Lot ~~45~~ 16). The

¹ For conservative analysis purposes it was assumed that the proposed mixed-use development would include 308 DUs, assuming an average unit size of approximately 1,000 gsf.



Figure A-2



approximately 4-story, 7,500-sf structure at this location currently is in use as the social hall for Our Lady of Lebanon Church. As shown in **Figure A-4**, the interim site is located on the block bounded by Henry Street to the west, Montague Street to the north, Clinton Street to the east, and Remsen Street to the south. The interim site has one street frontage along Remsen Street as well as a handicap-accessible driveway entrance from Henry Street, and is located adjacent to Our Lady of Lebanon Church also at 95 Remsen Street (to the west) and a ~~3 1/2~~ 4-story ~~residential and commercial (medical office) church rectory~~ building at ~~115~~ 113 Remsen Street (to the east). The interim site is located in Brooklyn CD 2, within the Brooklyn Heights Historic District, within an LH-1 Limited Height District, and within an R6 residential zoning district.

The developer intends to utilize the inclusionary housing bonus available in C6-4 zoning districts for the proposed project. The Inclusionary Housing Program allows for an increase in the maximum permitted residential floor area through the provision of a certain amount of low-income residential floor area in new or rehabilitated construction, either on-site or off-site within the same community district or within one-half mile of the bonused development. The developer intends to develop 115 affordable DUs at two off-site locations within CD 2: at 911-917 Atlantic Avenue (76 DUs); and at 1041-1047 Fulton Street (39 DUs), both within the Clinton Hill neighborhood. Of the 115 affordable DUs, 114 units would be available to the following range of household incomes: 20 percent of the units (23 units) would be targeted for incomes that are 60 percent of Area Median Income (AMI); 54 percent (61 units) would be targeted for incomes of 80 percent AMI; 5 percent (6 units) would be targeted for incomes of 100 percent AMI; and 21 percent (24 units) would be targeted for incomes of 165 percent AMI or below. In addition, one unit would be made available to the buildings' superintendent free of rent. The 84 units that would be targeted for incomes that are 60 percent and 80 percent of AMI are necessary in order to provide the bonus floor area at the development site and to maximize the development floor area at these off-site locations, which are within an Inclusionary Housing designated area. The balance of the affordable housing at these locations would be committed to by the developer as part of the sales contract with the City of New York.

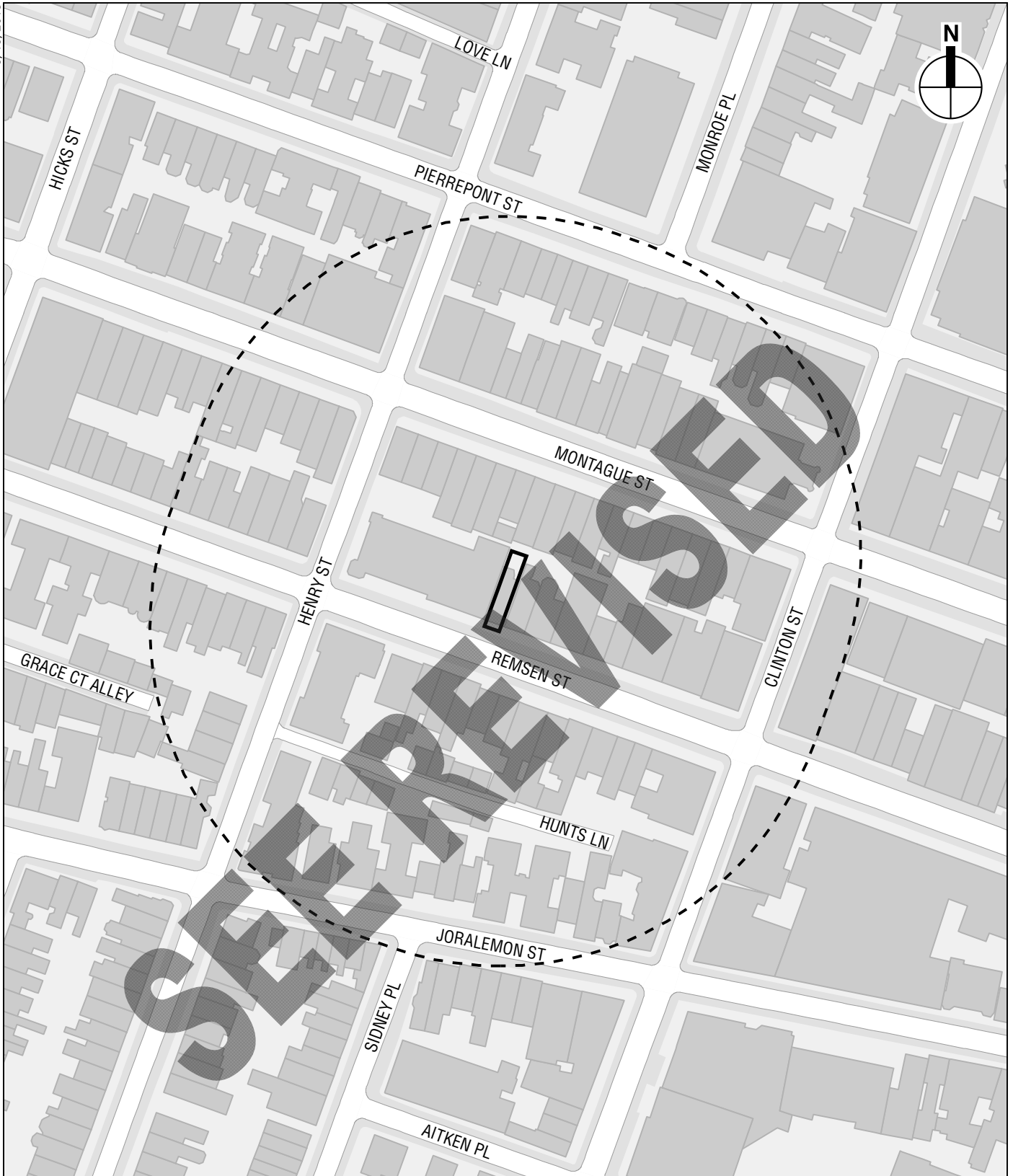
The proposed off-site housing would be developed prior to an issuance of a certificate of occupancy for the proposed mixed-use building on the development site, and therefore construction of these two buildings would also be concluded by the proposed development's build year of 2019.

B. PROPOSED ACTIONS

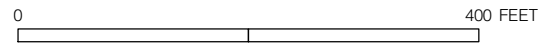
The actions necessary to facilitate the proposed project are:

- Disposition of City-owned property (Lot 16 on Block 239, which is currently occupied by the Brooklyn Heights branch of the BPL) to a private developer, Cadman Associates LLC. The disposition of City-owned property will require approval through the Uniform Land Use Review Procedure (ULURP) under City Charter Section 197(c) and separate Mayoral and Borough Board Approval of business terms pursuant to New York City Charter Section 384(b)(4);
- Acquisition of a condominium unit within the new mixed-use development by the City of New York for use as the Brooklyn Heights branch of the BPL; and
- ~~Minor m~~ Modification of a previously-approved special permit (860392 ZSK) applicable to One Pierrepont Plaza (Block 239, Lot 1), to make the special permit applicable to a zoning lot formed by Lots 1, 3, and 16 on Block 239.

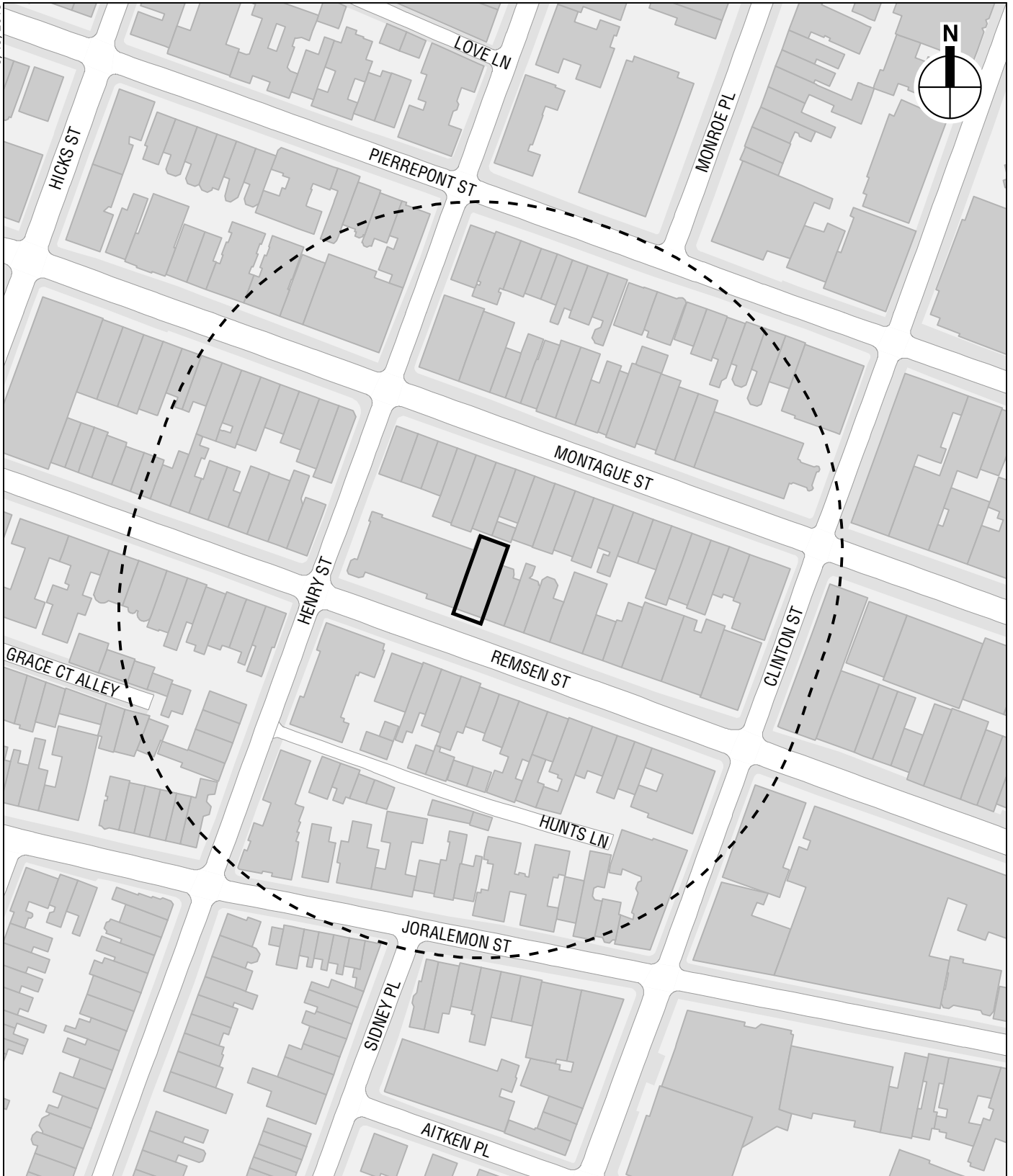
These are discretionary actions which are subject to City Environmental Quality Review (CEQR).




- Interim Site
- Study Area (400-foot boundary)



6/15/2015



 Interim Site

 Study Area (400-foot boundary)

0 400 FEET

In addition, a non-discretionary action required to facilitate the proposed project would be the merger of the existing zoning lot on Block 239 (which includes Lots 1 and 16) with Lot 3. The execution of a Zoning Lot Development Agreement (ZLDA) between the developer and the adjacent property owner, St. Ann's School, would allow the transfer of development rights from St. Ann's School (Lot 3) to the developer (Lot 16). Under the ZLDA, St. Ann's School (Lot 3) would transfer approximately 16,667 sf of unused floor area to the development site (Lot 16). The developer also will be generating a 2.0 Inclusionary Housing FAR bonus for the entire combined zoning lot, whereby Lots 2 and 1 would generate an additional approximately 100,012 sf of floor area for use on Lot 16.

C. PURPOSE AND NEED

The proposed project is intended to benefit public library users throughout Brooklyn. More than \$40 million from the sale of the development site would be invested in neighborhood library branches with urgent capital needs, resulting in a substantial reduction in deferred maintenance across the BPL system. Branches receiving proceeds from the proposed project would be chosen based on their overall outstanding critical needs, the opportunity for comprehensive upgrades, and their spread across the borough. In addition, the proposed project would replace the aging branch library structure at the development site with a new facility that would be 4,029 gsf larger than the existing branch library facility (not accounting for the Business and Career Library space). The replacement library would be among the largest neighborhood libraries in Brooklyn, and is expected to better serve its catchment area by providing new collections, technology, and extensive programs, including expanded areas for youth programs.

The proposed project also would create 115 new affordable housing units within Brooklyn CD 2. This affordable housing would advance a City-wide initiative to build and preserve 200,000 affordable units over 10 years in order to support New Yorkers with a range of incomes, from the very lowest to those in the middle class.

D. FRAMEWORK FOR ANALYSIS

This document has been prepared in accordance with the guidelines presented in the 2014 *CEQR Technical Manual*. For the technical attachments to the EAS, the analysis generally includes descriptions of existing conditions, conditions in the future without the proposed project (the No Action scenario) and the conditions in the future with the proposed project (the With Action scenario). For each relevant technical area, the incremental difference between the No Action scenario and the With Action scenario is analyzed to determine the potential environmental effects of the proposed project.

EXISTING CONDITIONS

The analysis framework begins with an assessment of existing conditions on the development site and project area, the interim site, and in the respective relevant study areas because these can be most directly measured and observed. The assessment of existing conditions does not represent the condition against which the proposed project is measured, but serves as a starting point for the projection of future conditions with and without the proposed project and the analysis of project impacts.

THE FUTURE WITHOUT THE PROPOSED PROJECT

The No-Action condition describes a future baseline condition to which the changes that are expected to result from the proposed project are compared. For each technical analysis, approved or designated development projects within the appropriate study area that are likely to be completed by the 2019 analysis year are considered.

In the No Action scenario, it is assumed that the existing building on the development site would remain, and that the building would continue to be used as the Brooklyn Heights branch of the BPL. However, in this scenario the Business and Career Library currently housed within the Brooklyn Heights branch library would be relocated to the BPL central branch at 10 Grand Army Plaza in the Prospect Heights neighborhood. The Business and Career Library would be relocated in order to better serve jobseekers and entrepreneurs, many of whom live and work outside the downtown Brooklyn area, as well as to provide a more central location for all Brooklyn residents. Users will be able to take advantage of the extended hours of service available at the central branch, as well as the interdisciplinary resources and modern work and study spaces at this location. The relocation would also eliminate collection overlap through shared collection areas and the creation of a unified depository of government documents, and would allow BPL to concentrate specialized database acquisitions in one location. The space within the existing building on the development site currently associated with the Business and Career Library would be unprogrammed space with no additional (dedicated) BPL staffing, with its use to be determined.

The existing buildings in the remainder of the project area, as well as on the interim site, would remain in their current use.

In the future without the proposed project the 115 off-site affordable housing units would not be built, and the proposed off-site housing locations would remain in their existing conditions. More specifically, 911-917 Atlantic Avenue would continue to be occupied by five structures while 1041-1047 Fulton Street would remain vacant.

THE FUTURE WITH THE PROPOSED PROJECT

In the future with the proposed project, the existing two-story building on the development site would be replaced by an approximately 441-foot-tall², 36-story mixed-use building containing residential, library, community facility, retail, and accessory parking uses. Development rights from Lot 3 (St. Ann's School) would be transferred to Lot 16 (the developer). With this transfer, the proposed project would contain a total of 407,989 gsf, of which approximately 308,082 gsf would be for residential use (139 market-rate units as designed³); approximately 21,500 gsf would be for a replacement branch library; up to approximately 19,800 gsf would be for community facility use; approximately 650 gsf would be for retail use, and approximately 38,098 gsf would be for accessory parking (45 spaces, below grade). See **Table A-1** below for a comparison of the No Action and With Action scenarios. As noted above, since the existing buildings on the remainder of the merged zoning lot would remain in their current use in both the No Action and With Action scenarios (19-story commercial building on Lot 1 and 6-story St. Ann's School building on Lot 3), and the interim site would remain in its current use in the No

² Including a mechanical bulkhead of approximately 25 feet.

³ Refer to Footnote 1.

Action condition (a 4-story building used as the social hall for Our Lady of Lebanon Church) and would be returned to its current use following the completion of project construction in the With Action scenario, these are not reflected in **Table A-1** below.

Table A-1
Comparison of No Action and With Action Scenarios
Proposed Development at 280 Cadman Plaza West

Site	Residential GSF	Residential Units	Community Facility GSF	Retail GSF	Accessory Parking Spaces	Total GSF
No Action Scenario						
Development Site	0	0	59,146 ¹	0	0	59,146
With Action Scenario						
Development Site	308,082	308	41,300 ²	650	45	407,989
Comparison, No Action to With Action						
Total	+308,082	308	-17,846	+650	+45	+348,843
Notes:						
¹ Includes ±17,471 gsf of branch library space, ±14,960 gsf of unprogrammed space, No Action use TBD; and ±26,715 gsf mechanical/utility space.						
² Includes ±21,500 gsf of branch library space, and ±19,800 gsf of community facility space.						

For the purposes of a conservative analysis, it is assumed that a larger number of residential units could be developed within the proposed mixed-use building. Therefore, while 139 DUs are proposed (at an average size of 2,216 gsf per DU), the analysis will instead assume the development of 308 DUs, at a much smaller, standard unit size of 1,000 gsf. In terms of height and massing, the analysis will assume the details of the current design.

None of the DUs to be constructed on the development site are assumed to be designated as affordable, as the proposed project would develop affordable housing at two off-site locations within CD 2, 911-917 Atlantic Avenue and at 1041-1047 Fulton Street, pursuant to the utilization of the inclusionary housing bonus and pursuant to the developer's contractual commitments with the City of New York. Attachment M, "Analysis of the Proposed Off-Site Affordable Housing", considers the potential environmental effects of this proposed off-site housing, as well as the potential for cumulative environmental effects with those of the proposed mixed-use development at 280 Cadman Plaza West. *

A. INTRODUCTION

The proposed actions would result in the development of a mixed-use building on the site currently occupied by the Brooklyn Heights Library, located at 280 Cadman Plaza West (“the development site”) in Brooklyn Community District (CD) 2. The proposed 407,989-gross-square-foot (gsf) mixed-use building would include: approximately 21,500 gsf of space containing an improved branch library; approximately 19,800 gsf of community facility use; approximately 650 gsf of retail use; approximately 308,082 gsf of residential use; approximately 19,859 gsf of mechanical space; and a 45-space, approximately 38,098-gsf below-grade parking facility. During the construction of the proposed project, the library would be relocated to a temporary facility (the “interim site”) located at ~~443~~ 95 Remsen Street.

In addition, the developer intends to utilize the inclusionary housing bonus available in C6-4 zoning districts for the proposed project. The Inclusionary Housing Program allows for an increase in the maximum permitted residential floor area through the provision of a certain amount of low-income residential floor area in new or rehabilitated construction, either on-site or off-site within the same community district or within one-half mile of the bonused development. The developer intends to develop 115 dwelling units (DUs) at two off-site locations (911-917 Atlantic Avenue and 1041-1047 Fulton Street) within CD 2.

To facilitate the proposed redevelopment, the project will require the disposition of the City-owned Brooklyn Heights branch of the Brooklyn Public Library (BPL) property to a private developer and the acquisition of a condominium unit within the new development by the City of New York for use as the Brooklyn Heights branch of the BPL. The proposed project also would require a ~~minor~~ modification of a previously-approved height and setback special permit for One Pierrepont Plaza¹ (Lot 1), which included in an existing zoning lot with the development site (Lot 16). In order to facilitate the proposed mixed-use building, subsequent to the merger of Lot 3 (St. Ann’s School) with the existing zoning lot, the developer is acquiring development rights from St. Ann’s School. The area covered by Lots 1, 3, and 16 are collectively referred to here as the “project area.”

This attachment assesses the potential impacts of the proposed project on land use, zoning, and public policy for the development site, the project area study area, the interim site, and the surrounding study area as compared with conditions without the proposed project. Analyses of land use, zoning, and public policy for the off-site affordable housing developments on 911-917

¹ C 960033A granted a height and setback waiver to allow 26 percent of the volume of the One Pierrepont Plaza building to penetrate the sky exposure plane, and C 860392 ZSK modified the special permit granted under C 960033A to increase the height of the One Pierrepont Building from 375 feet to 397 feet (an increase in floors from 19 to 21) and to reduce building setback encroachments by establishing 15-foot setbacks at the base of the 7th floor.

Atlantic Avenue and 1041-1047 Fulton Street are provided in Attachment M, “Analysis of the Proposed Off-Site Affordable Housing.”

PRINCIPAL CONCLUSIONS

This analysis concludes that the proposed project would be compatible with existing uses in the surrounding area, and would not result in any significant adverse impacts to land use, zoning, or public policy.

B. METHODOLOGY

This analysis of land use, zoning, and public policy examines the area within 400 feet of the project area (Block 239, Lots 1, 3, and 16) and the interim site (Block 249, Lot ~~15~~ 16). As shown on **Figure B-1a**, the 400-foot project area study area is roughly bounded by Clark Street to the north, Montague Street to the south, Monroe Place to the west, and Cadman Plaza East to the east. As shown on **Figure B-1b**, the interim site study area is roughly bounded by Pierrepont Street to the north, Joralemon Street to the south, Henry Street to the west, and Clinton Street to the east.

The analysis begins by considering existing conditions in the project area study area in terms of land use, zoning, and public policy. The analysis then projects land use, zoning, and public policy in the future without the proposed project in the 2019 analysis year by identifying developments and potential policy changes expected to occur within that time frame. Probable impacts of the proposed project are then identified by comparing conditions with the proposed project with those conditions predicted without the proposed project.

Sources for this analysis include the New York City Department of City Planning (DCP) and the New York City Department of Buildings (DOB).

C. EXISTING CONDITIONS

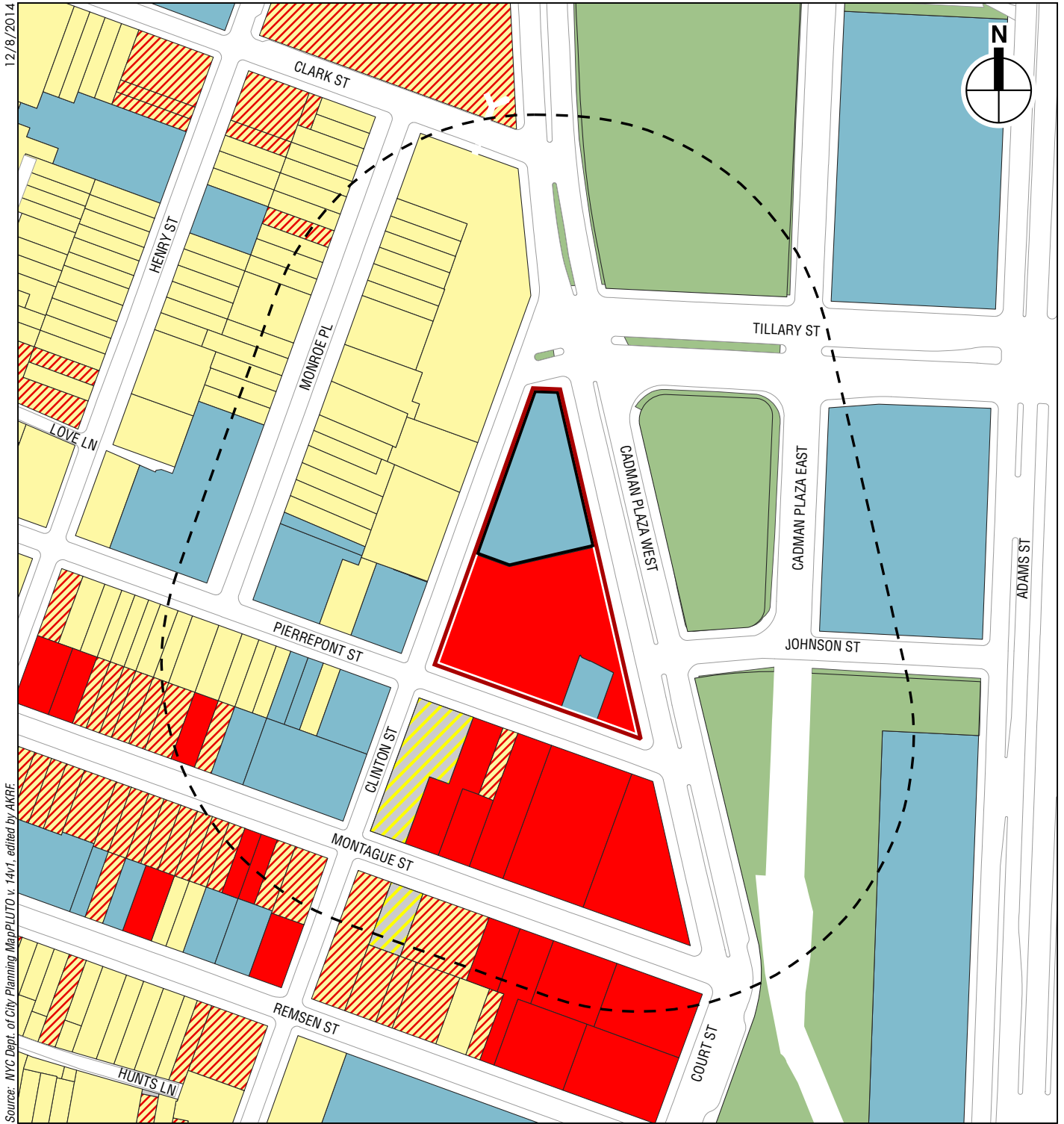
LAND USE

DEVELOPMENT SITE

The development site is located at the northern end of the block bounded by Cadman Plaza West to the east, Clinton Street to the west, Tillary Street to the north, and Pierrepont Street to the south (see **Figure B-1a**). The development site is located on Block 239, Lot 16, is approximately 26,620 square feet (sf) in size, and is currently owned by the City of New York and operated by BPL under a long-term agreement and in accordance with the establishment of the BPL system. It currently contains the two-story, approximately 63,000-gsf Brooklyn Heights Library. The library includes an estimated 32,431 gsf of “usable” space, including 17,471 gsf of branch library space and 14,960 gsf of Business and Career Library space. The remaining 30,569 gsf of space is not defined as branch library use as it is comprised of mechanical and utility space and is inaccessible to the public.

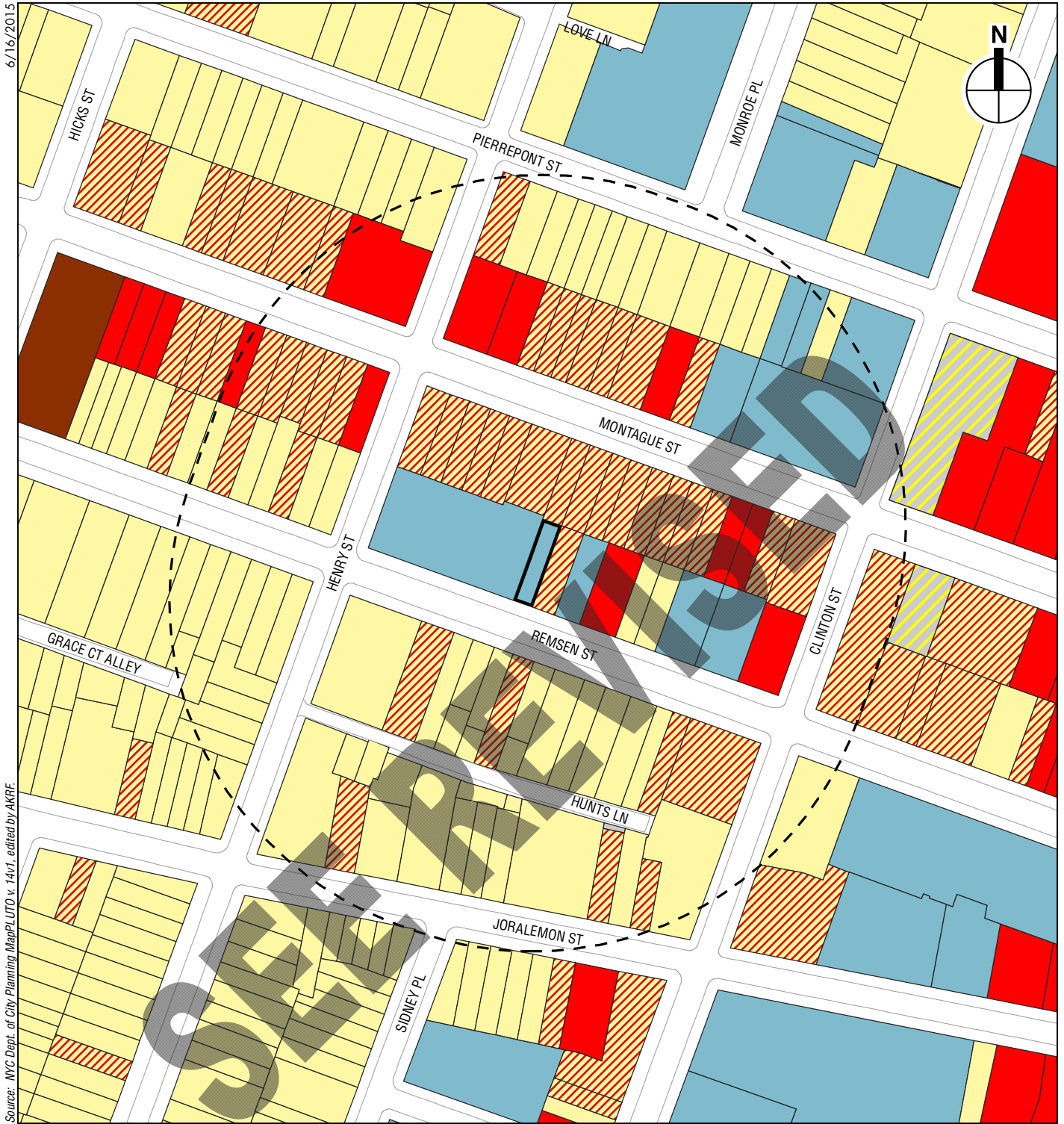
PROJECT AREA

The library is located on Block 239, Lot 16, on a zoning lot that includes Lot 1, which is owned by the City of New York and leased to Forest City Ratner Companies under a 99-year ground lease. As part of the proposed actions the existing zoning lot would be merged with Lot 3 on the same block. Lot 1 is approximately 46,050 sf in size and is occupied by 1 Pierrepont Plaza, a 19-story, approximately 726,000 gsf commercial office building. Lot 3 is occupied by a 6-story,



- | | |
|-----------------------------------|------------------------------------|
| Project Area | Public Facilities and Institutions |
| Development Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Open Space and Outdoor Recreation | Under Construction |

0 200 FEET



Source: NYC Dept. of City Planning MapPLUTO v. 14v1, edited by AKRF.

- | | |
|------------------------------------|-----------------------------------|
| Interim Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Hotels | Under Construction |
| Public Facilities and Institutions | |

0 200 FEET



Source: NYC Dept. of City Planning MapPLUTO v. 14v1, edited by AKRF.

- | | |
|------------------------------------|-----------------------------------|
| Interim Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Hotels | Under Construction |
| Public Facilities and Institutions | |

0 200 FEET

approximately 28,000 gsf institutional building, which is owned and occupied by the St. Ann's School. Lot 3 is approximately 3,956 sf in size. As part of the proposed project, Lot 3 would be merged with the existing zoning lot on Block 239, which currently contains Lots 1 and 16.

PROJECT AREA STUDY AREA

The 400-foot project area study area includes portions of the Brooklyn Heights and Downtown Brooklyn neighborhoods. The western portion of the study area is part of the Brooklyn Heights neighborhood, which contains a well-established mix of residential, office, retail, and institutional uses. The neighborhood is characterized by 19th century brick and brownstone residential rowhouses, as well as a number of larger apartment buildings that date from the first half of the 20th century. Some of the larger apartments include an 11-story building at 40 Clinton Street and a 12-story building at 24 Monroe Place. Most of the Brooklyn Heights neighborhood is a New York City Historic District and there are few new developments in the area.

There are several churches and schools located in the Brooklyn Heights neighborhood, including St. Ann's School at 122-124 Pierrepont Street and 129 Pierrepont Street, which is directly across the street from the development site/project area. Other institutional uses within the study area include the First Unitarian Congressional Society at 48 Monroe Place and St. Ann and the Holy Trinity Episcopal Church located at 157 Montague Street. The Brooklyn Historical Society is also located southwest of the project area at 128 Pierrepont Street. Montague Street is the major retail corridor in the area. Ground-floor retail uses along Montague Street include a mix of restaurants, convenience goods, and shoppers' goods.

The eastern portion of the project area study area, east of Clinton Street and along Cadman Plaza West, is a transitional area between the predominantly residential Brooklyn Heights neighborhood and the institutional, commercial and office uses of Downtown Brooklyn. South of the development site/project area are larger commercial and office buildings. Major tenants along Pierrepont and Montague Streets include Citi Bank, TD Bank, Santander Bank, and the Social Security Administration Office. There are two sites under construction. These developments are discussed below, in Section D, "The Future Without the Proposed Project."

East of Cadman Plaza West, the study area contains open space uses that surround notable institutional uses. These open space uses include portions of Cadman Plaza Park, Korean War Veterans Plaza, and Columbus Park. This portion of project area study area includes Kings County Supreme Court, located at 360 Adams Street and the U.S. District Bankruptcy Court and U.S. Post Office are also located east of the project area at 271 Cadman Plaza East.

INTERIM SITE

The interim site (Block 249, Lot ~~45~~ 16) is located on the southern side of the block bounded by Montague Street to the north, Remsen Street to the south, Henry Street to the west, and Clinton Street to the east (see **Figure B-1b**). The site currently contains a 4-story structure that is in use as the social hall for Our Lady of Lebanon Church.

INTERIM SITE STUDY AREA

Located two blocks away from the development site, the boundary of the 400-foot interim site study area is also located within the Brooklyn Heights neighborhood. As noted above, the Brooklyn Heights neighborhood is a New York City Historic District and is characterized by 19th century brick and brownstone residential rowhouses. The interim site study area contains a mix of residential, commercial, and institutional uses.

Residential uses make up the majority of the interim site study area. Generally, residences along Joralemon, Remsen, Montague, and Pierrepont Streets, are rowhouses with five- or six-stories. Montague Street is the major retail corridor in the area. Ground-floor retail uses along Montague Street include a mix of restaurants, national retailers, and convenience goods. Many of the side streets include medical and professional offices on the ground level of residential buildings.

Several religious institutions exist within the interim site study area. Northeast of the relocation site are institutional uses that are also within the project area study area, and include St. Ann's School, St. Ann and the Holy Trinity Episcopal Church, and the Brooklyn Historical Society. Along Remsen Street directly west of the interim site is Our Lady of Lebanon Church, which is also located at 95 Remsen Street. To the east of the interim site, the Congregation B'Nai Avraham, Brooklyn Heights Synagogue, and St. Francis Monastery are located at 117 Remsen Street, 131 Remsen Street, and 135 Remsen Street, respectively.

ZONING

DEVELOPMENT SITE AND PROJECT AREA

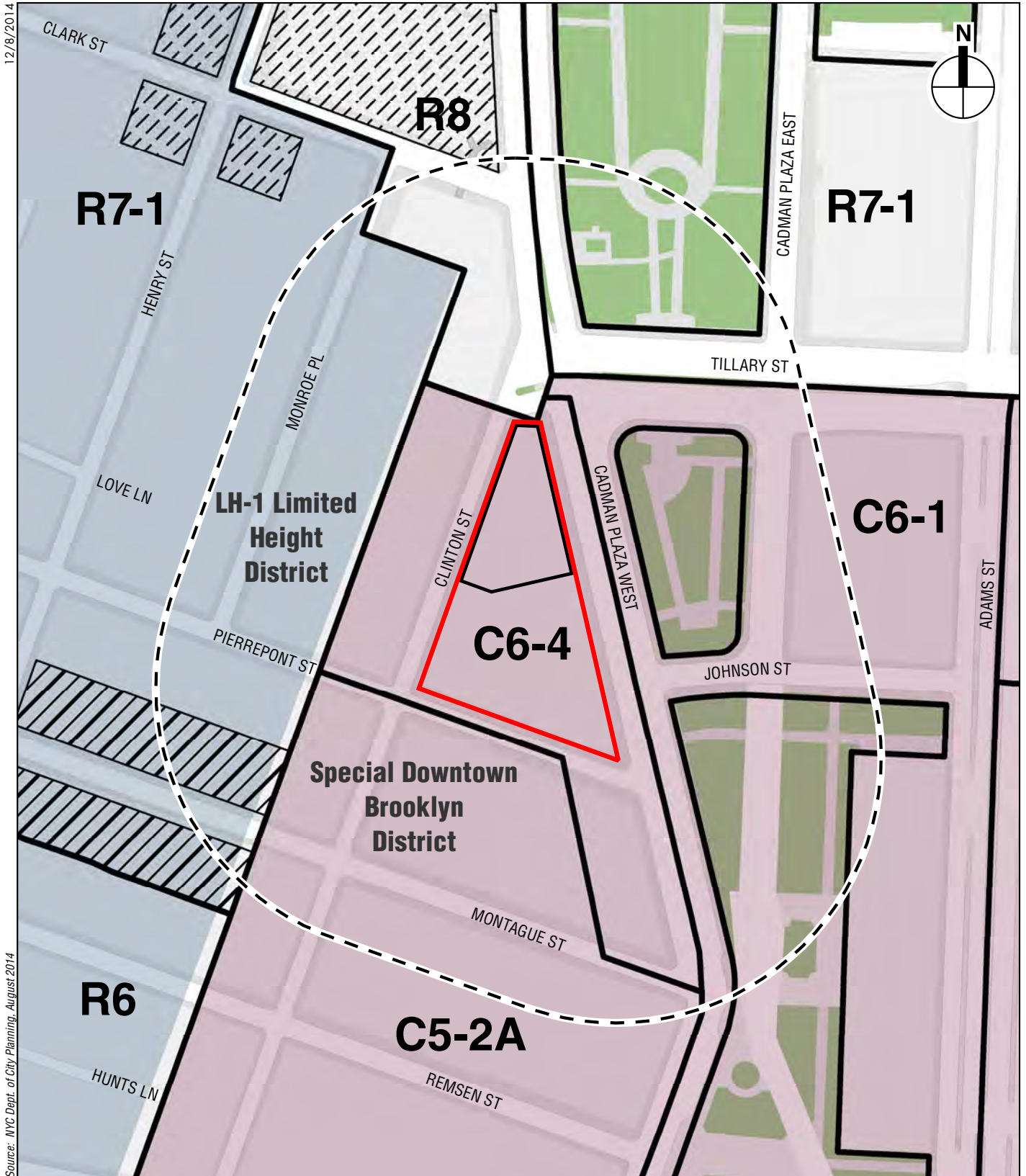
As shown in **Figure B-2a**, the development site and project area are located in a C6-4 zoning district and the Special Downtown Brooklyn District (DB). The C6-4 zoning district generally includes portions of the blocks directly to the west and south of the development site. The C6-4 zoning district allows medium- to high-density and a maximum permitted FAR of 10.0 for commercial, residential, and community facility uses. Commercial and residential uses can achieve an FAR of 12 through a plaza bonus or the provision of inclusionary housing.

The DB generally extends east and south of the development site and project area. The special district was designed to permit large commercial buildings appropriate for a downtown business district to be developed as-of-right, with a transitional contextual buffer at the peripheries of Downtown Brooklyn to protect adjacent historic residential neighborhoods. A zoning text amendment put forth by DCP regarding parking controls in the special district was approved in December 2012. The zoning text amendment reduced the minimum parking requirements for new residential developments from 40 percent of new market-rate housing units to 20 percent of new market-rate units, to better reflect actual parking demand in Downtown Brooklyn, which features some of the best transit access in the City. The parking text amendment also was meant to encourage affordable and mixed-income housing by eliminating parking requirements for affordable housing units, as well as to simplify the parking regulations in the special district to provide more opportunities for additional public parking for use by residents, employees and visitors.

PROJECT AREA STUDY AREA

In addition to the C6-4 district and the special district described above, there are several other zoning districts in the study area (see **Figure B-2a** and **Table B-1**). A limited height district, LH-1, is also located within the study area, west of Clinton Street.

An R7-1 district is mapped in the northeastern portion of the study area, north of Tillary Street and east of Cadman Plaza West as well as in the western portion of the study area north of Montague Street and west of Clinton Street. R7-1 districts are medium-density apartment house districts. An R8 district is mapped in the northwestern portion of the study area, located north of Tillary Street and west of Cadman Plaza West. Apartment buildings in R8 districts can range from mid-rise, eight- to ten-story buildings to much taller buildings set back from the street on large zoning lots. The maximum residential FAR ranges from 0.94 to 6.02.



Zoning
Figure B-2a

A C1-3 commercial overlay district is mapped on a portion of the R7-1 district along Montague Street. A C1-5 commercial overlay district is mapped on a portion of the R8 district along Clark Street. Commercial overlay districts are intended to provide residential areas with local retail such as grocery stores, restaurants, or salons as well as local services such as insurance or realtor offices.

**Table B-1
Zoning**

Zoning District	Maximum FAR¹	Uses/Zone Type
Residential Districts		
R6	0.78-2.43 residential uses ² 2.0 commercial uses 4.8 community facility uses	Medium-density residential district with either height factor or Quality Housing bulk regulations.
R7-1	0.87-3.44 residential uses ² 2.0 commercial uses 4.8 community facility uses	Medium-density residential district with either height factor or Quality Housing bulk regulations.
R8	0.94-6.02 residential uses ² 2.0 commercial uses 6.5 community facility uses	High-density residential district with either height factor or Quality Housing bulk regulations.
Commercial Districts		
C1-3	2.0 commercial uses; ³ follows bulk residential and community facility regulations of mapped residential district	Commercial overlay mapped within residential districts; includes local shopping and services
C1-5	2.0 commercial uses; ³ follows bulk residential and community facility regulations of mapped residential district	Commercial overlay mapped within residential districts; includes local shopping and services
C5-2A	10.0 residential uses ² 10.0 commercial uses 10.0 community facility uses	Central commercial district with continuous retail frontage intended for office and retail establishments that serve the metropolitan region
C6-1	0.87-3.44 residential uses ³ 6.0 commercial uses ⁴ 6.5 community facility uses ⁴	Medium- to high-density in central business commercial districts
C6-4	10.0 residential uses ² 10.0 commercial uses ⁴ 10.0 community facility uses	Medium- to high-density in central business commercial districts
Notes: ¹ Floor Area Ratio (FAR) is a measure of density establishing the amount of development allowed in proportion to the base lot area. For example, a lot of 10,000 sf with a FAR of 1 has an allowable building area of 10,000 sf. The same lot with an FAR of 10 has an allowable building area of 100,000 sf. ² Can be increased with Inclusionary Housing Program bonus ³ Within R6-R10 (1.0 commercial within R1-R5) ⁴ Up to 20 percent increase for a public plaza bonus ⁵ 4.0 FAR permitted on wide streets under the Quality Housing Program.		
Source: <i>New York City Zoning Resolution</i>		

A C5-2A commercial district is located south of Pierrepont Street. C5-2A districts are central commercial districts with continuous retail frontage intended for offices and retail establishments that serve the entire metropolitan region. C5-2A districts allow for a maximum permitted FAR of 10.0 for commercial, residential, and community facility uses. Residential uses can achieve an FAR of 12 through the Inclusionary Housing Program. The Inclusionary Housing Program allows for an increase in the maximum permitted residential floor area through the provision of a certain amount of low-income residential floor area in new or rehabilitated construction, either on-site or off-site within the same community district or within one-half mile of the bonused development. All affordable residential units created through the Inclusionary Housing Program must remain permanently affordable.

A C6-1 district is mapped in the eastern portion of the study area, south of Tillary Street and east of Cadman Plaza West. C6-1 commercial districts allow medium- to high-density commercial districts with such uses as large hotels, office buildings, department stores, and entertainment facilities. The maximum permitted FAR for commercial uses is 6.0. The permitted FAR for residential uses is 3.44 under the DB, with up to 4.0 FAR on wide streets under the Quality Housing Program and up to 5.01 FAR for elderly housing. The maximum permitted FAR for community facility uses is 6.5 with up to a 20 percent increase for a public plaza bonus.

INTERIM SITE

The interim site is located within an R6 zoning district (see **Figure B-2b** and **Table B-1**). The R6 zoning district extends south of Remsen Street and west of Clinton Street. R6 districts are widely mapped in built-up, medium-density areas. R6 zoning districts allow for a 2.0 FAR for commercial uses and a 4.8 FAR for community facility uses. The maximum permitted residential FAR ranges from 0.78-2.43.

INTERIM SITE STUDY AREA

Other than the R6 zoning district, the interim site study area contains the aforementioned C1-3 commercial overlay district, the C5-2A central commercial district, and the R7-1 medium-density residential district.

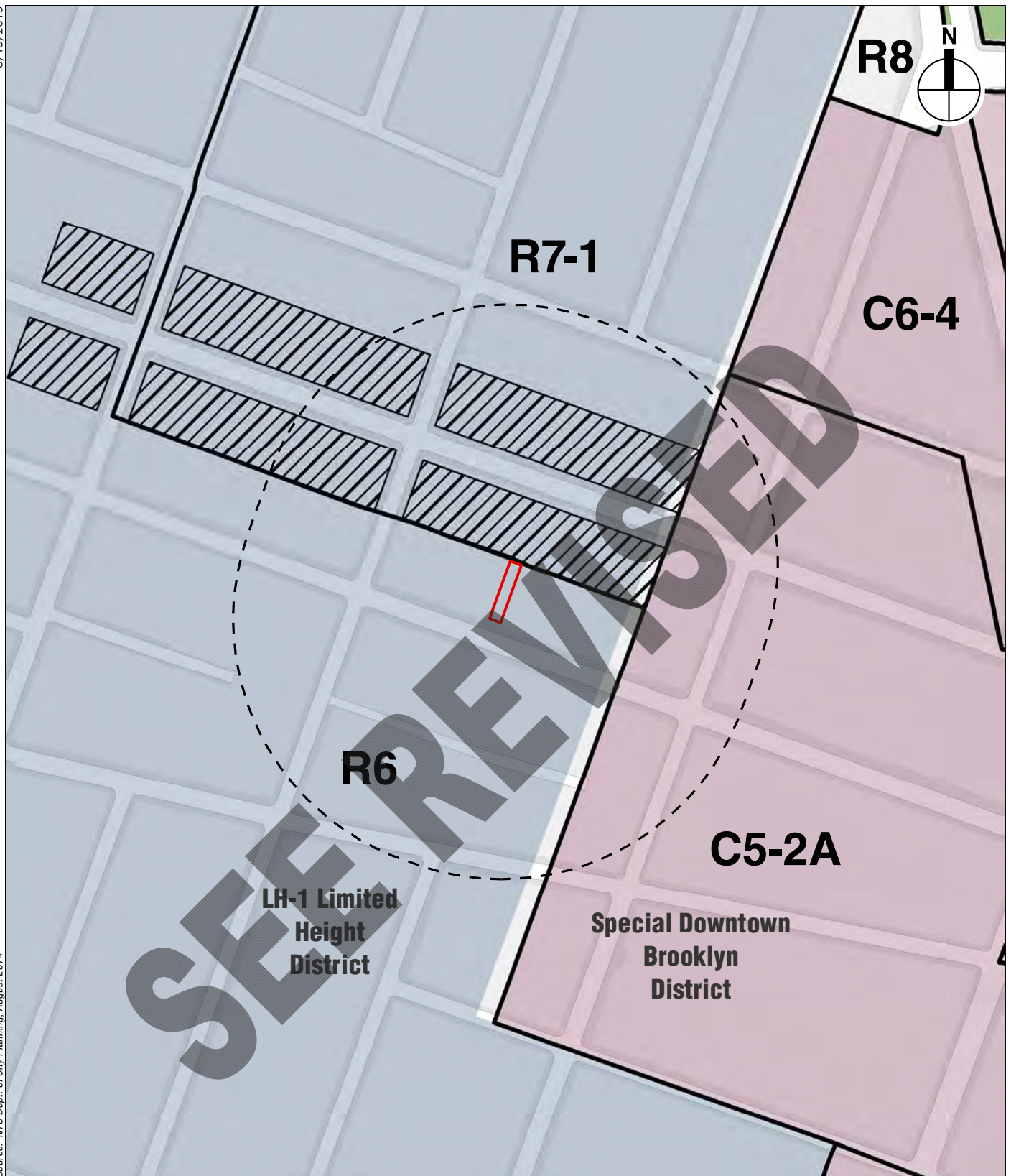
PUBLIC POLICY

DOWNTOWN BROOKLYN DEVELOPMENT PLAN

Approved by the City Planning Commission on May 10, 2004, and adopted by the City Council on June 28, 2004, the Plan for Downtown Brooklyn was a comprehensive development plan to facilitate the continued growth of Downtown Brooklyn. The plan aimed to foster a multi-use urban environment to serve the residents, businesses, academic institutions and cultural institutions of Downtown Brooklyn and its surrounding communities. To achieve these goals, the Plan called for enacting major zoning changes, creating high quality public spaces, providing adequate parking facilities, improving transit infrastructure, strengthening retail, expanding cultural resources and enhancing the pedestrian environment. The plan resulted in the 2004 rezoning of much of Downtown Brooklyn and called for increased allowable FAR for residential, commercial, and community facility uses.

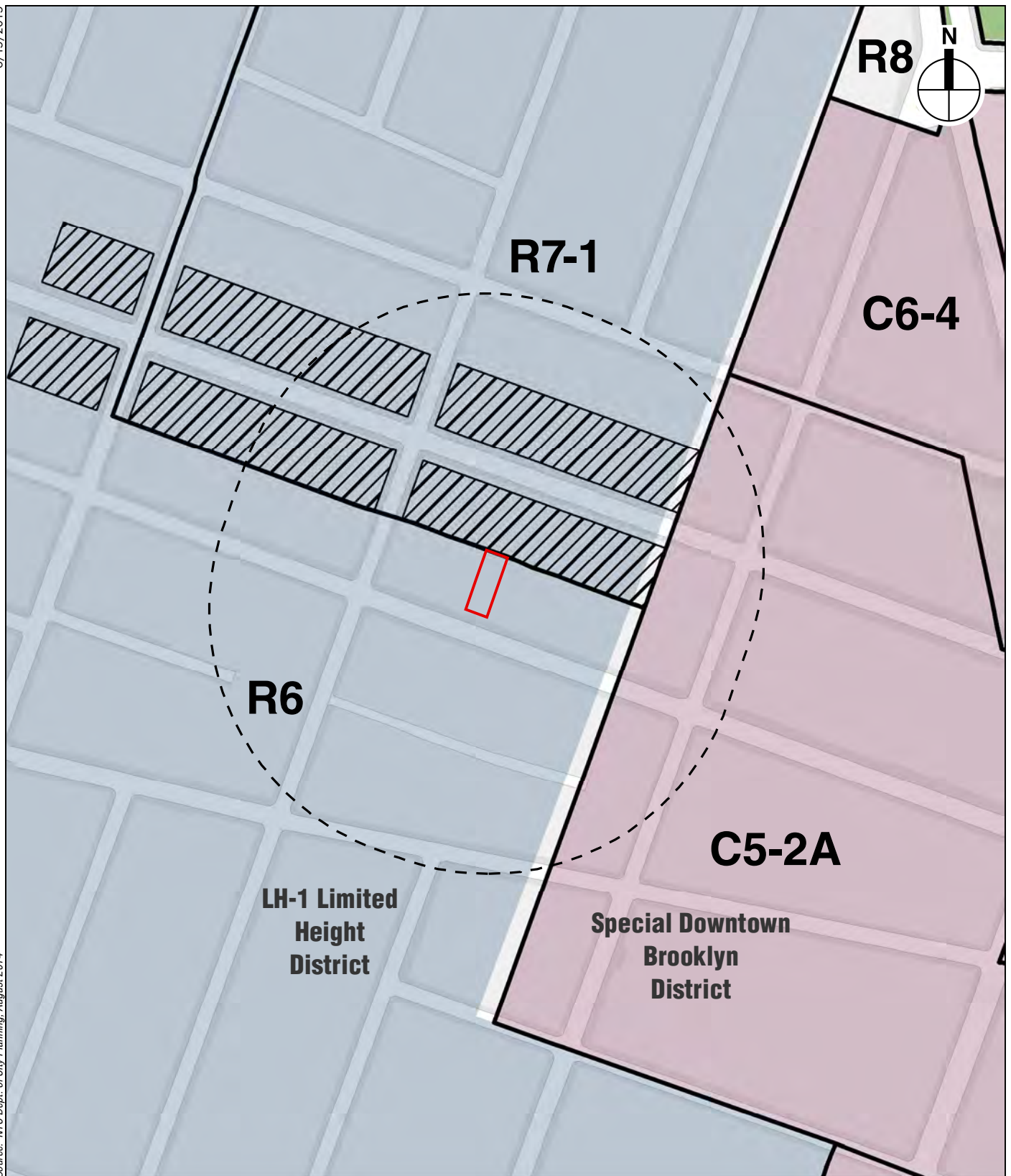
WATERFRONT REVITALIZATION PROGRAM

The development site and project area are not within the City's designated Coastal Zone Boundary. While the interim site is located within the Coastal Zone Boundary, the proposed project would not result in any new construction or new permanent use of the existing building on that site. The interim site would remain in its current use in the No Action condition and would be returned to its current use following the completion of project construction in the With Action scenario. Therefore, as the use of the interim site as part of the proposed project is only temporary, an assessment of the consistency of the proposed project with the City's Waterfront Revitalization Program (WRP) is not warranted.



- Interim Site
- Study Area (400-foot boundary)
- Zoning Districts
- Special Purpose District
- Limited Height District
- C1-3

0 200 FEET



- | | |
|--------------------------------|--------------------------|
| Interim Site | Special Purpose District |
| Study Area (400-foot boundary) | Limited Height District |
| Zoning Districts | C1-3 |

0 200 FEET

D. THE FUTURE WITHOUT THE PROPOSED PROJECT

LAND USE

DEVELOPMENT SITE

Absent the proposed actions, the estimated 17,471-gsf branch library will remain on the development site; however, the estimated 14,960-gsf Business and Career Library space currently housed within the Brooklyn Heights Library will be relocated to the BPL Central Library at 10 Grand Army Plaza in the future without the proposed actions. The space currently associated with the Business and Career Library would be unprogrammed space with no additional (dedicated) BPL staffing, with its use to be determined. Given that the branch library would provide the same services and functions as it does today, there is no anticipation of an increase in branch library visitation in the No Action condition. Rather, it is expected that overall visitation to the development site would decrease with the relocation of the Business and Career Library.

PROJECT AREA STUDY AREA

Current land use and development trends are expected to continue in the future without the proposed project with few new developments in the Brooklyn Heights neighborhood, but increasing trends towards residential and mixed-use developments in the Downtown Brooklyn area. Two development projects are expected to be completed within the 400-foot project area study area by the 2019 analysis year (see **Table B-2** and **Figure B-3**). Located south of the development site, the project at 177 Montague Street will convert the Brooklyn Trust Company Building into 12 residential units. The development at 172 Montague Street will include 62 residential units and 13,637 gsf of retail use.

Table B-2
Projects Under Construction Within the 400-Foot Study Area by 2019

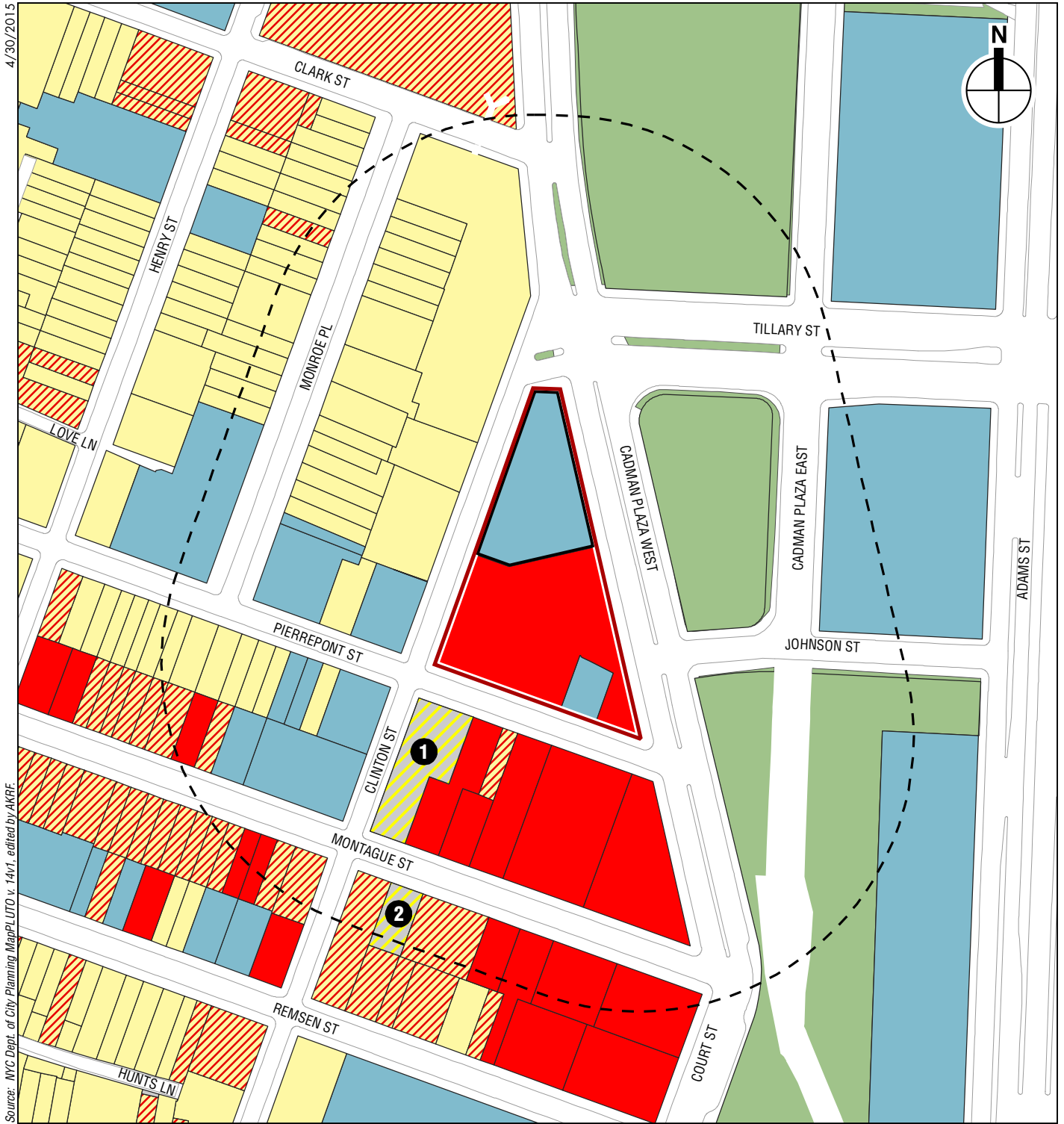
Ref. no. ¹	Name/Location	Program	Status/Build Year
1	The Brooklyn Trust Company Building/ 177 Montague Street	12 residential units	Under Construction/2014
2	172 Montague Street	62 residential units; 13,673 gsf retail	Under Construction/ 2015
Note: ¹ See Figure B-3 for project locations.			
Sources: New York City Department of Buildings; media coverage; field visits, October 2014.			

INTERIM BRANCH LIBRARY SITE

No changes to the interim site are currently anticipated in the future without the proposed project. The site is expected to remain in its current use, as the social hall for Our Lady of Lebanon Church.

INTERIM SITE STUDY AREA

No projects are anticipated to be constructed within the 400-ft interim site study area by 2019. The two development projects discussed above which are located in the project area study area are just outside of the interim site study area. Current land use and development trends are expected to continue in the future without the proposed project.



- | | |
|-----------------------------------|------------------------------------|
| Project Area | Public Facilities and Institutions |
| Development Site | Residential |
| Study Area (400-foot boundary) | Residential with Commercial Below |
| Commercial and Office Buildings | Vacant Land |
| Open Space and Outdoor Recreation | Under Construction |
| Projects Under Construction | |

280 CADMAN PLAZA WEST

Projects Under Construction
Figure B-3

ZONING AND PUBLIC POLICY

There are no known changes to zoning or public policy expected to occur in the future without the proposed project by 2019.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

LAND USE

DEVELOPMENT SITE

As described in Attachment A, “Project Description,” the proposed project would result in a mixed-use development on the development site. The proposed project would include: an approximately 21,500-gsf improved branch library; 19,800 gsf of community facility use; 650 gsf of retail use; 308,082 gsf of residential use (for conservative analysis purposes assumed to be 309 units); and a 38,098-gsf, 45-space below-grade accessory parking facility.

While the proposed project would result in additional residential, community facility, and parking uses on the development site as compared to the future without the proposed project, the proposed project would replace the aging library on Cadman Plaza West with a new, approximately 21,500-gsf facility that would be among the largest neighborhood libraries in Brooklyn. According to BPL, the new library would better serve the catchment area and would provide new collections, technology, and extensive programs, including expanded areas for youth programs.

The proposed project would be in keeping with the Downtown Brooklyn district trends toward increasing mixed-use residential developments in the eastern portion of the study area. The proposed project would result in land uses that are allowable under existing zoning. Overall, the proposed project would result in a vibrant, mixed-use building, and would not result in any significant adverse land use impacts on the development site.

PROJECT AREA

No changes would occur on the remainder of the project area. Brooklyn Block 239, Lots 1 and 3 would remain as in existing conditions.

PROJECT AREA STUDY AREA

The proposed building would be compatible with other existing and planned mixed-use residential buildings in the area. The area immediately surrounding the project area contains several larger residential developments, such as the approximately 153-unit residential building at 40 Clinton Street and the approximately 121-unit residential building at 10 Clinton Street. In addition, the mixed-use building at 182 Montague Street contains approximately 186 units with ground-floor retail below. Thus, the proposed project would be in keeping with existing land use trends as the Downtown Brooklyn area becomes a denser residential and mixed-use neighborhood. Overall, the proposed project would not result in any significant adverse land use impacts in the study area.

INTERIM BRANCH LIBRARY SITE

During the construction period of the proposed project, the branch library would be relocated to the temporary facility at ~~443~~ 95 Remsen Street (the interim site). This relocation would be in keeping with the existing institutional use of the site. While the construction period associated with the proposed mixed-use development would last approximately 40 months and involve a

temporary change in the interim site's use from social hall to library branch, it is not expected to result in a significant adverse land use impact. Once construction is complete, the interim site would return to its existing use as the social hall for Our Lady of Lebanon Church. Therefore, the proposed project would not result in any significant adverse land use impacts on the interim site.

INTERIM SITE STUDY AREA

The current use of the interim site is compatible with the existing uses in the area. The temporary relocation of the branch library use to this site would not introduce a new use to the neighborhood and would facilitate the maintenance of this community facility to meet needs of the surrounding neighborhood. Therefore, the interim site would be supportive of existing land uses and would not result in significant adverse land use impacts.

ZONING

The proposed project would require the merger of the existing zoning lot on Block 239 (which includes Lots 1 and 16) with Lot 3. A Zoning Lot Development Agreement (ZLDA) between the developer and the adjacent property owner, St. Ann's School, would allow the transfer of development rights from St. Ann's School (Lot 3) to the developer (Lot 16). Overall, the proposed actions would not change the zoning of the development site, project area, or project area study area, nor would it change the zoning of the interim site or interim site study area. Therefore, the proposed project would not result in significant adverse impacts to zoning.

PUBLIC POLICY

The proposed project would be compatible and consistent with current public policies that govern the development site, project area, project area study area, interim site, and interim site study area. The proposed project would further the goals of the Downtown Brooklyn Development Plan by creating a new multi-use development that serves the residents, businesses, and institutions of Downtown Brooklyn. Overall, the proposed project would not result in any significant adverse impacts to land use, zoning, or public policy. *

A. INTRODUCTION

The proposed actions would result in the development of an approximately 407,989-gross-square-foot (gsf) mixed-use building on 280 Cadman Plaza West (“the development site”) that would include 308,082 gsf of residential use. The introduction of new residents to the development site has the potential to alter the socioeconomic conditions of the surrounding area. This attachment therefore examines the potential impacts of the proposed project on the socioeconomic character of the study area adjacent to the development site. Analyses of potential changes of socioeconomic conditions at the two off-site locations are provided in Attachment M, “Analysis of Proposed Off-Site Affordable Housing.”

PRINCIPAL CONCLUSIONS

This analysis concludes that the proposed mixed-use building on the development site would not result in any significant adverse impacts due to changes in socioeconomic conditions.

B. METHODOLOGY**BACKGROUND**

Although changes in population, housing, and economic activity may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area. In some cases, these changes may be substantial but not adverse. In other cases, these changes may be good for some groups but bad for others. The objective of the CEQR analysis is to disclose whether any changes are effectuated by the proposed development.

An assessment of socioeconomic impacts distinguishes between impacts on the residents and businesses in an area and separates these impacts into direct and indirect displacement for both of those segments. Direct displacement occurs when residents or businesses are involuntarily displaced from the site of the proposed project or sites directly affected by it. For example, direct displacement would occur if a currently occupied site were redeveloped for new uses or structures or if a proposed easement or right-of-way encroached on a portion of a parcel and rendered it unfit for its current use. In these cases, the occupants of a particular structure to be displaced can usually be identified, and therefore the disclosure of direct displacement focuses on specific businesses and a known number of residents and workers.

Indirect or secondary displacement occurs when residents, business, or employees are involuntarily displaced due to a change in socioeconomic conditions in the area caused by the proposed project. Examples include the displacement of lower-income residents who are forced to move due to rising rents caused by the higher-income housing introduced by a proposed project. Examples of indirect business displacement include higher-paying commercial tenants replacing industrial uses when new uses introduced by a proposed project cause commercial

rents to increase. Unlike direct displacement, the exact occupants to be indirectly displaced are not known. Therefore, an assessment of indirect displacement usually identifies the size and type of groups of residents, businesses, or employees potentially affected.

Some projects may affect the operation and viability of a specific industry not necessarily tied to a specific location. An example would be new regulations that prohibit or restrict the use of certain processes that are critical to certain industries. In these cases, the CEQR review process may involve an assessment of the economic impacts of the project on that specific industry.

DETERMINING WHETHER A SOCIOECONOMIC ASSESSMENT IS APPROPRIATE

According to the 2014 *CEQR Technical Manual*, a socioeconomic assessment should be conducted if a project may be reasonably expected to create socioeconomic changes in the area affected by the project that would not be expected to occur in the absence of the project. The following screening assessment considers threshold circumstances identified in the *CEQR Technical Manual* and enumerated below that can lead to socioeconomic changes warranting further assessment.

As detailed in Attachment A, “Project Description,” the proposed actions would result in a mixed-use building on the development site containing approximately 308,082 gsf of residential use (139 units as designed, but assumed to be 308 units for conservative analysis purposes); up to approximately 41,300 gsf of community facility uses, including a 21,500-gsf space for the Brooklyn Heights branch of the Brooklyn Public Library (BPL); 650 gsf of retail use, and a 45-space accessory parking garage.

- 1. Direct Residential Displacement: Would the project directly displace residential population to the extent that the socioeconomic character of the neighborhood would be substantially altered? Displacement of fewer than 500 residents would not typically be expected to alter the socioeconomic character of a neighborhood.***

The development site is currently occupied by the Brooklyn Heights branch of the BPL, which includes an estimated 17,471 gsf of branch library space and 14,960 gsf of Business and Career Library space, and does not contain any residential uses. Therefore, the proposed mixed-use building on the development site would not directly displace any residents, and an assessment of direct residential displacement is not warranted.

- 2. Direct Business Displacement: Would the project directly displace more than 100 employees? If so, assessments of direct business displacement and indirect business displacement are appropriate.***

The development site is currently occupied by the Brooklyn Heights branch of BPL and does not currently contain any other businesses or institutional uses. Prior to the construction of the proposed mixed-use building, the current library uses would be relocated: the Business and Career Library would be relocated to the Central Library branch of the BPL, and the Brooklyn Heights branch would be temporarily relocated to the interim site at 443 95 Remsen Street (see Attachment A, “Project Description”). Upon completion of the proposed mixed-use building, the branch library use would occupy up to approximately 21,500 gsf of space within the new mixed-use building. Therefore, there would be no permanent direct displacement associated with the construction of the proposed mixed-use building on the development site, and an assessment of direct business displacement is not warranted.

3. ***Direct Business Displacement: Would the project directly displace a business whose products or services are uniquely dependent on its location, are the subject of policies or plans aimed at its preservation, or serve a population uniquely dependent on its services in its present location? If so, an assessment of direct business displacement is warranted.***

The development site is currently occupied by the Brooklyn Heights branch of the BPL, and does not currently contain any other businesses or institutional uses. As described immediately above, the library uses currently located on the development site would be relocated prior to the construction of the proposed mixed-use building; the Business and Career Library would be permanently relocated to the BPL Central Library, and the branch library space would be temporarily relocated to the interim site at 443 95 Remsen Street. The Business and Career Library facility would be permanently relocated in order to better serve jobseekers and entrepreneurs, many of whom live and work outside the downtown Brooklyn area, as well as to provide a more central location for all Brooklyn residents. The branch library would be temporarily relocated to a site near the existing facility (within an approximately 0.3-mile walking distance), the interim site, so that the temporary facility would be able to continue serving the existing branch's catchment area (see Attachment D, "Community Facilities"). Therefore, the proposed project would not displace any businesses whose products or services are uniquely dependent on their locations, are the subject of policies or plans aimed at its preservation, or serve a population uniquely dependent on their services in their present locations.

4. ***Indirect Displacement due to Increased Rents: Would the project result in substantial new development that is markedly different from existing uses, development, and activities within the neighborhood? Residential development of 200 units or less or commercial development of 200,000 square feet or less would typically not result in significant socioeconomic impacts. For projects exceeding these thresholds, assessments of indirect residential displacement and indirect business displacement are appropriate.***

The proposed project could introduce a residential use in excess of 200 units at the development site; therefore, an assessment of potential indirect residential displacement is warranted. The proposed project would not introduce commercial uses in excess of 200,000 gsf; therefore, an assessment of potential indirect business displacement is not warranted.

5. ***Indirect Business Displacement due to Retail Market Saturation: Would the project result in a total of 200,000 sf or more of retail on a single development site or 200,000 sf or more of region-serving retail across multiple sites? This type of development may have the potential to draw a substantial amount of sales from existing businesses within the study area, resulting in indirect business displacement due to market saturation.***

The proposed project would not introduce retail uses in excess of 200,000 gsf; therefore, an assessment of potential indirect business displacement due to retail market saturation is not warranted.

6. ***Adverse Effects on Specific Industries: Is the project expected to affect conditions within a specific industry? This could affect socioeconomic conditions if a substantial number of workers or residents depend on the goods or services provided by the affected businesses, or if the project would result in the loss or substantial diminishment of a particularly important product or service within the City.***

The proposed project would not result in development warranting an assessment of direct or indirect business displacement; therefore, an assessment of adverse effects on specific industries is not warranted.

Based on the screening assessment presented above, the proposed mixed-use building on the development site warrants an analysis of indirect residential displacement.

STUDY AREA DEFINITION

Based on guidance from the *CEQR Technical Manual*, a ¼-mile socioeconomic study area was selected for this analysis. Because the analysis examines population and income data that are only available on the Census tract-level, the ¼-mile study area was drawn according to tract boundaries; as a result, the ¼-mile study area includes Kings County Census tracts 1, 5.01, 5.02, 9, 11, and 13, and encompasses the area roughly bounded by Middagh Street to the north, Schermerhorn Street to the south, Jay Street to the east, and Willow Street to the west (see **Figure C-1**). The total population of the study area, according to the American Community Survey's (ACS) 2008-2012 five-year estimates, is 18,180¹, and the population expected to be added by planned development projects within the study area by the 2019 analysis year (as described in Attachment B, "Land Use, Zoning, and Public Policy") is 279 residents.² As a result, the total residential population of the study area as analyzed is 18,459.

DATA SOURCES

Population and income data were obtained from the U.S. Census Bureau's 2008–2012 American Community Survey (ACS) and 2000 Census (for income trend data). Real estate data were obtained from the October 2014 Brooklyn Rental Market and 2014 Third Quarter Brooklyn New Development Market reports published by MNS, a real estate brokerage and research firm, and Streeteasy.com.³

C. INDIRECT RESIDENTIAL DISPLACEMENT

As described in the *CEQR Technical Manual*, indirect residential displacement usually results from substantial new development that is markedly different from existing uses and activity in an area, which causes increased property values in the area. Increased property values can lead to increased rents, which can make it difficult for some existing residents to remain in their homes.

The assessment aims to determine whether the proposed mixed-use building on the development site would either introduce a trend or accelerate an existing trend of changing socioeconomic conditions that may have the potential to displace a residential population and substantially change the socioeconomic character of the neighborhood. This assessment follows the guidelines of the *CEQR Technical Manual*.

¹ The ACS collects data throughout the five-year period on an ongoing, monthly basis and asks for respondents' income over the "past 12 months." The 2008-2012 ACS data therefore reflects incomes between 2008 and 2012, while 2010 Census data reflects income over the prior calendar year (2009).

² The average household size for Brooklyn Community District 2—2.01 persons per household—was applied to the number of residential units to be constructed by planned projects in the study area.

³ Streeteasy.com provides aggregated real estate listings from various sources including real estate associations, city records, brokerages, and property owners.



- Project Area
- Socioeconomic Conditions Study Area
- Development Site
- Census Tracts
- Quarter-Mile Radius

0 800 FEET

1. Determine if the expected average incomes of the new population would be higher than the average incomes of the existing population and any new population expected to reside in the study area in the future without the proposed project.

As shown in **Figure C-1**, the ¼-mile socioeconomic study area is roughly bounded by Middagh Street to the north, Schermerhorn Street to the south, Jay Street to the east, and Willow Street to the west. The study area includes portions of the neighborhoods of Brooklyn Heights and Downtown Brooklyn.

Household incomes are high in the study area, reflecting the established residential market in Brooklyn Heights and the emerging, predominantly higher-end residential market in Downtown Brooklyn. As shown in **Table C-1**, the average household income in the study area was \$148,664 in 2008-2012, which was more than double the Brooklyn-wide average of \$67,829 and over 1.75 times higher than the New York City-wide average of \$83,923.

Since 1999, the average household income in the study area has increased by 4.5 percent, while average household incomes in Brooklyn as a whole decreased by 0.4 percent (see **Table C-1**). Average household income decreased by 2.5 percent in New York City as a whole over the same time period.

Table C-1
Average Household Income (1999, 2008–2012)^{1,2}

Area	1999	2008-2012	Percent Change
Study Area ²	\$142,236	\$148,664	4.5%
Manhattan	\$68,130	\$67,829	-0.4%
New York City	\$86,103	\$83,923	-2.5%
Notes: 1. The ACS collects data throughout the period on an on-going, monthly basis and asks for respondents' income over the "past 12 months." The 2008–2012 ACS data therefore reflects incomes over 2008 and 2012, while Census 2000 data reflects income over the prior calendar year (1999). 2. The average household income for both time periods is presented in 2014 dollars using an average of the U.S. Department of Labor's October 2014 Consumer Price Index for the "New York-Northern New Jersey-Long Island Area." 3. Average household income for the study area was estimated based on a weighted average of mean household income for the Census tracts in the study area. Sources: U.S. Census Bureau, 2000 Census, Summary File 3; 2008-2012 American Community Survey; U.S. Department of Labor Bureau of Labor Statistics; AKRF, Inc.			

A breakdown of income distribution further illustrates the differences between household incomes in the ¼-mile study area as compared with Brooklyn and New York City as a whole. As shown in **Table C-2**, approximately 30.6 percent of the study area households had incomes of \$150,000 or more between 2008 and 2012, which is nearly quadruple the percentage in Brooklyn, and over double the percentage in New York City. Compared to Brooklyn and New York City, the study area experienced a higher rate of increase in the percentage of the most affluent portion of households. The study area also had a much lower proportion of households with incomes of less than \$50,000 than in Brooklyn and New York City as a whole. The income distribution in **Table C-2** also reflects the absence of public housing as well as an abundance of non-rent-protected market-rate housing in the ¼-mile study area.

Table C-2
Household Income Distribution (1999, 2008–2012)

Area	Less than \$25,000		\$25,000–\$50,000		\$50,000– \$100,000		\$100,000– \$150,000		\$150,000 or more	
	1999	2008– 2012	1999	2008– 2012	1999	2008– 2012	1999	2008– 2012	1999	2008– 2012
Study Area	16.5%	11.9%	22.1%	11.1%	29.6%	27.9%	15.9%	17.4%	15.9%	30.6%
Brooklyn	40.7%	30.4%	26.5%	23.3%	23.4%	26.5%	6.1%	11.3%	3.3%	8.6%
New York City	34.9%	27.3%	25.7%	21.3%	25.7%	26.8%	7.8%	12.4%	5.9%	12.3%
Notes: 1. The ACS collects data throughout the period on an on-going, monthly basis and asks for respondents' incomes over the "past 12 months." The 2008–2012 ACS data therefore reflects incomes over 2008 and 2012, while Census 2000 data reflects income over the prior calendar year (1999). Sources: U.S. Census Bureau, 2000 Census, Summary File 3; 2008–2012 American Community Survey.										

According to Streeteasy.com, average rental rates for all units in the study area⁴ were approximately \$2,178 per month for studios, \$2,366 for one-bedroom units, \$4,217 for two-bedroom units, and \$5,506 for three-bedroom units; average rental rates for units in newly-developed buildings were approximately \$2,537 for studios, \$3,290 for one-bedroom units, and \$4,695 for two-bedroom units (see **Table C-3**).⁵ Based on these data, and assuming that households spend approximately 30 percent of their annual income on rent, renters of a studio in the study area are estimated to earn \$87,000 (or \$101,000 in a newly-developed building); renters of a one-bedroom apartment earn approximately \$95,000 (or \$132,000 in a new building); renters of a two-bedroom apartment earn approximately \$169,000 (or \$188,000 in a new building); and renters of a three-bedroom apartment earn approximately \$220,000 (see **Table C-3**).⁶

⁴ While the market-rate residential component introduced by the proposed project is expected to be for-sale condominiums, current rental rates are presented in the analysis because they provide a more accurate estimate of monthly housing costs using the U.S. Department of Housing and Urban Development (HUD) 30 percent housing cost assumption (see footnote below). The rental market is a reasonable proxy for the overall residential housing market of an area.

⁵ Based on a search for all rental units and rental units in new developments in Brooklyn Heights and Downtown Brooklyn, conducted via Streeteasy.com on October 17, 2014. Data accounts for all units listed at the time of the search, as well as those listed within the preceding 90 days. There were no three-bedroom units in newly-developed buildings that fit these criteria; as a result, no data is presented for that category.

⁶ The 30 percent housing cost assumption is based on U.S. Department of Housing and Urban Development (HUD) definition of affordable housing. According to HUD, families who pay more than 30 percent of their income for housing are cost burdened.

Table C-3

Imputed Household Income by Unit Type/Average Rental Rates

	Studio		1BR		2BR		3BR	
	All Units	New Buildings	All Units	New Buildings	All Units	New Buildings	All Units	New Buildings
Study Area average rental rates	\$2,178	\$2,537	\$2,366	\$3,290	\$4,217	\$4,695	\$5,506	n/a
Household Income¹	\$87,133	\$101,489	\$94,624	\$131,613	\$168,696	\$187,806	\$220,236	n/a
Notes: Household incomes were imputed using the HUD 30% guideline described above.								
Sources: Streeteasy.com								

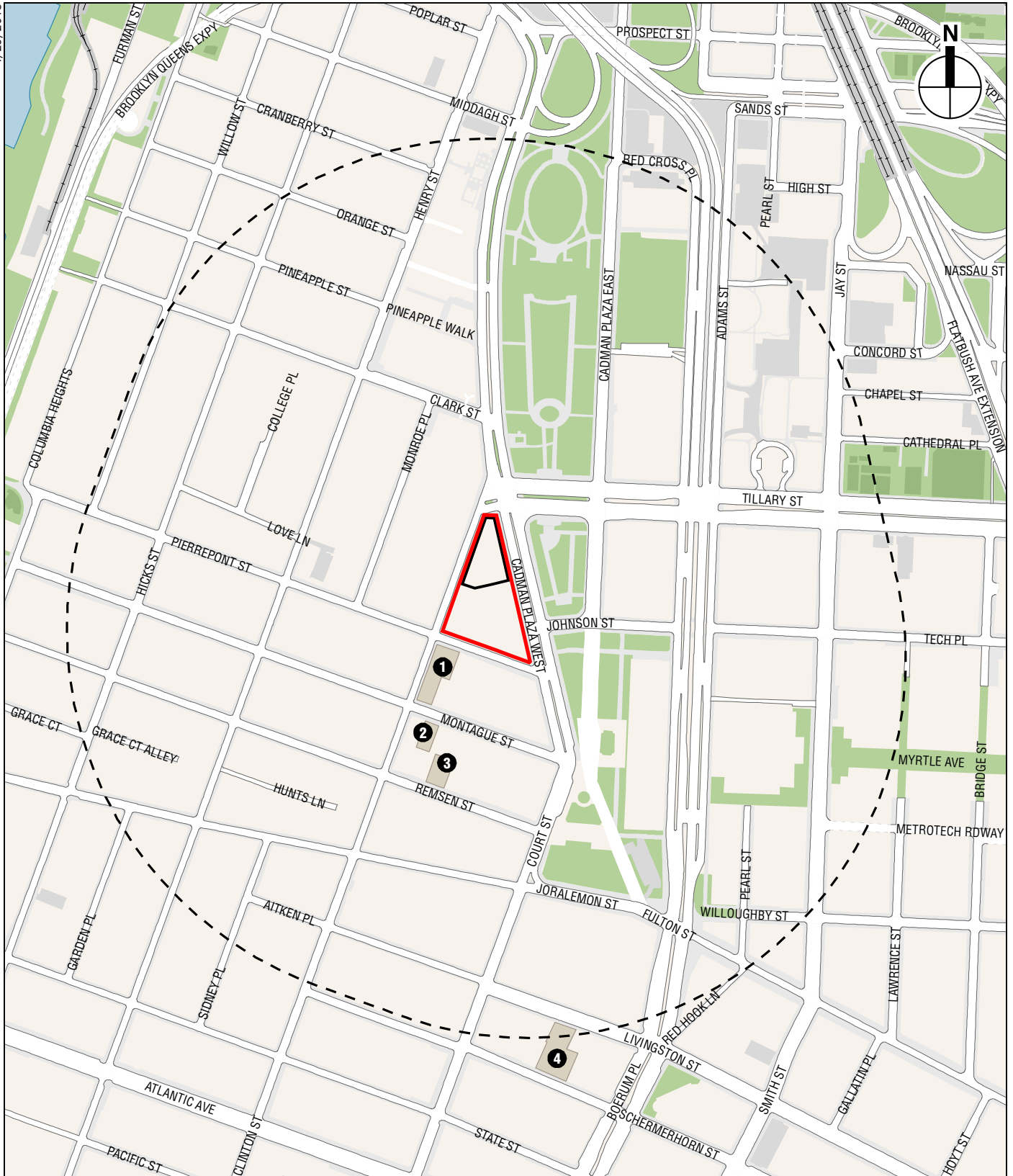
Residential development is expected to continue in the future with the proposed project. By the 2019 analysis year, planned developments will introduce new residential units to the study area, with 139 units planned within the ¼-mile study area (see **Table C-4** and **Figure C-2**). The majority of new residential developments will be market-rate units and will continue the trend of increasing incomes in the study area.

Table C-4

Planned New Residential Developments within ¼-Mile Study Area

Ref. No.	Address	Block	Lot	Dwelling Units (DUs) ¹
1	177 Montague Street	244	17	12
2	172 Montague Street	250	28	62
3	153 Remsen Street	250	16	60
4	71-79 Schermerhorn Street	269	9	5
Notes:				
1. Proposed number of DUs, according to Department of Buildings filings; subject to change.				
Sources: NYC Department of Buildings; AKRF, Inc.				

Assuming for purposes of analysis a unit distribution for the proposed project that is similar to that currently found in the study area, 53 of the proposed mixed-use building's new units would be studios, 138 would be one-bedroom units, 79 would be two-bedroom units, and 38 would be three-bedroom units (see **Table C-5**). Based on the rent-level data for newly-developed buildings described above, the weighted mean household income for the proposed project would be \$147,776, which is nearly the same as the average household income for the study area, \$148,664.



-  Project Area
-  Development Site
-  Study Area (1/4-Mile Boundary)
-  No Build Project

0 500 FEET

Planned New Residential Developments
within 1/4-Mile Study Area
Figure C-2

280 CADMAN PLAZA WEST

Table C-5

Proposed Project Unit Distribution and Household Incomes

	Studio	1BR	2BR	3BR	Total
Study Area Distribution¹	17.2%	44.8%	25.6%	12.3%	100.0%
Number of Units	53	138	79	38	308
Imputed Household Income²	\$101,489	\$131,613	\$187,806	\$187,806	\$147,776
Notes: 1. The distribution of unit sizes for existing buildings in the study area (according to the ACS 2008-2012 five-year estimates) was applied to the proposed project. 2. Household incomes were imputed using the HUD 30% guideline described above.					
Sources: U.S. Census Bureau American Community Survey, 2008-2012 five-year estimates					

CONCLUSION

The ¼-mile study area has already experienced a readily observable trend toward increasing rents and new market rate development, and planned residential development is expected to continue trends of increasing incomes in the area. The estimated income of the project-generated population at the development site is expected to be similar to the current average in the ¼-mile study area; as a result, the expected average incomes of the new population would not be higher than the average incomes of the existing population and any new population expected to reside in the study area in the future without the proposed project.

Therefore, the proposed project is not expected to introduce or accelerate a trend of changing socioeconomic conditions. According to *CEQR Technical Manual* guidelines, further analysis is not warranted, and the proposed project would not result in any significant adverse impacts due to indirect residential displacement. *

A. INTRODUCTION

This attachment assesses the potential impacts of the proposed project on community facilities and services. The 2014 *CEQR Technical Manual* defines community facilities as public or publicly funded schools, child care centers, libraries, health care facilities, and fire and police protection services. CEQR methodology focuses on direct effects on community facilities, such as when a facility is physically displaced or altered, and on indirect effects, which could result from increased demand for community facilities and services generated by new users such as the new population that would result from the proposed project.

The proposed project would result in a new mixed-use development containing: an approximately 21,500-gsf improved branch library; approximately 19,800 gsf of community facility use; approximately 650 gsf of retail use; and approximately 308,082 gsf of residential use (for conservative analysis purposes assumed to be 308 units). The proposed project would temporarily displace the Brooklyn Heights branch of the Brooklyn Public Library (BPL). During construction the Brooklyn Heights branch library (the branch library) would be housed in a temporary facility at ~~443~~ 95 Remsen Street until the new facility would be constructed and operable on the development site, which is anticipated to be in 2019. Because the proposed project would physically alter a community facility and would introduce a new residential population which could result in increased demand for community facilities and services, an assessment was conducted to determine whether the proposed project would result in any significant adverse impacts to community facilities.

PRINCIPAL CONCLUSIONS

The analysis in this attachment finds that the proposed mixed-use building on the development site would not result in significant adverse impacts on community facilities.

B. PRELIMINARY SCREENING

This analysis of community facilities has been conducted in accordance with *CEQR Technical Manual* methodologies and the latest data and guidance from agencies such as the New York City Department of Education (DOE), and the New York City Department of City Planning (DCP).

The purpose of the preliminary screening is to determine whether a community facilities assessment is required. As recommended by the *CEQR Technical Manual*, a community facilities assessment is warranted if a project has the potential to result in either direct or indirect effects on community facilities. 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 that the physical change may have on that service delivery. New population added to an area as a result of a project would use existing services, which may result in potential “indirect” effects on service delivery. Depending

on the size, income characteristics, and age distribution of the new population, there may be effects on public schools, libraries, or child care centers.

DIRECT EFFECTS

The proposed project would not displace or otherwise directly affect any public schools, child care centers, health care facilities, or police and fire protection services facilities. The proposed project would temporarily relocate the Brooklyn Heights branch of the BPL during construction, when it would be housed in a temporary facility at 443 95 Remsen Street until the new facility would be completed on the development site. Since the proposed project would temporarily relocate the branch library, an analysis of direct effects on libraries is provided below (see Section C, “Direct Effects on Libraries”).

INDIRECT EFFECTS

The *CEQR Technical Manual* provides thresholds for guidance in making an initial determination of whether a detailed analysis is necessary to determine potential impacts due to indirect effects on community facilities resulting from the proposed mixed-use building on the development site (community facility analyses of off-site developments are provided in Attachment M, “Analysis of the Proposed Off-Site Affordable Housing”). **Table D-1** lists those analysis thresholds for each community facility type. If a project exceeds the threshold for a specific facility type, a more detailed analysis is warranted. A preliminary screening analysis was conducted to determine if the proposed project would exceed any of the analysis thresholds. Based on that screening, it was determined that a detailed analysis is warranted for indirect effects on public elementary and intermediate schools (see Section D, “Indirect Effects on Public Elementary and Intermediate Schools”).

Table D-1
Preliminary Screening Analysis Criteria

Community Facility	Threshold For Detailed Analysis
Public schools	More than 50 elementary/intermediate school or 150 high school students
Libraries	Greater than 5 percent increase in ratio of residential units to libraries in borough
Health care facilities (outpatient)	Introduction of sizeable new neighborhood where none existed before ¹
Child care centers (publicly funded)	More than 20 eligible children based on number of low- and low/moderate-income units by borough
Fire protection	Introduction of sizeable new neighborhood where none existed before ¹
Police protection	Introduction of sizeable new neighborhood where none existed before ¹
Notes:	¹ The <i>CEQR Technical Manual</i> cites the Hunters' Point South project as an example of a project that would introduce a sizeable new neighborhood where none existed before. The Hunters' Point South project would introduce approximately 5,000 new residential units to the Hunters' Point South waterfront in Long Island City, Queens.
Source:	2014 <i>CEQR Technical Manual</i> .

PUBLIC SCHOOLS

The *CEQR Technical Manual* recommends conducting a detailed analysis of public schools if a proposed action would generate more than 50 elementary/intermediate school students and/or more than 150 high school students. The proposed project would introduce approximately 308 residential units to the development site. Based on the proposed development of approximately 308 residential units and the student generation rates provided in the *CEQR Technical Manual* (0.29 elementary, 0.12 intermediate, and 0.14 high school students per housing unit in Brooklyn), the proposed project's market rate units would generate approximately 89 elementary school students, 37 intermediate school students, and 43 high school students. This number of

students warrants a detailed analysis of the proposed development's potential effects on elementary and intermediate schools. The number of high school students added by the proposed project would not exceed the *CEQR Technical Manual* threshold warranting an analysis of potential effects on high schools.

LIBRARIES

Potential impacts on libraries can result from an increased user population. According to the *CEQR Technical Manual*, a proposed action that results in a 5 percent increase in the average number of residential units served per branch, which is 734 residential units in Brooklyn, may cause a significant impact on library services and require further analysis. The proposed project would introduce approximately 308 residential units, which would include 619 residents¹, to the development site. Therefore, the proposed project does not approach this threshold, and a detailed analysis of libraries is not warranted. An analysis of direct effects on the Brooklyn Heights branch of the Brooklyn Public Library is provided below.

CHILD CARE CENTERS

According to the *CEQR Technical Manual*, if a proposed action would add more than 20 children eligible for child care to the study area's child care facilities, a detailed analysis of its impact on publicly funded child care facilities is warranted. This threshold is based on the number of low-income and low/moderate-income units introduced by a proposed action. Low-income and low/moderate-income affordability levels are intended to approximate the financial eligibility criteria established by the Administration for Children's Services, which generally corresponds to 200 percent of the Federal Poverty Level or 80 percent of area median income (AMI). In Brooklyn, projects introducing 110 or more low- to moderate-income units would introduce 20 or more children eligible for child care services. As there would not be any affordable residential units on the development site, the proposed mixed-use building would not generate any children eligible for publicly funded child care. Therefore, a detailed assessment is not warranted.

HEALTH CARE FACILITIES

Health care facilities include public, proprietary, and nonprofit facilities that accept government funds (usually in the form of Medicare and Medicaid reimbursements) and that are available to any member of the community. Examples of these types of facilities include hospitals, nursing homes, clinics, and other facilities providing outpatient health services.

According to the *CEQR Technical Manual*, if a proposed action would create a sizeable new neighborhood where none existed before, there may be increased demand on local public health care facilities, which may warrant further analysis of the potential for indirect impacts on outpatient health care facilities. The proposed project would not result in the creation of a sizeable new neighborhood where none existed before, as the proposed project is located within the well-established Brooklyn Heights neighborhood and would only result in 308 new market rate units. Therefore, a detailed analysis of indirect effects on health care facilities is not warranted.

¹ Assumption of 619 residents is based on 2010 Census average household size of 2.01 for Brooklyn CD 2.

POLICE AND FIRE SERVICES

The *CEQR Technical Manual* recommends detailed analyses of impacts on police and fire service in cases where a proposed action would affect the physical operations of, or direct access to and from, a precinct house or fire station, or where a proposed action would create a sizeable new neighborhood where none existed before. The proposed project would not result in these direct effects on either police or fire services, nor would it create a sizeable new neighborhood where none existed before; therefore, no further analysis is warranted.

C. POTENTIAL DIRECT EFFECTS ON LIBRARIES

According to the *CEQR Technical Manual*, direct effects on community facilities should be assessed for projects that would permanently or temporarily physically alter or displace a community facility. The following assessment considers whether the proposed temporary relocation and subsequent improvement of the branch library would have the potential to result in significant adverse impacts to libraries.

The existing branch library includes an estimated 32,431 gsf of usable space, including 17,471 gsf of branch library space and 14,960 gsf of Business and Career Library space. The remaining 26,715 gsf of space in the existing building are inaccessible to the public and are comprised of mechanical and utility space with storage containing uncatalogued books and older office supplies that would have otherwise been discarded; BPL does not define this space as branch library use. According to BPL, the building has an inefficient floor plan, with approximately 46 percent of the space unavailable for public use.

The branch library building is also aging and has more than \$9 million in unmet capital needs, according to the BPL. The branch library was built in 1962 and requires numerous repairs, including the replacement of its non-functioning HVAC system, boiler, roof and roof bulkhead. It also requires new elevators and a machine room, lighting upgrades, a building automation system, safety and security enhancements, and site drainage and waterproofing.

In the future without the proposed project (the “No Action condition”), the estimated 17,471-gsf branch library would remain on the library site, and the Business and Career Library will be permanently relocated to the BPL Central Library at 10 Grand Army Plaza in the Prospect Heights neighborhood. The Business and Career Library will be relocated in order to better serve jobseekers and entrepreneurs, many of whom live and work outside the downtown Brooklyn area, as well as to provide a more central location for all Brooklyn residents. Users will be able to take advantage of the extended hours of service available at the Central Library, as well as the interdisciplinary resources and modern work and study spaces at this location. The relocation will also eliminate collection overlap through shared collection areas and the creation of a unified depository of government documents, and would allow BPL to concentrate specialized database acquisitions in one location.

The space currently associated with the Business and Career Library would be unprogrammed space with no additional (dedicated) BPL staffing, with its use to be determined. BPL would be unable to provide programming for this additional space due to the prohibitive staffing cost. Given that the branch library would provide the same services and functions as it does today, there is no anticipation of an increase in branch library visitation in the No Action condition.

In the future with the proposed project, prior to construction at the development site the Business and Career Library would be permanently relocated to the BPL Central Library, and the branch library would be relocated to a temporary, approximately 7,500-gsf facility (the “interim site”) at

443 95 Remsen Street. In order to minimize disruption to library services, the interim site would be ready for occupancy by the time the branch library is closed; there would be an estimated one-week period to facilitate the relocation of books, furniture, computers, staff and services, during which no branch library services would be available. The branch library would be relocated to the interim site in 2016 and the branch library would return to the development site during the last phase of construction (finishing), in late 2018 or early 2019. Therefore, the branch library would be located at the interim site for up to 4 years.

While the interim site would be smaller than the 17,471 gsf that the branch library currently occupies, the size would be similar to that of a typical permanent branch library. The interim site library would provide the primary services offered at a permanent branch library, including: a broad range of popular library materials, including books, DVDs, and periodicals; a customer service station; public computers and wireless internet; public seating; program space and programs for users of all ages as well as for public meetings; and a dedicated children's reading and recreation area. In addition, the interim site would be located near to the existing branch library, and would therefore be able to serve the same catchment area. Therefore, branch library service would not be disrupted while the branch library is in the interim site. Branch library service would only be disrupted for approximately one week prior to occupancy of the interim site, which would be an inconvenience but would not be expected to result in any significant adverse impacts.

Once construction is complete, the proposed mixed-use development would include approximately 21,500 gsf of space for an improved branch library. The improved library would be among the largest neighborhood libraries in Brooklyn, and is expected to better serve its catchment area by providing new collections, technology, and extensive programs.

In addition, \$52 million from the sale of the library site would be available for the fit-out of the improved library and would be invested in neighborhood branches with urgent capital needs, resulting in a significant reduction in deferred maintenance across the Brooklyn Public Library system. Therefore, the proposed improved library would not be expected to result in any adverse effects on the service delivery of the library. Instead, the proposed project would replace the aging structure on Cadman Plaza West with a brand new facility that would be 5,600 gsf larger than the existing facility (not accounting for the Business and Career Library space), and would provide funding for much needed improvements to other BPL libraries.

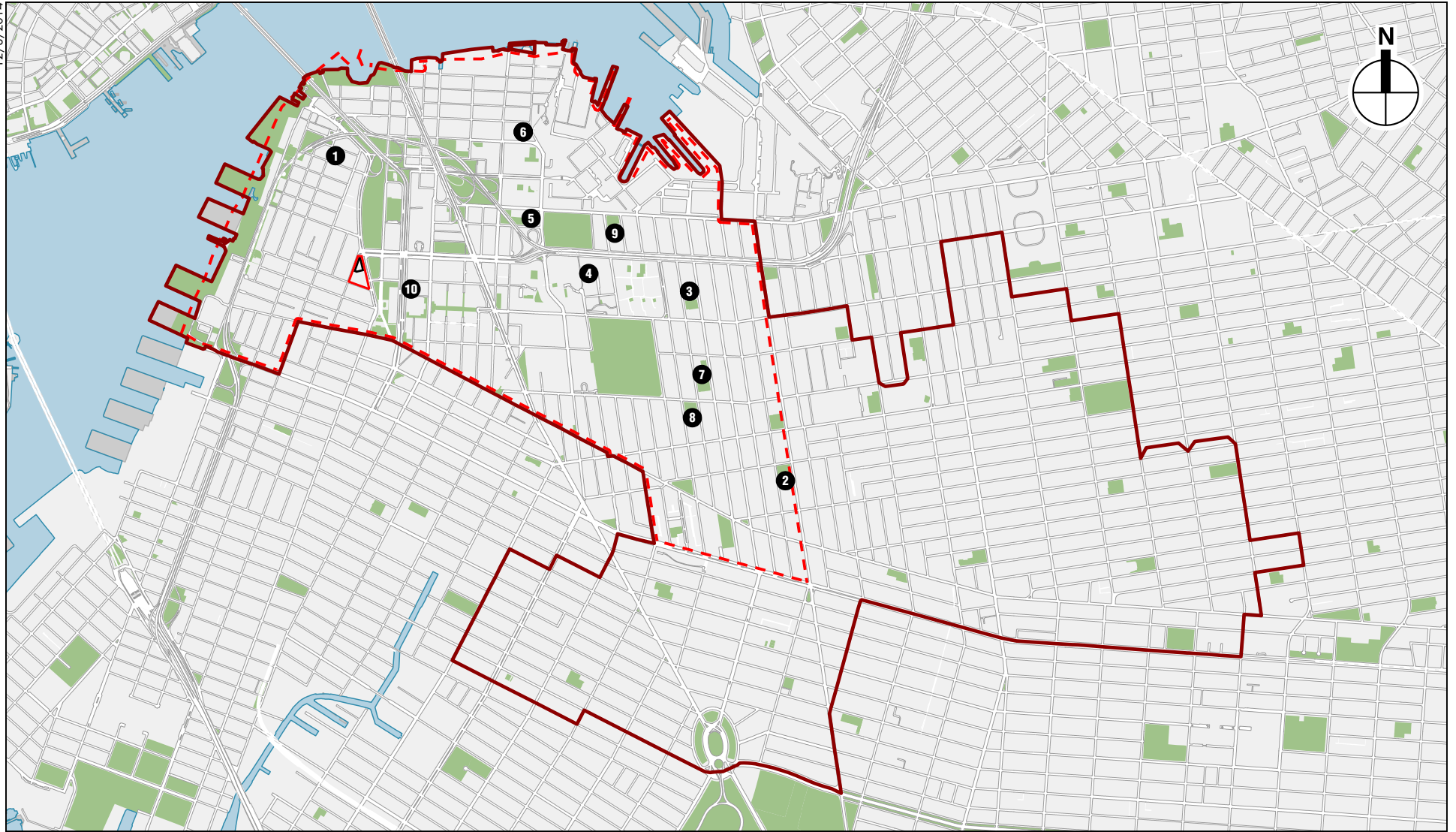
For these reasons, the proposed temporary relocation and permanent improvement of the branch library would not result in any significant adverse impacts to libraries.

D. POTENTIAL INDIRECT EFFECTS ON PUBLIC ELEMENTARY AND INTERMEDIATE SCHOOLS

METHODOLOGY

This section presents an assessment of the potential effects of the proposed project on public elementary and intermediate schools serving the development site. Following the methodologies in the *CEQR Technical Manual*, the study area for the analysis of elementary and intermediate schools is the school district's "sub-district" (also known as "regions" or "school planning zones") in which the project is located. The development site is located in Sub-district 2 of Community School District (CSD) 13 (see **Figure D-1**).

In accordance with the *CEQR Technical Manual*, this schools analysis uses the most recent DOE data on school capacity, enrollment, and utilization rates for elementary and intermediate



- Project Area
- Development Site
- 1 Public School (see Table D-1 for reference)
- Community School District (CSD) Boundary
- CSD Sub-District Boundary

280 CADMAN PLAZA WEST

0 2,000 FEET

Elementary and Intermediate Public Schools
Figure D-1

schools in the sub-district study area and New York City School Construction Authority (SCA) projections of future enrollment. Specifically, the existing conditions analysis uses data provided in the DOE's *Utilization Profiles: Enrollment/Capacity/Utilization, 2013-2014* edition. Future conditions are then predicted based on SCA enrollment projections and data obtained from SCA's Capital Planning Division on the number of new housing units and students expected at the sub-district level. The future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential projects in the schools' study area to DOE's projected enrollment, and then comparing that number with projected capacity. DOE does not include charter school enrollment in its enrollment projections. DOE's enrollment projections for years 2011 through 2021, the most recent data currently available, were obtained from DCP. These enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential projects planned for the study area. Therefore, the estimated student population from the other new projects expected to be completed within the study area, as calculated by SCA's Capital Planning Division, have been obtained from DCP, and are added to the projected enrollment to ensure a more conservative prediction of future enrollment and utilization. In addition, new capacity from any new school projects identified in the DOE Five-Year Capital Plan are included if construction has begun or if deemed appropriate to include in the analysis by the lead agency and the SCA.

The effect of the new students introduced by the proposed project on the capacity of schools within the study areas is then evaluated. According to the *CEQR Technical Manual*, a significant adverse impact may occur if a proposed project would result in both of the following conditions:

1. A utilization rate of the elementary and/or intermediate schools in the sub-district study area that is equal to or greater than 100 percent in the With Action condition; and
2. An increase of five percentage points or more in the collective utilization rate between the No Action and With Action conditions.

EXISTING CONDITIONS

As shown in **Table D-2**, there are eight elementary schools and seven middle schools in Sub-district 2/CSD 13. Elementary schools in the sub-district are currently operating at 98 percent utilization, with a surplus of 62 seats. Intermediate schools are currently operating at 63 percent utilization, with a surplus of 1,094 seats.

Table D-2

**Public Elementary and Intermediate Schools Serving the Study Area,
Enrollment and Capacity Data, 2013-2014 School Year**

Map No. ¹	Name	Address	Enrollment	Capacity	Available Seats	Utilization
Elementary Schools						
Sub-district 2 of CSD 13						
1	PS 8 Robert Fulton School ²	37 Hicks Street	742	524	-218	142%
2	PS 11 Purvis J. Behan Elementary School	419 Waverly Avenue	732	727	-5	101%
3	PS 46 Edward C. Blum	100 Clermont Avenue	417	401	-16	104%
4	PS 67 Charles A. Dorsey School	51 Saint Edwards Street	276	303	27	91%
5	PS 287 Bailey K. Ashford School	50 Navy Street	215	397	182	54%
6	PS 307 Daniel Hale Williams School	209 York Street	370	413	43	90%
7	PS 20 Clinton Hill	225 Adelphi Street	321	403	82	80%
7	IS 492 Academy of Arts and Letters (PS)	225 Adelphi Street	206	173	-33	119%
Sub-district 2 of CSD 13 Total			3,279	3,341	62	98%
Intermediate Schools						
Sub-district 2 of CSD 15						
1	IS 8 Robert Fulton School ²	105 Johnson Street	106	284	178	37%
3	PS 46 For Greene Preparatory Academy	100 Clermont Avenue	257	261	4	98%
6	IS 313 Satellite West Middle School	209 York Street	119	363	244	33%
7	IS 492 Academy of Arts and Letters (IS)	225 Adelphi Street	284	239	-45	119%
8	IS 113 Ronald Edmonds Learning Center	300 Adelphi Street	718	1,368	650	52%
9	IS 265 Dr. Susan S. McKinney Secondary School of the Arts	101 Park Avenue	142	198	56	72%
10	IS 527 Urban Assembly Institute of Math and Science for Young Women	283 Adams Street	223	230	7	97%
Sub-district 2 of CSD 13 Total			1,849	2,943	1,094	63%
Notes: ¹ See Figure D-1 ² As the PS and IS components for PS 8 are located in different buildings, split percentages were not applied to these schools.						
Sources: DOE Utilization Profiles: Enrollment/Capacity/Utilization, 2013-2014.						

FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed project (the No Action condition), enrollment at elementary and intermediate schools in the study area is expected to increase. As described above, this analysis accounts for increases in enrollment predicted in the DOE enrollment projections. Because these enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential projects planned for the study area, the estimated student populations from the other new projects expected to be completed within the study area, as calculated by SCA's Capital Planning Division, have been obtained from DCP, and are added to the projected enrollment to ensure a more conservative prediction of future enrollment and utilization..

The latest available DOE enrollment projections for Sub-district 2/CSD 13 project an increase to elementary and intermediate enrollment through 2021. These enrollment increases form the baseline projected enrollment in the No Action condition, shown in **Table D-3** in the column titled "Projected Enrollment in 2019." The students introduced by other specific No Action projects are added to this baseline projected enrollment.

To estimate enrollment from specific No Action projects, the SCA No Action student numbers for Sub-district 2/CSD 13 (derived from the SCA's "Projected New Housing Starts") were used. As shown in the column titled "Students Introduced by Residential Projects in the Future Without the Proposed Project" in **Table D-3**, approximately 1,009 elementary and 272 intermediate school students are expected to be added to the sub-district by 2019.¹

According to DOE's *2015-2019 Proposed Five-Year Capital Plan—February 2014*, there is one change to intermediate school capacity in Sub-district 2/CSD 13 that is currently anticipated. One new school building, I.S. 611, with a total capacity of 333 seats is currently under construction at 60 Water Street. However, since construction of the school has not yet been completed, it is not included in the quantitative analysis.

As shown in **Table D-3**, elementary schools in the sub-district study area would operate over capacity (139 percent utilization) with a deficit of 1,301 seats in the future without the proposed project. Intermediate schools would operate under capacity with a surplus of 598 seats (80 percent utilization).

Table D-3
Estimated Public Elementary and Intermediate School
Enrollment, Capacity, and Utilization:
Future Without the Proposed Project

Study Area	Projected Enrollment in 2019 ¹	Students Introduced by Residential Projects in the Future Without the Proposed Project ²	Total No Action Condition Enrollment	Capacity	Available Seats	Utilization
Elementary Schools						
Sub-district 2 of CSD 13	3,633	1,009	4,642	3,341	-1,301	139%
Intermediate Schools						
Sub-district 2 of CSD 13	2,073	272	2,345	2,943	598	80%
Notes: ¹ Elementary and intermediate school enrollment in the sub-district study area in 2019 was calculated by applying SCA supplied percentages for the sub-district to the relevant district enrollment projections. For Sub-district 2/CSD 13, the district's 2019 elementary enrollment projection of 8,504 was multiplied by 42.72 percent. The sub-district's intermediate enrollment projection of 3,291 was multiplied by 63.00 percent. ² SCA <i>Projected New Housing Starts as Used in 2012-2021 Enrollment Projection 2010-2014 Capital Plan</i> , sub-district level data obtained from DCP.						
Sources: DOE Enrollment Projections (Actual 2011, Projected 2012-2021); DOE, <i>Utilization Profiles: Enrollment/Capacity/Utilization, 2013-2014</i> , DOE <i>2015-2019 Proposed Five-Year Capital Plan, February 2014</i> ; School Construction Authority.						

PROBABLE IMPACTS OF THE PROPOSED PROJECT

The proposed project would introduce approximately 308 residential units to the development site. Based on public school student generation rates in the *CEQR Technical Manual*, these units could introduce approximately 89 elementary students and 37 intermediate school students to Sub-district 2/CSD 13. With those students, the total elementary school enrollment of Sub-district 2/CSD 13 would increase to 4,731, with a deficit of 1,390 seats (see **Table D-4**). The total intermediate school enrollment of Sub-district 2/CSD 13 would increase to 2,382, with a

¹ SCA *Projected New Housing Starts as Used in 2012-2021 Enrollment Projection 2010-2014 Capital Plan*, sub-district level data obtained from DCP.

surplus of 561 seats. Therefore, the elementary schools in Sub-district 2/CSD 13 would increase to 141 percent utilization and the intermediate schools would increase to 81 percent utilization.

As noted above, a significant adverse impact may occur if a proposed project would result in both of the following conditions: (1) a utilization rate of the elementary or intermediate schools in the sub-district study area that is equal to or greater than 100 percent in the future without the proposed project; and (2) an increase of five percentage points or more in the collective utilization rate between the future without and the future with the proposed project conditions.

Table D-4

Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization:
Future With the Proposed Project

Study Area	No Action Enrollment	Students Introduced by the Proposed Project	Total With Action Enrollment	Capacity	Available Seats	Utilization	Change in Utilization Compared with No Action
Elementary Schools							
Sub-district 2 of CSD 13	4,642	89	4,731	3,341	-1,390	141%	2.7%
Intermediate Schools							
Sub-district 2 of CSD 13	2,345	37	2,382	2,943	561	81%	1.3%
Sources: DOE Enrollment Projections (Actual 2011, Projected 2012-2021); DOE, <i>Utilization Profiles: Enrollment/Capacity/Utilization, 2013-2014</i> , DOE 2015-2019 Proposed Five-Year Capital Plan, February 2014; School Construction Authority.							

Although elementary schools in the sub-district would continue to operate with a shortfall of seats in the future with the proposed project, the increase in utilization attributable to the proposed project would be approximately 2.7 percent, which is below the 5 percent *CEQR Technical Manual* threshold for a significant adverse impact. The increase in utilization of intermediate schools attributable to the proposed project would be approximately 1.3 percent, which would also be below the 5 percent *CEQR Technical Manual* threshold for a significant adverse impact. In addition, the utilization rate for intermediate schools would remain below 100 percent in the future with the proposed project. Therefore, the proposed project would not result in a significant adverse impact on elementary or intermediate schools. *

A. INTRODUCTION

The proposed project would introduce new residents to the development site, which is located at 280 Cadman Plaza West, creating new demands for open space in the area. Because the proposed project would add a new residential population, this attachment examines the potential impacts of the proposed project on open space resources in accordance with the 2014 *CEQR Technical Manual*. Specifically, the attachment examines the potential for the proposed project to have direct effects on nearby publicly accessible open spaces, such as eliminating or altering a public open space, as well as the potential for indirect effects created by changes in demand for and use of the area's open spaces. The analysis inventories the condition and use of open spaces within a ½-mile radius of the project area and addresses potential impacts on open space facilities both quantitatively and qualitatively.

As part of the proposed project the developer proposes to construct 115 dwelling units (DUs)—all of which would be designated as affordable—at two off-site locations within the Clinton Hill neighborhood of Brooklyn. An open space analysis for these two sites is provided in Attachment M, “Analysis of the Proposed Off-Site Affordable Housing.”

PRINCIPAL CONCLUSIONS

This analysis concludes that the proposed project would not result in any significant adverse impacts on open spaces.

B. METHODOLOGY

DIRECT EFFECTS ANALYSIS

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. A proposed project can also directly affect an open space by enhancing its design or increasing its accessibility to the public. The direct effects analysis is included in the “Probable Impacts of the Proposed Project” portion of Section C, “Preliminary Assessment.”

INDIRECT EFFECTS ANALYSIS

Following the methodology of the *CEQR Technical Manual*, indirect open space impacts 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 existing or 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 project area has not been identified as either underserved or well-served, the threshold of 200 residents and 500 workers was applied in this analysis.

The proposed project would result in 308 residential units on the development site and introduce an estimated 619 residents to the surrounding area.¹ Because the proposed project would generate more than 200 residents, an open space assessment is warranted. The proposed project would also increase the number of workers in the surrounding area; however, since the proposed project would not approach the CEQR threshold of 500 workers, an assessment of the effects of new workers on open space resources is not warranted. 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 preliminary assessment indicates the need for further analysis, a detailed analysis of open space should be performed.

The indirect effects analysis begins with an assessment to clarify the degree to which an action would affect open space and the need for further analysis. The action's effects are based on 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 2.000 acres of active open space and 0.500 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 2.500 acres per 1,000 residents, a greater percentage of change (more than 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, depending on the area of the City.

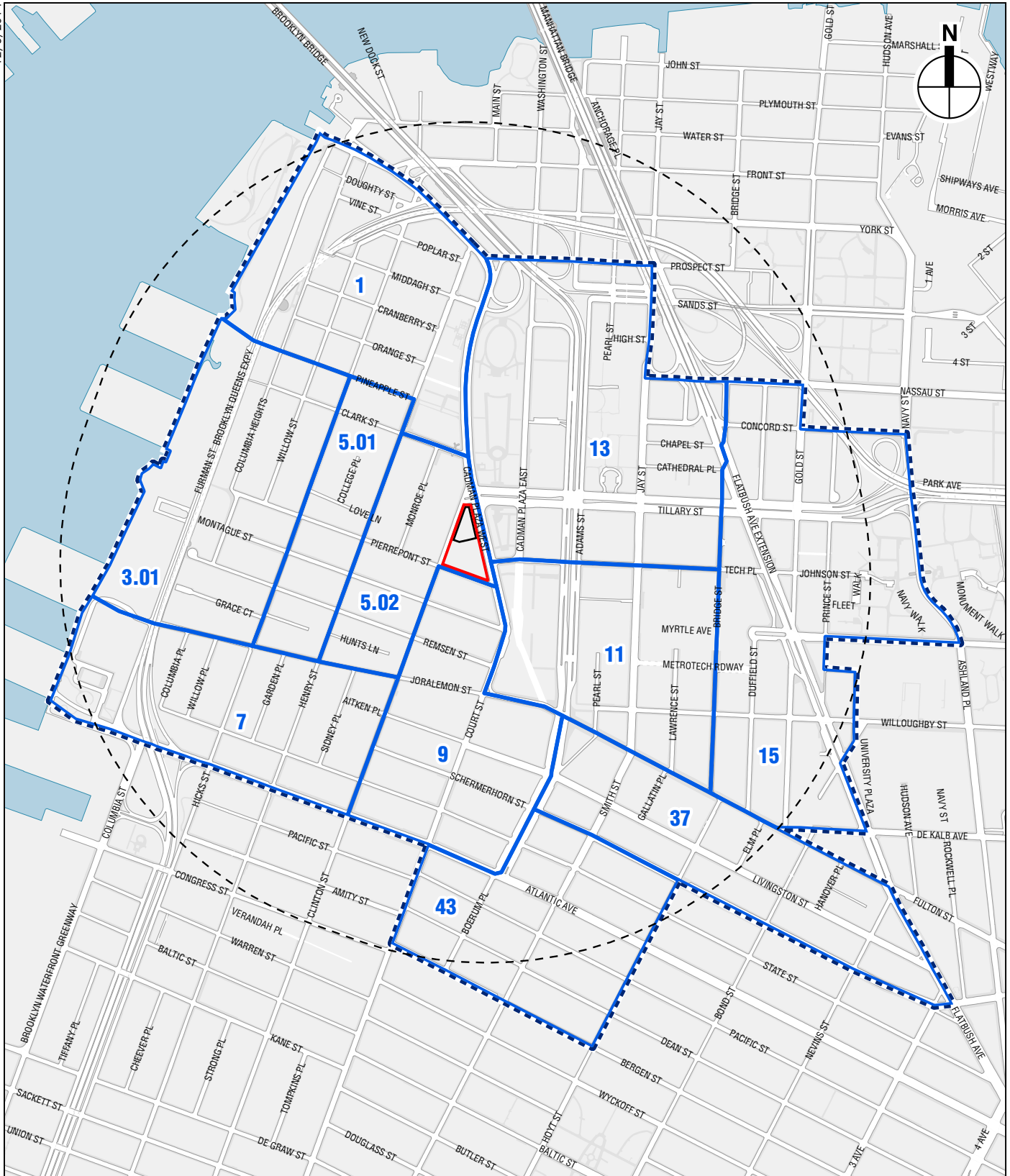
In addition to the quantitative factors cited above, the *CEQR Technical Manual* also recommends consideration of qualitative factors in assessing the potential for open space impacts. These include the availability of nearby destination resources, the beneficial effects of new open space resources provided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

STUDY AREA

The *CEQR Technical Manual* recommends establishing study area boundaries as the first step in an open space analysis. Residents use both passive and active open spaces and are assumed to travel up to ½ mile to reach neighborhood recreational spaces. Thus, for a project that would add substantial residential populations, there should be an analysis of the project's effects on active and passive open spaces located within a ½ mile of the project area. Therefore, as recommended in the *CEQR Technical Manual*, a ½-mile residential study area is used in this analysis.

The study area for the proposed project was adjusted to include all census tracts that fall at least 50 percent within a ½-mile radius around the development site and project area. **Figure E-1** shows all census tracts included in the residential study area.

¹ Based on the 2010 Census, an average household size of 2.01 persons per household for Community District 2 was applied to the analyzed number of units for the proposed project.



- Project Area
- Development Site
- Study Area (Half-mile boundary)
- Residential Study Area Boundary
- Census Tracts

280 CADMAN PLAZA WEST

Open Space Study Area
Figure E-1

OPEN SPACE USER POPULATIONS

Existing Conditions

Data were compiled from the 2010 Census for the census tracts in the residential study area to determine the number of residents within the study area.

The Future Without the Proposed Project

Several new developments are anticipated to be completed in the open space study area by 2019. The residential population in the future without the proposed project was estimated by applying the average household size of 2.01 persons per household for Community District (CD) 2 to the number of new DUs added by the expected developments in the study area. These development projects will result in an estimated total of 14,249 new residents in the study area.

Probable Impacts of the Proposed Project

The proposed project would introduce approximately 308 residential units on the development site. Therefore, using the average household size of 2.01, the proposed project would be expected to introduce approximately 619 residents to the development site 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 (DPR), published environmental impact statements (EISs) for recent projects in or near the study area, and field visits conducted in October 2014.

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 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 future without the proposed project.

ADEQUACY OF OPEN SPACE RESOURCES

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

- A City-wide 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. PRELIMINARY ASSESSMENT

A preliminary assessment of open space consists of calculating total population, tallying the open space acreage within the area, and comparing the open space ratios for the future without and with the proposed project.

EXISTING CONDITIONS

STUDY AREA POPULATION

Based on 2010 Census data, the ½-mile open space study area has a population of approximately 32,165 residents (see **Table E-1**).

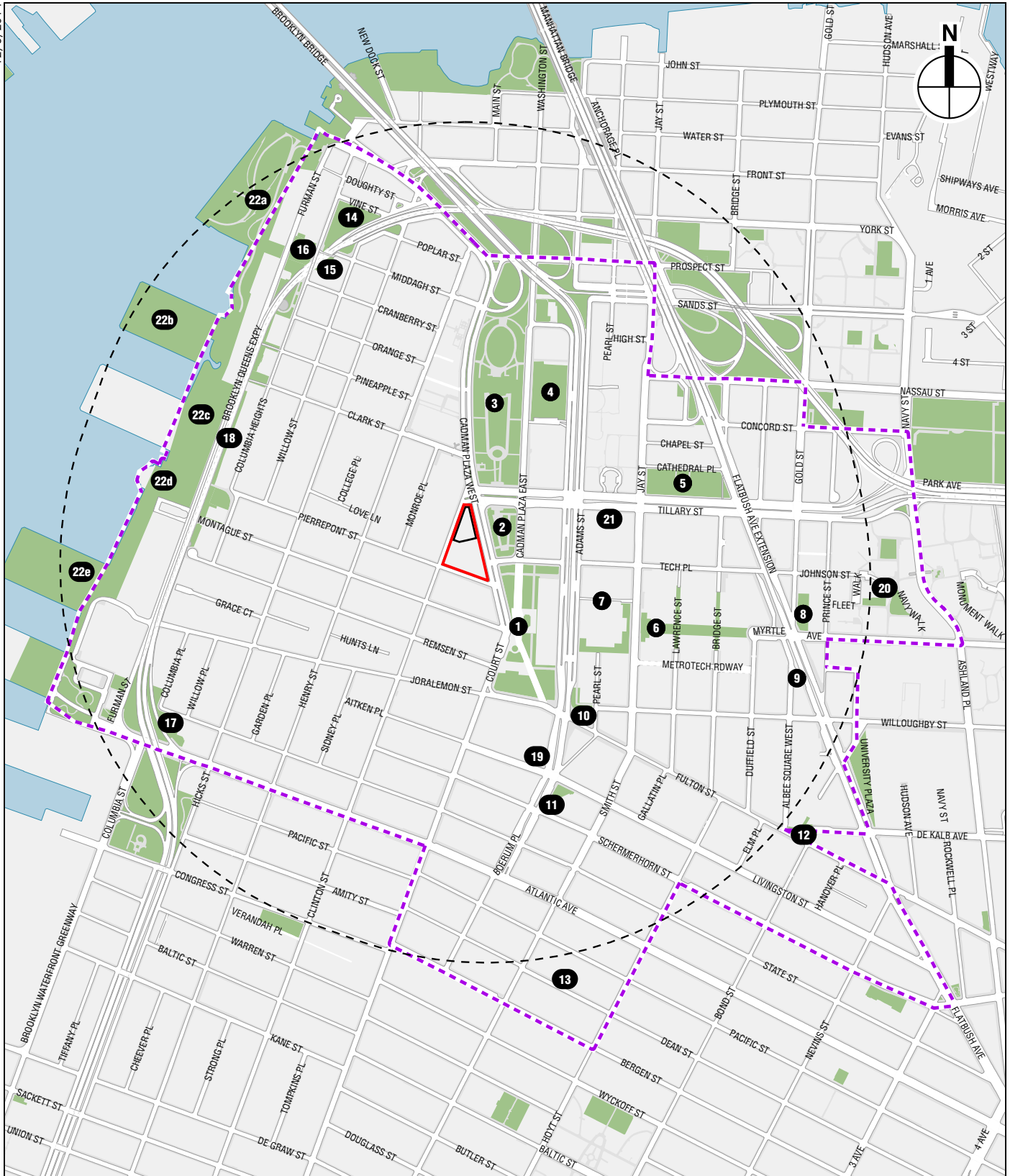
Table E-1
Existing Residential Population—2010 Census

Census Tract	Residential Population
1	4,338
3.01	4,259
5.01	4,247
5.02	2,512
7	3,359
9	4,172
11	84
13	2,275
15	3,521
37	390
43	3,008
Total	32,165
Source: U.S. Census Bureau, 2010 Census.	

STUDY AREA OPEN SPACE INVENTORY

There are no publicly accessible open spaces located on the development site. The small seating area located on the development site near the intersection of Clinton Street and Cadman Plaza West was never open to the public, nor has it been made available for use by library staff or patrons.

There are 22 publicly accessible open spaces in the ½-mile study area (see **Figure E-2**). These open spaces include publicly accessible open spaces and privately owned spaces that are open to the public. Altogether, there is a total of 62.94 acres of open space in the study area, of which 22.11 acres are considered active recreational open space and 40.83 acres are considered passive recreational open space (see **Table E-2**).



- Project Area
- Development Site
- Study Area (Half-mile boundary)
- Residential Study Area Boundary

1 Open Space Resources

280 CADMAN PLAZA WEST

Open Space Resources
Figure E-2

Table E-2
Study Area Open Space Inventory

Map ID No. ¹	Name	Location	Owner	Total Acres	Active	Passive	Amenities	Condition/Utilization
1	Columbus Park	Adam St., Court St., Cadman Plaza West bet. Johnson St. and Fulton St.	DPR	4.14	0.00	4.14	Walkways, sculpture, monuments, trees, tables, wireless internet access, seating, fountain	Good/High
2	Korean War Veterans Plaza	Cadman Plaza West, Cadman Plaza East bet. Tillary St. and Johnson St.	DPR	1.20	0.00	1.20	Trees, benches, monument	Good/Low
3	Cadman Plaza Park	Cadman Plaza West, Cadman Plaza East bet. BQE and Tillary St.	DPR	10.38	1.00	9.38	Landscaping, trees, benches, field, monuments	Good/Moderate
4	Walt Whitman Park	Cadman Plaza East, Adams St. Bet. Red Cross Pl. And Tillary St.	DPR	2.91	0.00	2.91	Landscaping, trees, tables, chairs, benches, lawn, sprinklers	Good/Moderate
5	McLaughlin Park	Jay St., Bridge St. bet. Tillary St. and Cathedral Pl.	DPR	1.98	1.58	0.40	Playgrounds, basketball courts, field, benches, tables	Good/Moderate
6	MetroTech Commons	Jay Plaza bet. Tech Pl., Jay St., Flatbush Ave., Willoughby St.	Forest City Metrotech Associates	3.30	0.00	3.30	Pedestrian mall, landscaping, sculpture, trees, seating, tables, chairs	Excellent/High
7	350 Jay Street	Between Adams St., Jay St., Tech Pl., and Willoughby St.	Renaissance Marriott Hotel	0.73	0.00	0.73	Trees, planters, benches	Excellent/High
8	Fort Greene Open Space	Myrtle Ave. and Gold St.	AvalonBay Communities, Inc.	0.44	0.00	0.44	Seating, lawns, plantings	Excellent/Low
9	Seating Area ¹	Gold St., Flatbush Ave., and Willoughby St.	HPD	0.08	0.00	0.08	Trees, seating, plants	Good/Low
10	Willoughby Plaza	Willoughby St. bet. Pearl St. and Adams St.	DOT	0.17	0.00	0.17	Pedestrian plaza, plantings, tables, seating	Excellent/High
11	130 Livingston Street	Livingston St., Schermerhorn St., Smith St., and Boerum Pl.	MTA	0.24	0.00	0.24	Seating, plantings	Good/Low
12	Albee Square	DeKalb Ave. and Fulton St.	DOT	0.11	0.00	0.11	Trees, seating tables, plantings, community programs	Excellent/Moderate
13	P.S. 261 ²	314 Pacific St.	DOE	0.83	0.66	0.17	Playground, courts, benches, tables	Good/Low
14	Hillside Park	Columbia Hts., Hicks St., bet. Middagh St. and Vine St.	DPR	1.37	0.82	0.55	Lawn area, dog run, picnic tables, seating	Good/Low
15	Harry Chapin Playground	Columbia Hts. at Middagh St.	DPR	0.30	0.27	0.03	Play equipment, benches, gaming tables	Good/High
16	Squibb Park	Middagh St. bet. Columbia Heights & Furman St.	DPR	0.63	0.50	0.13	Multi-use playing court, benches, restrooms	Good/Moderate
17	Adam Yauch Park	Atlantic Ave., Columbia Pl., State St.	DPR	1.36	0.68	0.68	Benches, playground equipment, spray showers, fitness equipment, trees, plantings, basketball courts	Good/Moderate

Table E-2 (cont'd)
Study Area Open Space Inventory

Map ID No. ¹	Name	Location	Owner	Total Acres	Active	Passive	Amenities	Condition/Utilization
18	Brooklyn Heights Promenade	Bet. Joralemon St. and Orange St. above Brooklyn Queens Expressway	DPR	2.56 ³	1.02	1.54	Esplanade with vistas, playgrounds, sitting areas, trees, plants	Good/High
19	111 Livingston Street	Boerum Pl. and Livingston St.	111 Livingston LLC	0.13	0.00	0.13	Seating	Good/Low
20	RV Ingersoll Houses	Bet. Myrtle Ave., N. Portland Ave., Park Ave. and Prince St.	NYCHA	1.16	0.58	0.58	Seating, playgrounds, playing courts, plantings	Fair/Low
21	New York City College of Technology	Bet. Tillary St., Adams St., Johnson St., and Jay St.	CUNY	0.22	0.00	0.22	Benches, plants	Fair/Low
22	Brooklyn Bridge Park			28.7	14.98	13.72		
22A	Pier 1	Bet. Old Fulton St. and Middagh St. along the East River	BBP	11.3	4.52	6.78	Lawns, paths, landscaping, waterfront promenade, seating area, playground, concessions	Good/High
22B	Pier 2	Bet. Orange St. and Pineapple St. along the East River	BBP	4.6	4.14	0.46	In-line and ice skating rink, handball, basketball, and bocce courts, play equipment, exercise equipment, paths, seating	Good/Moderate
22C	Pier 2-4 Upland	Bet. Clark St. and Pierrepont St. along the East River	BBP	6.2	1.55	4.65	BBP Greenway, granite terrace, sculpture, lawn areas, seating	Good/Moderate
22D	Pier 4 Beach	Bet. Pierrepont St. and Montague St. along the East River	BBP	1.3	0.00	1.3	Beach and tidal pool	Good/Moderate
22E	Pier 5	Joralemon St. along the East River	BBP	5.3	4.77	0.53	Multi-use recreation fields, play area, promenade, paths, seating	Good/High
Study Area Total				62.94	22.11	40.83		

Notes:

DPR= New York City Department of Parks and Recreation

DOE= New York City Department of Education

DOT= New York City Department of Transportation

MTA= New York City Metropolitan Transportation Authority

NYCHA= New York City Housing Authority

HPD= Housing Preservation and Development

BBP=Brooklyn Bridge Park Development Corporation

CUNY= The City University of New York

¹ See Figure E-2 for open space resources.² P.S. 261 is part of the DPR Schoolyards to Playgrounds program and is open to the public during non-school hours; therefore, it has been included in the quantitative analysis.³ The Brooklyn Heights Promenade—including the Promenade, Fruit Sitting Area, Fort Stirling Park, and Pierrepont Playground—totals approximately 3.83 acres of open space based on DPR estimates. This analysis conservatively accounts for only those portions of the open spaces that are publicly accessible for passive and/or active recreation.**Sources:** New York City Department of Parks and Recreation; Brooklyn Bridge Park Development Corporation; AKRF Field Surveys, October 2014; Select open space acreages were calculated using GIS data.

Brooklyn Bridge Park is the largest open space resource in the study area. For the purposes of this analysis, the park has been separated into five sections, as shown in **Table E-2**. Totalling approximately 28.7 acres, these five sections offer a wide array of amenities for both active and passive use, including walkways, lawns, playgrounds, playing courts, exercise equipment, concessions, seating, and the waterfront promenade. Of the total acreage, 14.98 acres are considered to be active recreational open space and 13.72 acres are considered to be passive recreational open space.

DPR's Cadman Plaza Park offers both active and passive recreational open space, including walkways, benches, and a synthetic turf multipurpose play area. Cadman Plaza Park totals 10.38 acres, of which 1.00 acre is considered to be active recreational open space associated with the synthetic turf multipurpose play area and 9.38 acres are considered to be passive recreational open space. Columbus Park offers 4.14 acres of passive recreational open space with amenities such as walkways, seating, tables, a fountain and monuments. Walt Whitman Park includes 2.91 acres of passive recreational open space with landscaping, tables, and chairs. The Brooklyn Heights Promenade, including Fort Stirling Park, the Fruit Sitting Area, and Pierrepont Playground, totals approximately 3.83 acres. However, this analysis conservatively accounts for only an approximately 2.56-acre portion that is publicly accessible for passive or active recreation. Of the 2.56 acres accounted for in this analysis, 1.02 acres are considered to be active recreational open space and 1.54 acres are considered to be passive recreational open space.

Other DPR parks in the study area include Korean War Veterans Plaza, McLaughlin Park, Hillside Park, Harry Chapin Playground, Squibb Park, and Adam Yauch Park. These parks provide numerous amenities including picnic tables, gaming tables, seating, play equipment, fitness equipment, and playing courts.

RV Ingersoll Houses also contain open spaces on their grounds, which are under the jurisdiction of the New York City Housing Authority (NYCHA). The RV Ingersoll Houses offer 1.16 acres of both passive and active open space with amenities that include seating, playgrounds, and basketball courts, as well as the Ingersoll Community Center with a gymnasium, fitness center, and community programming space that is open to the public. In addition, P.S. 261 offers approximately 0.83 acres of open space when school is not in session, including amenities such as play equipment, playing courts, seating, and tables.

MetroTech Commons is a 3.30-acre privately-owned, publicly-accessible open space with a pedestrian mall, plantings, tables, and seating. In addition, there are also a number of small plaza open spaces in the study area, which typically contain trees or other plantings, and seating. Some are privately-owned but publicly accessible, including open space at Fort Green Open Space, 350 Jay Street, and 111 Livingston Street. Others are publicly-owned, including Albee Square, 130 Livingston, and Willoughby Plaza.

ADEQUACY OF OPEN SPACES

The residential study area has a total of approximately 62.94 acres of open space, including 22.11 acres of active space and 40.83 acres of passive space. With an estimated population of 32,165 residents, the residential study area has a total open space ratio of 1.957 acres per 1,000 residents (see **Table E-3**). This is lower than the city's goal of 2.500 total acres of open space per 1,000 residents; however, it is above the citywide community district median of 1.500 acres per 1,000 residents.

Table E-3

Existing Conditions: Adequacy of Open Space Resources

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
32,165	62.94	22.11	40.83	1.957	0.687	1.269	2.500	2.000	0.500

The study area's current residential active open space ratio is 0.687 acres per 1,000 residents, which is below the City's planning guideline of 2.000 acres per 1,000 residents. However, the area's current residential passive open space ratio is 1.269 acres of passive open space per 1,000 residents, which is well above the City's benchmark of 0.500 acres of passive space per 1,000 residents.

Qualitative Considerations

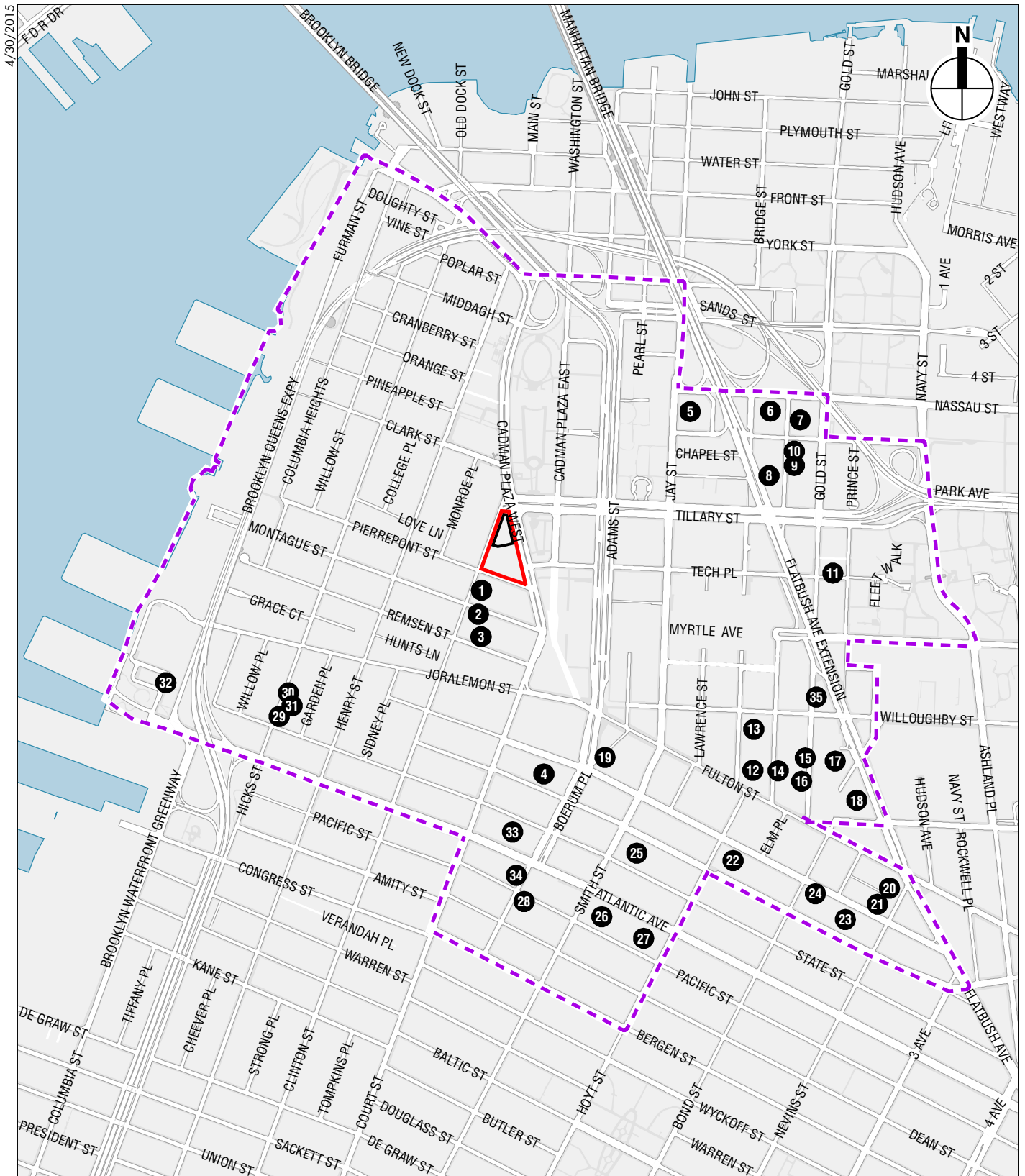
Van Voorhees Park, Bridge Park 3, and Trinity Park are located within a ½-mile of the development site, but have not been included in the quantitative analysis because, in accordance with the *CEQR Technical Manual*, at least 50 percent of their census tract area does not fall within the study area. Van Voorhees Park offers 5.74 acres of recreational open space that includes play equipment, handball courts, basketball courts, and benches. Bridge Park 3 offers 1.93 acres of recreational open space with basketball courts and benches. Trinity Park consists of 6.30 acres of passive recreational open space with tables and benches.

Additionally, other recreational open space resources are located just outside the study area. Other sections of Brooklyn Bridge Park are located along the East River, including Pier 6, which provides 7.0 acres of recreation open space with volleyball courts, promenade, play equipment, and seating. Commodore Barry Park also is located just outside of the study area and provides 10.39 acres of recreational open space that includes playgrounds, baseball fields, and playing courts. Residents within walking distance of these parks are likely to make use of their passive and active recreational opportunities.

THE FUTURE WITHOUT THE PROPOSED PROJECT

STUDY AREA POPULATION

In the future without the proposed project, the study area will continue to experience residential, commercial, and institutional development. As described in Attachment B, "Land Use, Zoning, and Public Policy," by 2019 two projects will be built in the 400-foot study area around the development site and project area. In addition, a number of projects will be completed within the ½-mile residential open space study area (see **Table E-4** and **Figure E-3**).



- Project Area
- Development Site
- Residential Study Area Boundary
- 1 Planned New Residential Development

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Planned New Residential Developments
Figure E-3

Table E-4

Planned Residential Developments Within Open Space Study Area

Ref. No	Address (Project Name)	Block	Lot(s)	Dwelling Units (DUs) ¹
1	177 Montague Street (The Brooklyn Trust Company Building)	244	17	12
2	172 Montague Street	250	28	62
3	153 Remsen Street	250	16	60
4	71-79 Schermerhorn Street	269	9	5
5	116-120 Nassau Street	107	1	257
6	174-180 Nassau Street (Brooklyn Warehouse 180)	108	12	128
7	200 Nassau Street	109	1	84
8	85 Flatbush Avenue Extension	120	45	64
9	37 Duffield Street	121	18	7
10	178 Concord Street	121	21	7
11	311 Gold Street (Oro II)	134	1	208
12	505 Fulton Street (Offerman Building)	145	7501/35	571
13	214 Duffield Street (Avalon Willoughby West)	145	22	861
14	237 Duffield Street	146	7	108
15	420 Albee Square	146	43	620
16	436 Albee Square	146	51	150
17	336 Flatbush Avenue Extension	149	101	1,010
18	340 Flatbush Avenue Extension	149	100	495
19	117 Livingston Street (415 Red Hook Lane)	154	40	110
20	8-16 Nevins Street	161	47	149
21	299 Livingston Street	161	57	37
22	210 Livingston Street	165	1	349
23	285 Schermerhorn Street	166	51	106
24	300 Livingston/33 Bond Street	166	1	714
25	71 Smith Street/140 Schermerhorn Street (Carlyle/Flank Site)	170	1	140
26	287 Pacific Street	182	54	10
27	319/323 Pacific Street	182	35	2
28	99 Boerum Place	187	8	1
29	295 Hicks Street	261	9	1
30	299 Hicks Street	261	111	1
31	297 Hicks Street	261	110	1
32	Atlantic Avenue, Furman St., and Loop Road (Brooklyn Bridge Park Pier 6)	245	29	430
33	60-66 Boerum Place	277	1	75
34	237 Pacific Street	278	1	3
35	141 Willoughby Street	2060	1	251
Total				7,089
Notes: 1. Proposed number of DUs, according to Department of Buildings filings; subject to change.				
Sources: NYC Department of Buildings; AKRF, Inc.				

The average household size of 2.01 persons per household for CD 2 was applied to the number of DUs added by the planned residential developments in the open space study area. The known development projects will result in an estimated total of 14,249 new residents in the study area. Altogether, the population will increase to 46,414 in the future without the proposed project.

STUDY AREA OPEN SPACES

New open space resources are expected to be completed in the study area by the 2019 analysis year. Willoughby Square Park will be located on the south side of Willoughby Avenue between Duffield Street and Gold Street. Willoughby Square Park will provide approximately one acre of passive open space with lawns, walkways, and gardens. In addition, a development at 120

Nassau Street, expected to be completed in 2016, will offer 0.24 acres of passive public open space. Overall, the total open space acreage will increase 1.24 acres to 64.18 acres in the future without the proposed project.

ADEQUACY OF OPEN SPACES

In the future without the proposed project, the substantial increase in residents due to the development projects in the area will decrease the total open space ratio to 1.383 acres per 1,000 residents. The total open space ratio will remain below the City's goal of 2.500 total acres per 1,000 residents and will fall below the City median of 1.500 acres per 1,000 residents (see **Table E-5**). The added residents will decrease the active open space ratio to 0.476 acres per 1,000 residents, remaining below the City's benchmark of 2.000 acres of active open space per 1,000 residents. The added residents will also decrease the ratio for passive open space in the residential study area to 0.906 acres per 1,000 residents, however, the ratio will remain above the City's benchmark of 0.500 acres of passive open space per 1,000 residents.

Table E-5

Future Without the Proposed Project: Adequacy of Open Space Resources

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
46,414	64.18	22.11	42.07	1.383	0.476	0.906	2.500	2.000	0.500

Qualitative Considerations

No changes to the study area's private or restricted-access open space resources are expected in the future without the project. In addition, residents will continue to have access to major open space resources located within a ½ mile of the development site but not included in the quantitative analysis, such as Van Voorhees Park, Bridge Park 3, and Trinity Park. Additionally, the Brooklyn Strand is a recently proposed greenway, which would extend from the existing Columbus Park to the waterfront by linking the existing open space resources along Cadman Plaza West, totaling 21 acres. Once complete, this greenway would offer additional active and passive open space for residents within the study area.

PROBABLE IMPACTS OF THE PROPOSED PROJECT

Study Area Population

The proposed project would result in an increase of approximately 308 residential units, resulting in an addition of 619 residents to the study area for a total residential population of 47,033.

Study Area Open Spaces

The proposed project would not result in any changes to study area open spaces. The study area would continue to provide 64.18 acres of total open space, composed of 22.11 acres of active recreational open space and 42.07 acres of passive recreational open space.

Adequacy of Open Spaces

In the future with the proposed project, the total and active open space ratios in the study area would remain below City guideline levels, while the passive open space ratio would remain above City guidelines. As shown in **Table E-6**, the total open space ratio would be 1.365 acres per 1,000 residents, which is below both the citywide median open space ratio of 1.500 and the

City's planning goal of 2.500 acres per 1,000 residents. The active open space ratio would be 0.470 acres per 1,000 residents, which is below the City's guideline of 2.000 acres of active open space per 1,000 residents. The passive open space ratio would be 0.895 acres per 1,000 residents, above the City's guideline of 0.500 acres of passive open space per 1,000 residents.

Table E-6

Future With the Proposed Project: Adequacy of Open Space Resources

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
47,033	64.18	22.11	42.07	1.365	0.470	0.895	2.500	2.000	0.500

IMPACT SIGNIFICANCE

Direct Effects

The proposed project would not directly displace any public open spaces. The small seating area located on the development site near the intersection of Clinton Street and Cadman Plaza West would be displaced, but this seating area was never open to the public, nor has it been made available for use by library staff or patrons.

As detailed in other attachments, the proposed project would not result in significant shadow, air quality or noise impacts on any of the open spaces in the study area.

Indirect Effects

As noted above and summarized in **Table E-7**, the total and active open space ratios in the study area would continue to fall short of the City's guidelines in the future with the proposed project. However, the passive open space ratio would remain above the City's guidelines. The total open space ratio would decrease by 1.302 percent, the active open space ratio would decrease by 1.261 percent, and the passive open space ratio would decrease by 1.214 percent (to 1.365 acres, 0.470 acres, and 0.895 acres per 1,000 residents, respectively). Although the proposed project would result in a slight decrease in the total, active, and passive open space ratios from the future without the proposed project to the future with the proposed project, these decreases would not exceed 5 percent, which is the CEQR threshold for a more detailed open space analysis.

Table E-7

Future With the Proposed Project: Open Space Ratios Summary

Ratio	City Guideline	Open Space Ratios			Percent Change Future Without to Future With the Proposed Project
		Existing Conditions	Future Without the Proposed Project	Future With the Proposed Project	
Residential (½-Mile) Study Area					
Total/Residents	2.500	1.957	1.383	1.365	-1.302%
Active/Residents	2.000	0.687	0.476	0.470	-1.261%
Passive/Residents	0.500	1.269	0.906	0.895	-1.214%
Note: Ratios in acres per 1,000 people.					

It is recognized that the City's guidelines are not feasible for many areas of the City, and they are not considered impact thresholds. In addition, some of the open space needs of the study area population would be met by open spaces located just outside the ½-mile study area boundary, including Van Voorhees Park, Bridge Park 3, Trinity Park, Brooklyn Bridge Park Pier 6, and Commodore Barry Park—none of which were included in the quantitative analysis.

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Overall, the proposed project would not result in significant adverse impacts on open space resources in the study area because open space ratios would remain substantially the same in the future with the proposed project. *

A. INTRODUCTION

This attachment examines whether the proposed mixed-use building at the development site would cast new shadows on any nearby publicly-accessible sunlight-sensitive resources of concern. According to the 2014 *CEQR Technical Manual*, sunlight-sensitive resources include parks and other public open spaces, sunlight-dependent features of historic architectural resources, and natural resources that depend on sunlight.

The *CEQR Technical Manual* states that a shadows assessment is required if a project would result in new structures (or additions to existing structures) of 50 feet or more, or if the development site is located adjacent to, or across the street from, a sunlight-sensitive resource. The proposed 36-story mixed-use building would be up to approximately 441 feet tall (including roof-top mechanical bulkhead), and there are public parks located across Cadman Plaza West from the development site. Therefore a shadows assessment was conducted.

PRINCIPAL CONCLUSIONS

This assessment finds that project-generated shadows would fall on Cadman Plaza Park, the Korean War Veterans' Plaza, the Brooklyn General Post Office building's west façade, and three Greenstreets medians in multiple seasons, but the shadows would not result in significant adverse impacts, which is discussed in detail below. A few other resources would receive new shadow in a single season of the year and also would not result in significant shadow impacts.

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:

- *Public open space* (e.g. parks, beaches, playgrounds, plazas, schoolyards, greenways, 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 water bodies, 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 CEQR, because without the project the open space would not exist. However, if the condition of project-generated open space is included in the qualitative analysis presented in the Open Space analysis, a discussion of how shadows would affect the new space may be warranted.

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 new shadow and an analysis of the resource's sensitivity to reduced sunlight.

METHODOLOGY

Following the guidelines of the *CEQR Technical Manual*, a preliminary screening assessment must first be 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 a simple radius around the proposed building representing the longest shadow that could be cast. If there are sunlight-sensitive resources within this radius, the analysis proceeds to the second tier, which reduces the area that could be affected by project shadow by accounting for the fact that shadows can never be cast between a certain range of angles south of the project 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 new shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by project 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 new shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow resulting from the project. The detailed analysis provides the data needed to assess the shadow impacts. The effects of the new shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The results of the analysis and assessment 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 proposed mixed-use building on the development site and the surrounding street layout (see **Figure F-1**). In coordination with the open space and historic 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 the proposed building could cast is calculated, and, using this length as the radius, a perimeter is drawn around the development site. Anything outside this perimeter representing the longest possible shadow could never be affected by project-generated shadow, while anything inside the perimeter needs additional assessment.

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, at the start of the analysis day at 8:51 AM, and is equal to 4.3 times the height of the structure.

Therefore, at a maximum height of approximately 441 feet above curb level, including rooftop mechanical structures, the proposed mixed-use building could cast a shadow up to approximately 1,896 feet in length (441×4.3). Using this length as the radius, a perimeter was drawn around the project site (see **Figure F-1**). A number of sunlight-sensitive resources lay within this perimeter or longest shadow study area, and therefore the next tier of screening assessment was conducted.

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 F-1** illustrates this triangular area south of the project site. The complementing area to the north within the longest shadow study area represents the remaining area that could potentially experience new project generated shadow.

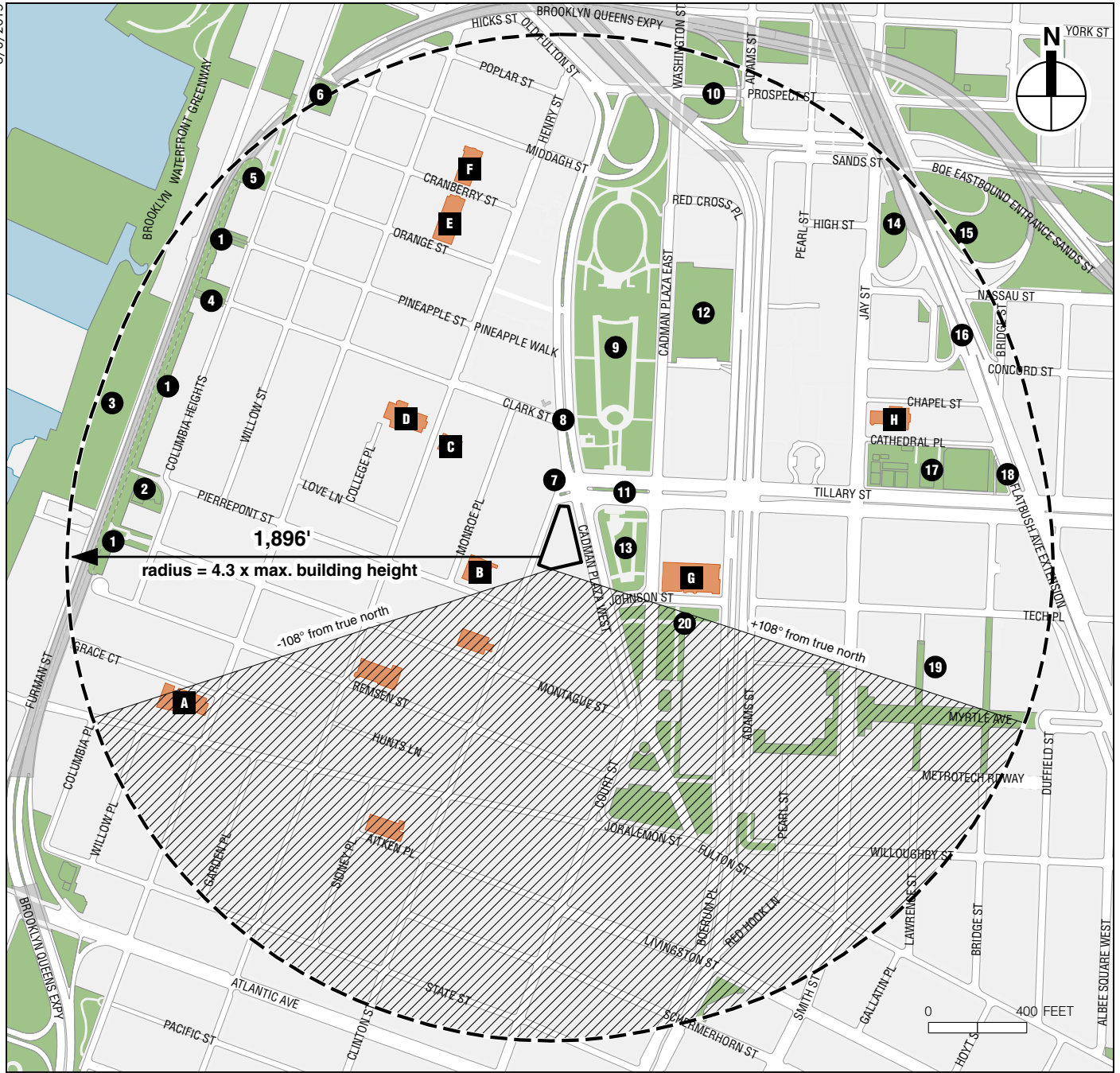
As shown on **Figure F-1**, there were 20 open space resources and 8 historic resources with sunlight-dependent features in the remaining longest shadow study area, and therefore the next tier of assessment was required.

TIER 3 SCREENING ASSESSMENT

The direction and length of shadows vary throughout the course of the day and also differ depending on the season. In order to determine whether project-generated shadow could fall on a sunlight-sensitive resource, three-dimensional (3D) computer mapping software² is used in the Tier 3 assessment to calculate and display the proposed project's shadows on individual representative days of the year. 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 a reasonable worst-case three-dimensional representation of the proposed project.

¹ Software: Esri ArcGIS 10.2; Data: New York City Department of Information Technology and Telecommunications (DoITT) and other City agencies, and AKRF site visits.

² MicroStation V8i (SELECTSeries 3)



- Development Site
- Tier 1: Longest shadow study area boundary
- Tier 2: Area south of site that could never be shaded by proposed building
- 14 Publicly-Accessible Open Space
- E Historic Resources with Sunlight-Sensitive Features

- A Grace Church Brooklyn Hts
- B First Unitarian Church
- C Zion German Evangelical Lutheran Church
- D First Presbyterian Church
- E Plymouth Church
- F Assumption Parish RC Church
- G US Post Office
- H Cathedral Basilica of St James

- 1 Brooklyn Heights Promenade
- 2 Pierrepont Plgd
- 3 Brooklyn Bridge Park
- 4 Fort Stirling Sitting Area
- 5 Fruit St Sitting Area
- 6 Harry Chapin Park
- 7 Greenstreet
- 8 Greenstreet
- 9 Cadman Plaza Park
- 10 Clumber Corner
- 11 Greenstreet
- 12 Walt Whitman Park
- 13 Korean War Veterans' Plaza
- 14 Plaza (DOT)
- 15 Trinity Park
- 16 Park
- 17 McLaughlin Park
- 18 Weinburg Triangle
- 19 MetroTech Commons
- 20 Columbus Park

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, generally 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 one and a half hours after sunrise and one and a half hours before sunset. At times earlier or later than this timeframe window of analysis, the sun is down near the horizon and the sun's rays reach the Earth at very tangential angles, diminishing the amount of solar energy and 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 outside the timeframe window of analysis are not considered significant under *CEQR*, and their assessment is not required.

TIER 3 SCREENING ASSESSMENT RESULTS

Figures F-2 and F-3 illustrate the range of shadows that would occur, in the absence of intervening buildings, from the proposed building on the development site, on the four representative days for analysis. As they move east and clockwise over the landscape, the shadows are shown occurring approximately every 60 minutes 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).

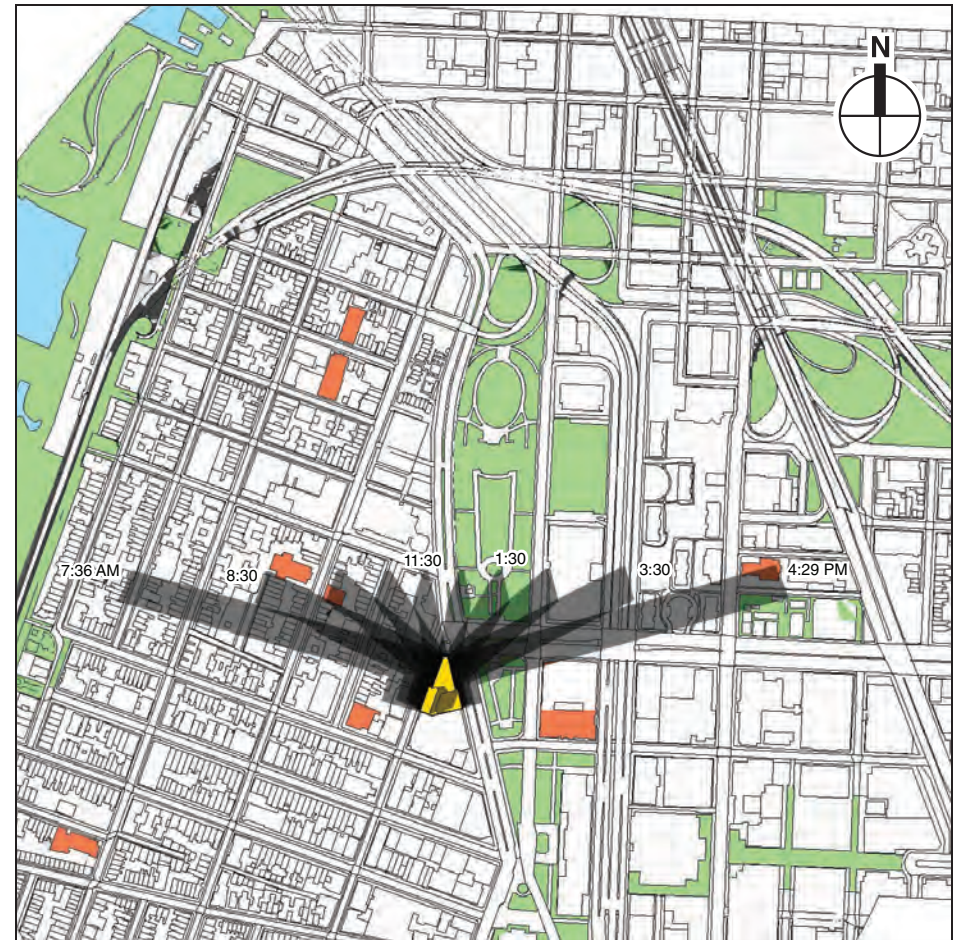
Resources of Concern

The Tier 3 assessment showed that the **Greenstreets medians** directly north and northeast of the development site could receive project-generated shadow on multiple analysis days. The **Korean War Veterans' Plaza**, directly east of the development site across Cadman Plaza West, and **Cadman Plaza Park**, to the northeast, also could receive project-generated shadow on multiple analysis days.

The western façade of the **US General Post Office** at 271 Cadman Plaza East also could receive project-generated shadow on multiple analysis days. The US General Post Office is a New York City Landmark building that is also listed on the National Register of Historic Places. The building was constructed ca. 1885-1891, with a northern extension built in 1930-1933. The southern (original) portion of the building includes semi-circular towers which are seated on carved, stone corbels, and a large corner tower terminated at its top by a series of balconies and a high pyramidal roof; the northern extension of the building has no such decorative details. As part of the *330 Jay Street FEIS* (1999), the New York City Landmarks Preservation Commission determined that the contrast of light and dark on the southern façade of the US General Post Office building, which is part of the original building, contributes to the overall effect of the façade and requested that the potential effect of shadows on this resource be considered. Along the western façade, the northern extension does not have the highly-carved ornamentation and deep reveals found on the primary, southern façade of the building. Therefore, architectural elements that are part of the southern portion of the US General Post Office are considered sunlight-sensitive in this analysis. The northern extension, which has shallower reveals and less highly-carved ornamentation as compared to the building's southern façade or the southern



December 21



March 21 / Sept. 21

- Proposed Building
- Publicly-Accessible Open Space (see Figure F-1)
- Historic Resource with Sunlight-Sensitive Features (see Figure F-1)
- Shadow

This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed buildings on the winter solstice and spring/fall equinox analysis days. The shadows are shown occurring approximately every 60 minutes 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 building's shadows across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow. Daylight Saving Time was not used, per *CEQR Technical Manual* guidelines.

0 500 1000 FEET



May 6 / August 6



June 21

- Proposed Building
- Publicly-Accessible Open Space (see Figure F-1)
- Historic Resource with Sunlight-Sensitive Features (see Figure F-1)
- Shadow

This figure illustrates the range of shadows that would occur, absent intervening structures, from the proposed buildings on the late spring and summer analysis days. The shadows are shown occurring approximately every 60 minutes 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 building’s shadows across the landscape, indicating which resources could potentially be affected on that analysis day, absent intervening buildings, by project-generated shadow. Daylight Saving Time was not used, per *CEQR Technical Manual* guidelines.

0 500 1000 FEET

portion of the western façade of the building, is not considered sunlight-sensitive because the play of light and shadow is not critical to the appreciation of its architectural elements.

Several other resources could, absent intervening buildings, receive project-generated shadow on one of the four analysis days, including: in winter, small portions of **Brooklyn Bridge Park**, the **Brooklyn Heights Promenade**, the **Fruit Street Sitting Area**, and **Walt Whitman Park**; on March 21/September 21, the **Zion German Evangelical Lutheran Church** and the **First Presbyterian Church** (both in the Brooklyn Heights Historic District), the **Cathedral Basilica of St. James** on Jay Street and Cathedral Place, and a small portion of **McLaughlin Park**; and on June 21, the **First Unitarian Church** and a small part of the **MetroTech Commons** open space.

Therefore, detailed modeling was required to determine the extent and duration of incremental shadows on these sunlight-sensitive resources.

D. DETAILED SHADOW ANALYSIS

The purpose of the detailed analysis is to determine the extent and duration of new incremental shadows that fall on sunlight-sensitive resources as a result of the proposed building, and to assess their potential effects. A baseline or future No Action condition is established, containing existing buildings and any future developments planned in the area, to illustrate the baseline shadows. The future condition with the proposed project and its shadows can then be compared to the baseline condition to determine the incremental shadows that would result with the proposed project.

Following the analysis framework described in Attachment A, “Project Description,” the shadows assessment was performed for the analysis year of 2019, comparing the proposed development with the future No Action condition in which the development site would remain as in the existing condition (i.e., the two-story building housing the Brooklyn Heights branch of the Brooklyn Public Library would remain).

Three-dimensional representations of the existing buildings in the study area were developed using data obtained from NYC DoITT and photos taken during project site visits, and were added to the three-dimensional model used in the Tier 3 assessment. **Figure F-4** shows a view of the computer model used in the analysis.

Shadows are in constant movement. The computer simulation software produces an animation showing the movement of shadows over the course of each analysis period. The analysis determines the time when incremental shadow would enter each resource, and the time it would exit.

Shadow analyses were performed for each of the representative days and analysis periods indicated in the Tier 3 assessment.



- Proposed Building*
- Publicly-Accessible Open Space*
- Existing Buildings*

Three-Dimensional Computer Model for Detailed Analysis View Northwest

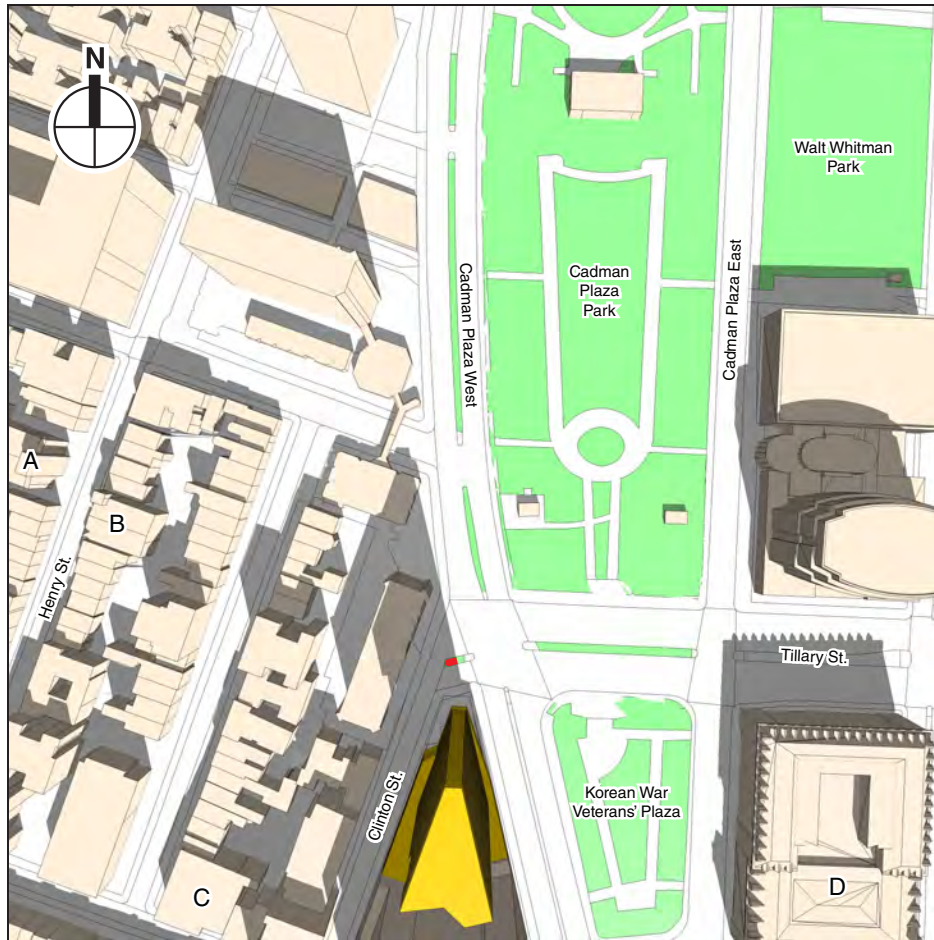
280 Cadman Plaza West

Figure F-4

Table F-1
Incremental Shadow Durations

Analysis day and timeframe window	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	December 21 8:51 AM-2:53 PM
OPEN SPACES				
Greenstreets median – Clinton St.	11:00 AM–12:45 PM Total: 1 hr 45 min	11:15 AM–12:20 PM Total: 1 hr 5 min	11:30 AM–12:15 PM Total: 45 min	10:20 AM–10:50 AM Total: 30 min
Greenstreets median – Cadman Plaza West	11:55 AM–12:45 PM Total: 50 min	12:05 PM–12:15 PM Total: 10 min	No incremental shadow	11:40 AM–12:15 PM Total: 35 min
Greenstreets median – Tillary St.	12:55 PM–4:29 PM Total: 3 hr 34 min	12:35 PM–3:25 PM Total: 2 hr 50 min	12:55 PM–2:55 PM Total: 2 hr	2:15 PM–2:53 PM Total: 38 min
Cadman Plaza Park	12:20 PM–3:45 PM Total: 3 hr 25 min	12:30 PM–2:25 PM Total: 1 hr 55 min	No incremental shadow	11:55 AM–2:53 PM Total: 2 hr 58 min
Korean War Veterans' Plaza	2:25 PM–4:29 PM Total: 2 hr 4 min	1:10 PM–5:18 PM Total: 4 hr 8 min	1:00 PM–6:01 PM Total: 5 hr 1 min	No incremental shadow
Walt Whitman Park	No incremental shadow	No incremental shadow	No incremental shadow	1:30 PM–2:35 PM Total: 1 hr 5 min
HISTORIC RESOURCES WITH SUN-SENSITIVE FEATURES				
First Presbyterian Church	South façade 8:35 AM–8:55 AM Total: 20 min East façade 8:40 AM–8:55 AM Total: 15 min Total duration: 8:35 AM–8:55 AM 20 mins	No incremental shadow	No incremental shadow	No incremental shadow
Zion German Evangelical Lutheran Church	South façade 8:30 AM–9:25 AM Total: 55 min East façade 8:45 AM–9:40 AM Total: 55 min Total duration: 8:30 AM–9:40 AM 1 hr 10 mins	No incremental shadow	No incremental shadow	No incremental shadow
Brooklyn General Post Office – southern portion of west façade	No incremental shadow	No incremental shadow	4:48 PM–6:01 PM Total: 1 hr 13 min	No incremental shadow
Cathedral Basilica of St. James – south façade	4:26 PM–4:29 PM Total: 3 min	No incremental shadow	No incremental shadow	No incremental shadow
Notes: Table indicates entry and exit times and total duration of incremental shadow for each sunlight-sensitive resource. Daylight saving time is not used. No incremental shadow times are Eastern Standard Time, per <i>CEQR Technical Manual</i> guidelines. However, as Eastern Daylight Time is in effect for the March/September, May/August and June analysis periods, add one hour to the given times to determine the actual clock time.				

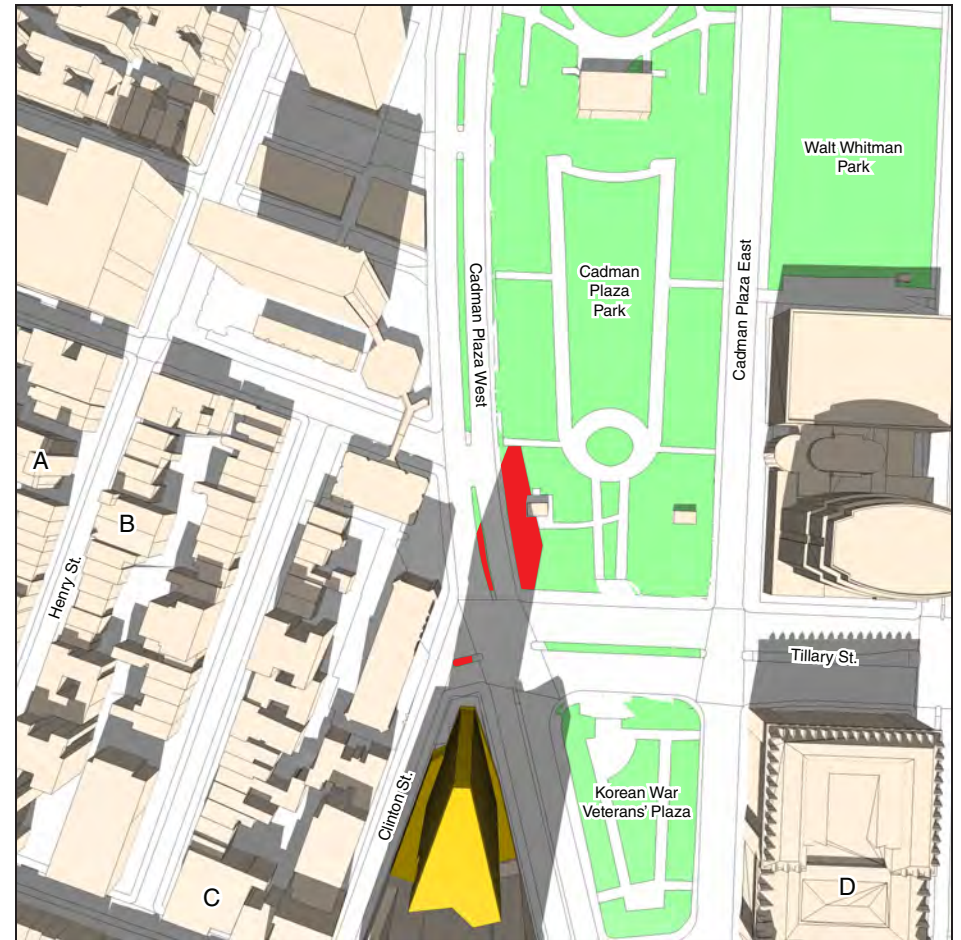
Table F-1 summarizes the entry and exit times and total duration of incremental shadows on each affected sun-sensitive resource. **Figures F-5 to F-22** document the results of the analysis by providing graphic representations from the computer animation of times when incremental shadow would fall on a sun-sensitive resource. The figures illustrate the extent of additional, incremental shadow at that moment in time, highlighted in red, and also show existing shadow and remaining areas of sunlight.



11:30 AM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

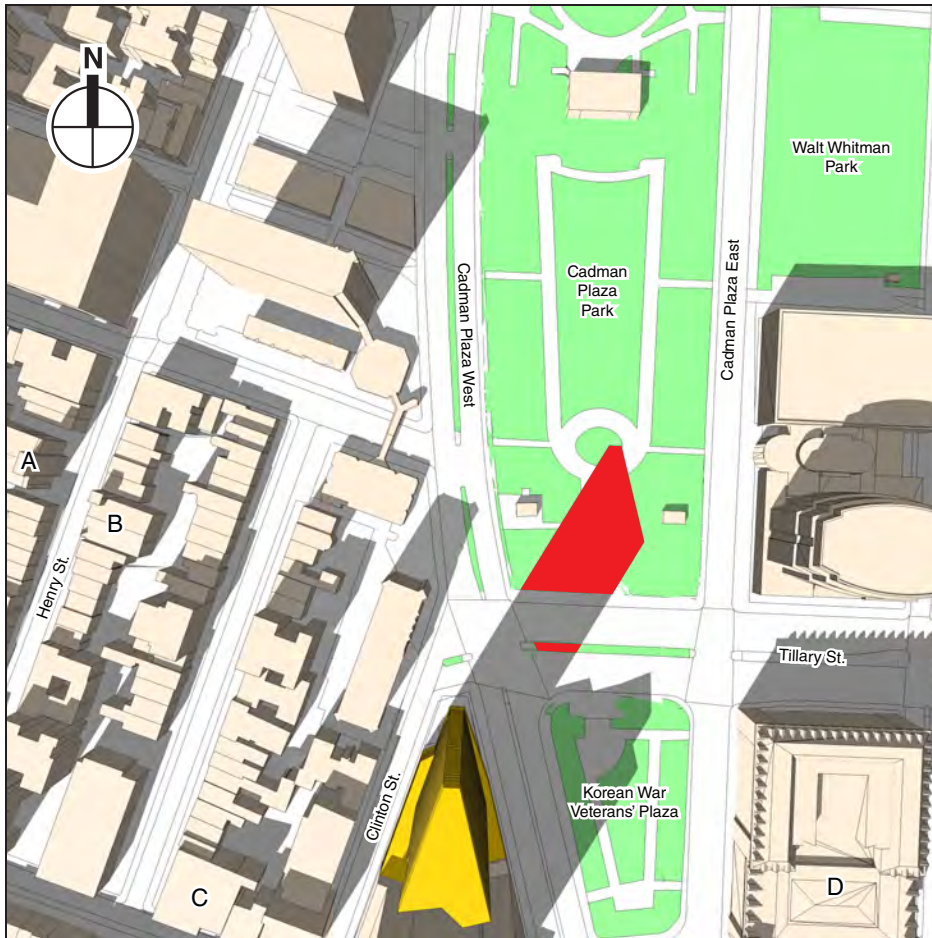
- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

12:30 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

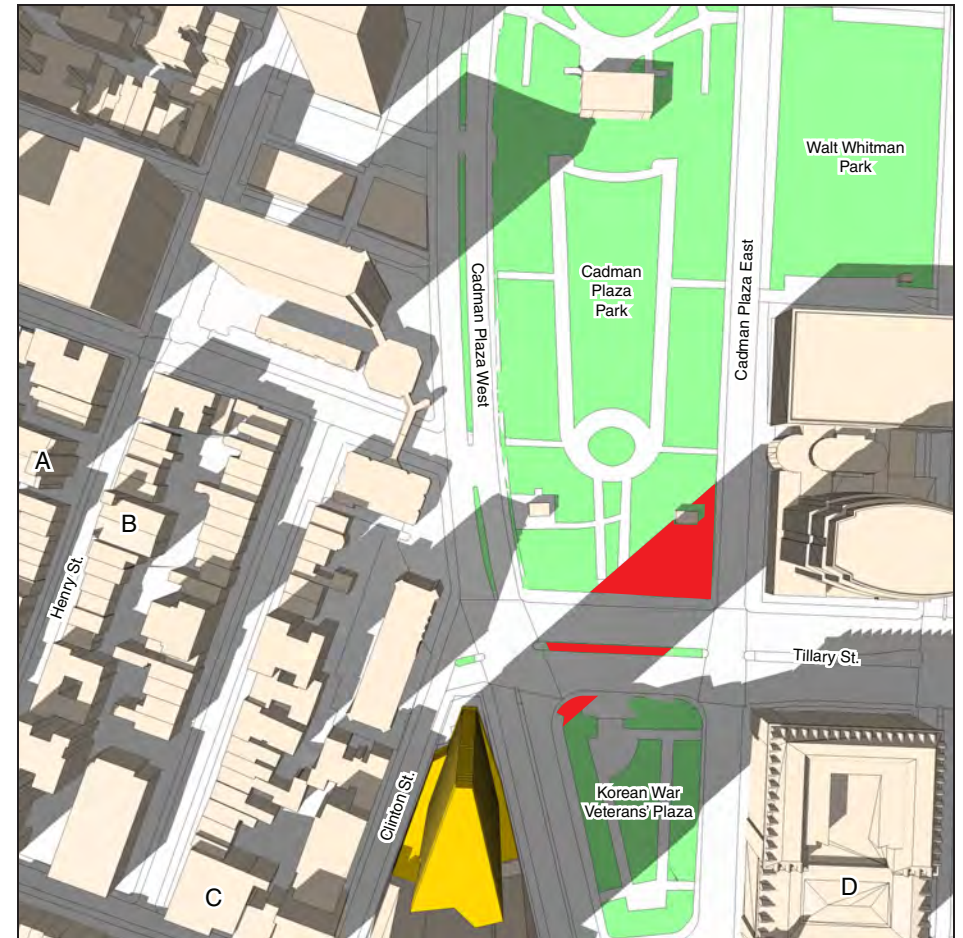
March 21 / September 21
Figure F-5



1:30 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

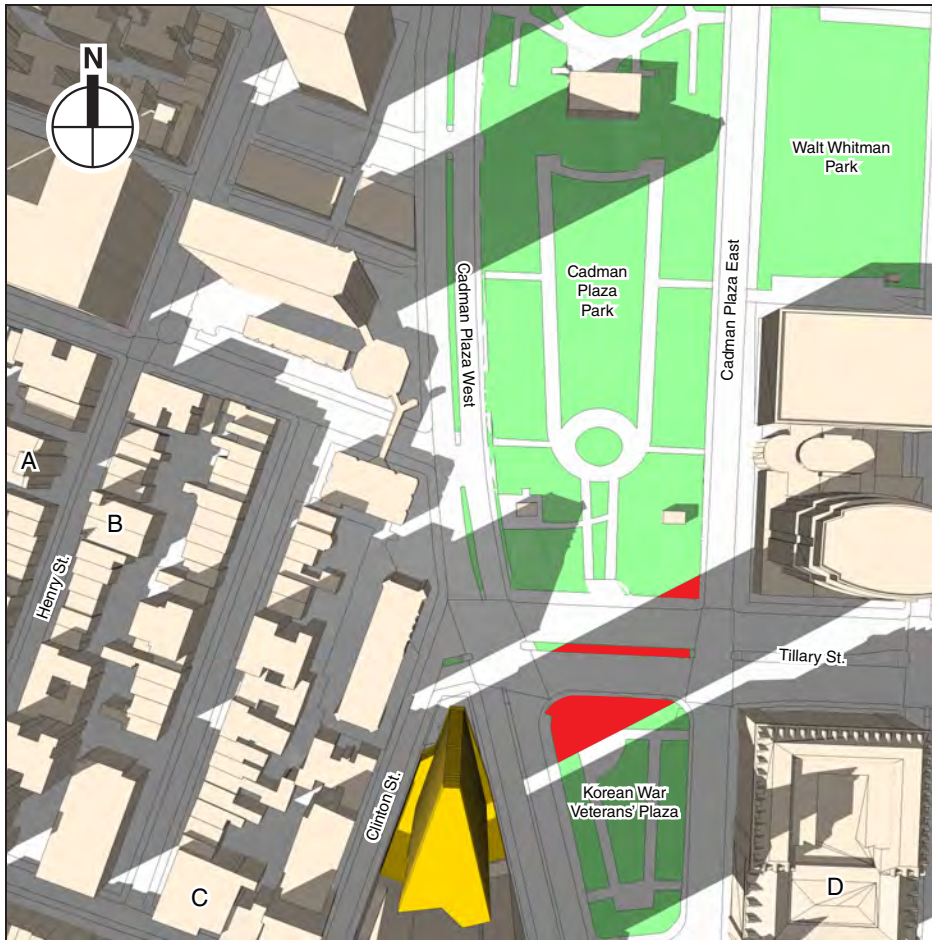
- A *First Presbyterian Church*
- B *Zion German Evangelical Lutheran Church*
- C *First Unitarian Church*
- D *Brooklyn General Post Office*

280 Cadman Plaza West

2:30 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

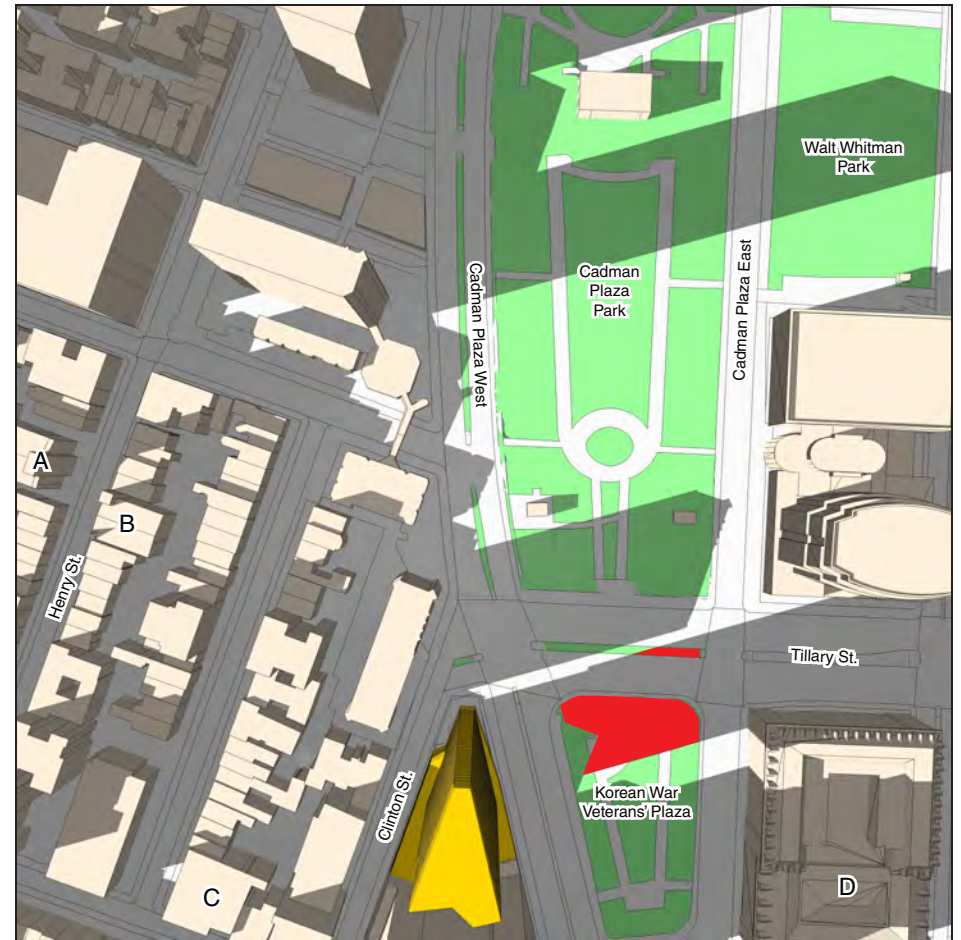
March 21 / September 21
Figure F-6



3:30 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

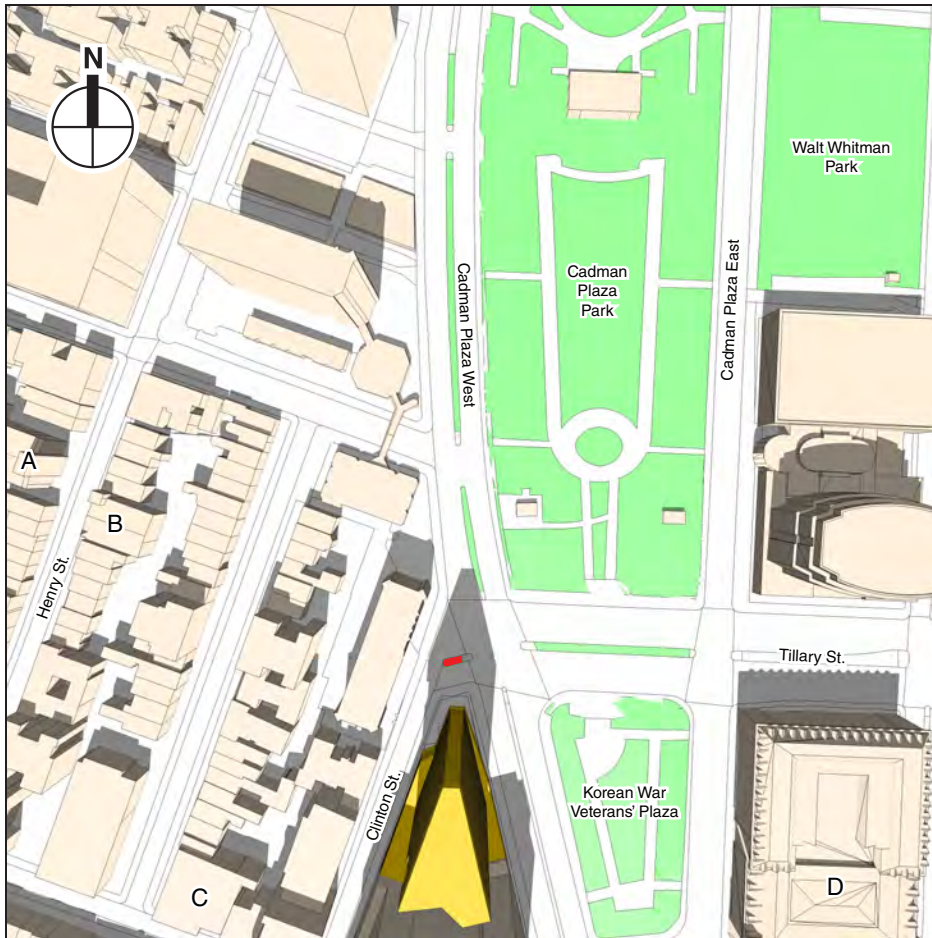
- A *First Presbyterian Church*
- B *Zion German Evangelical Lutheran Church*
- C *First Unitarian Church*
- D *Brooklyn General Post Office*

280 Cadman Plaza West

4:29 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

March 21 / September 21
Figure F-7

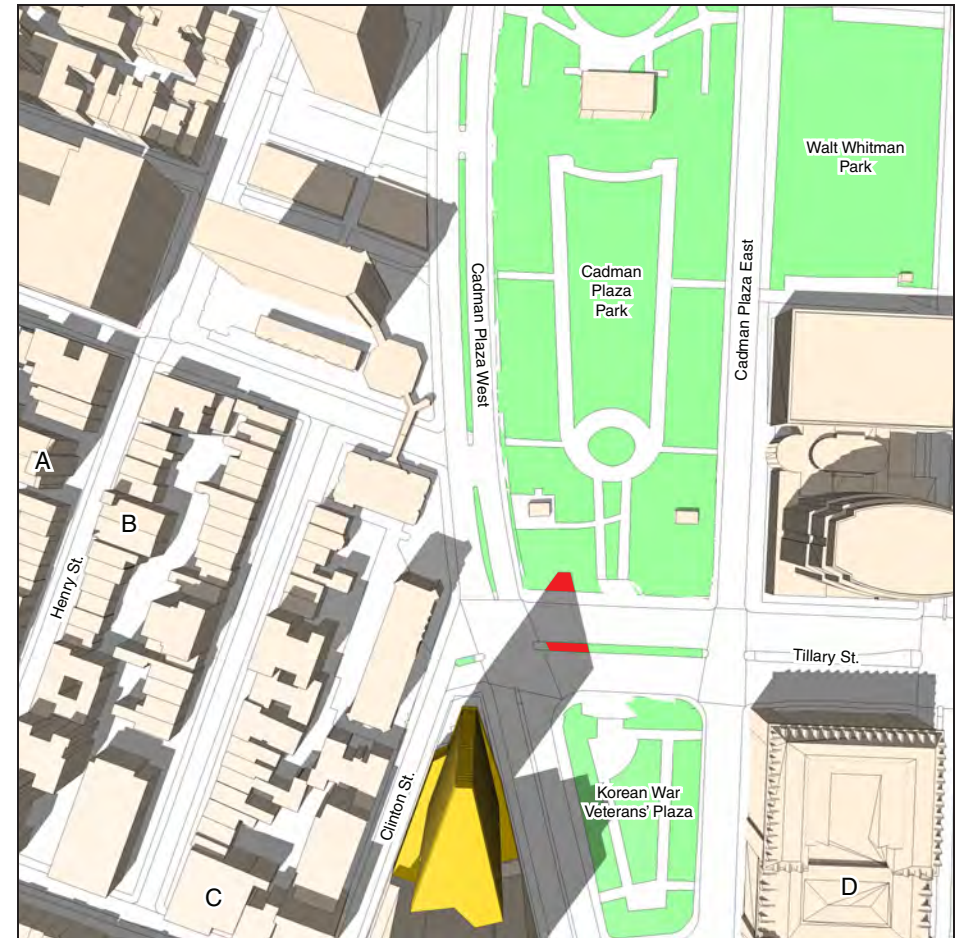


12:00 PM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

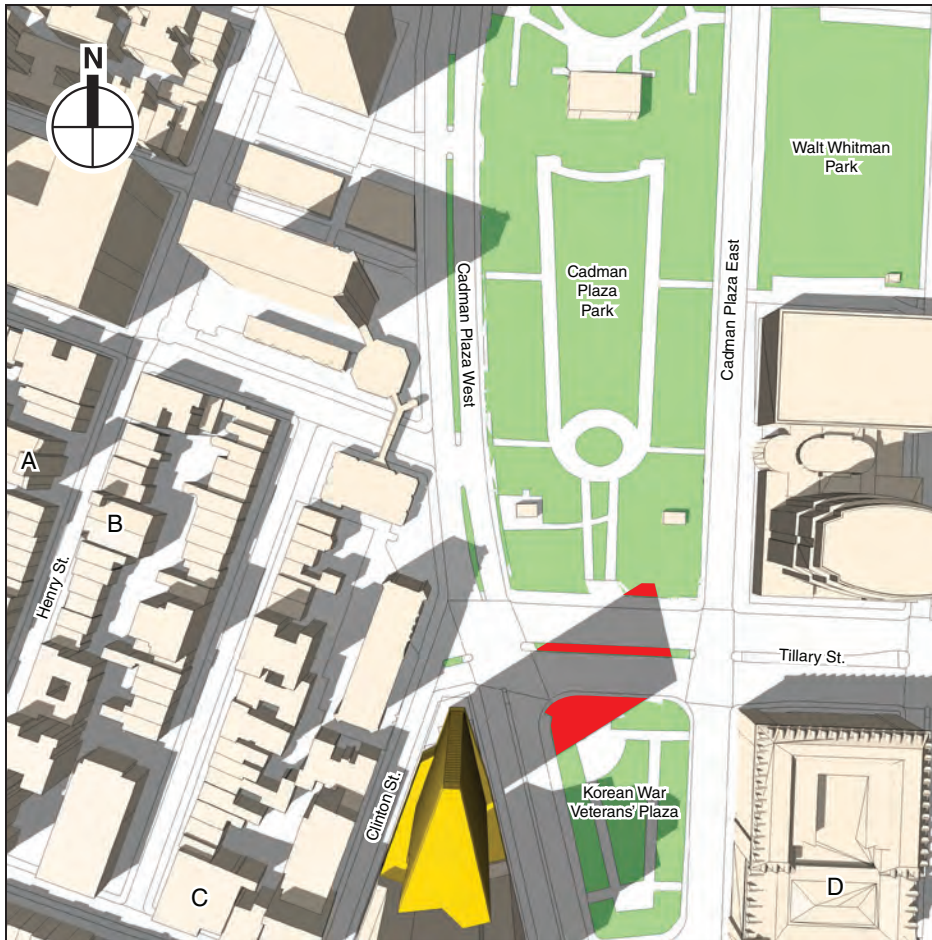
280 Cadman Plaza West



1:00 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

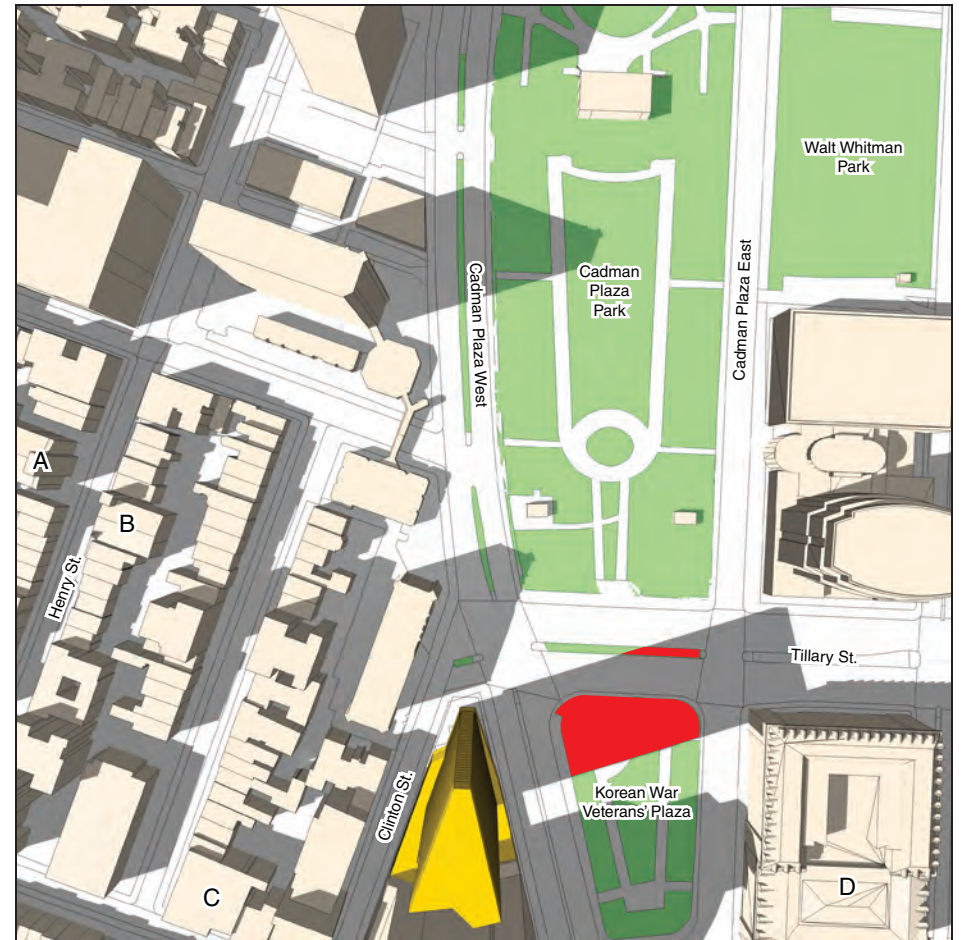
May 6 / August 6
Figure F-8



2:00 PM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

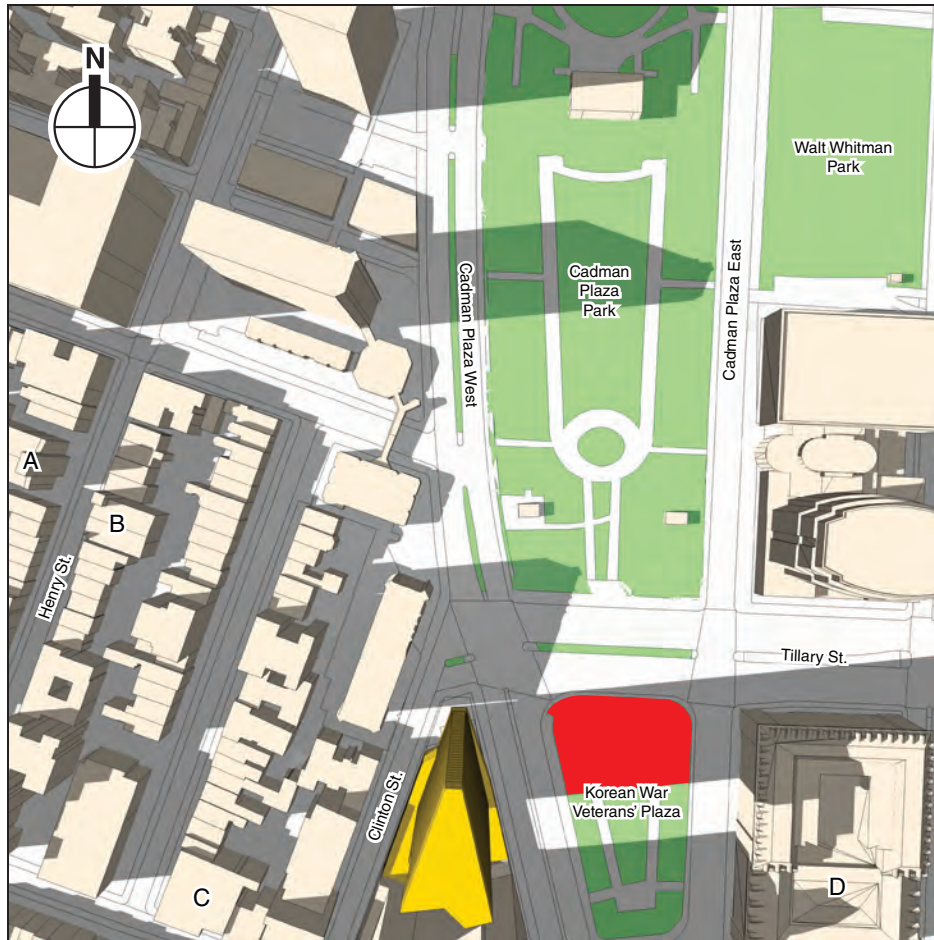
- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

3:00 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

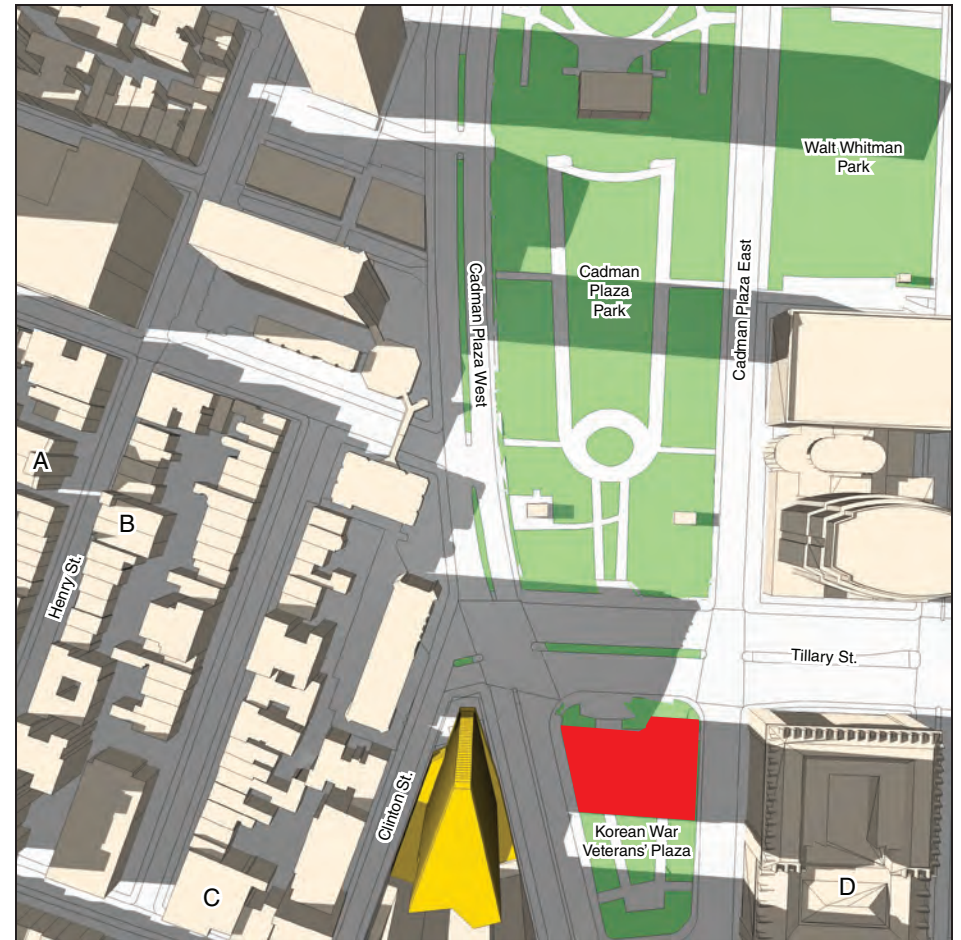
May 6 / August 6
Figure F-9



4:00 PM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

5:00 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

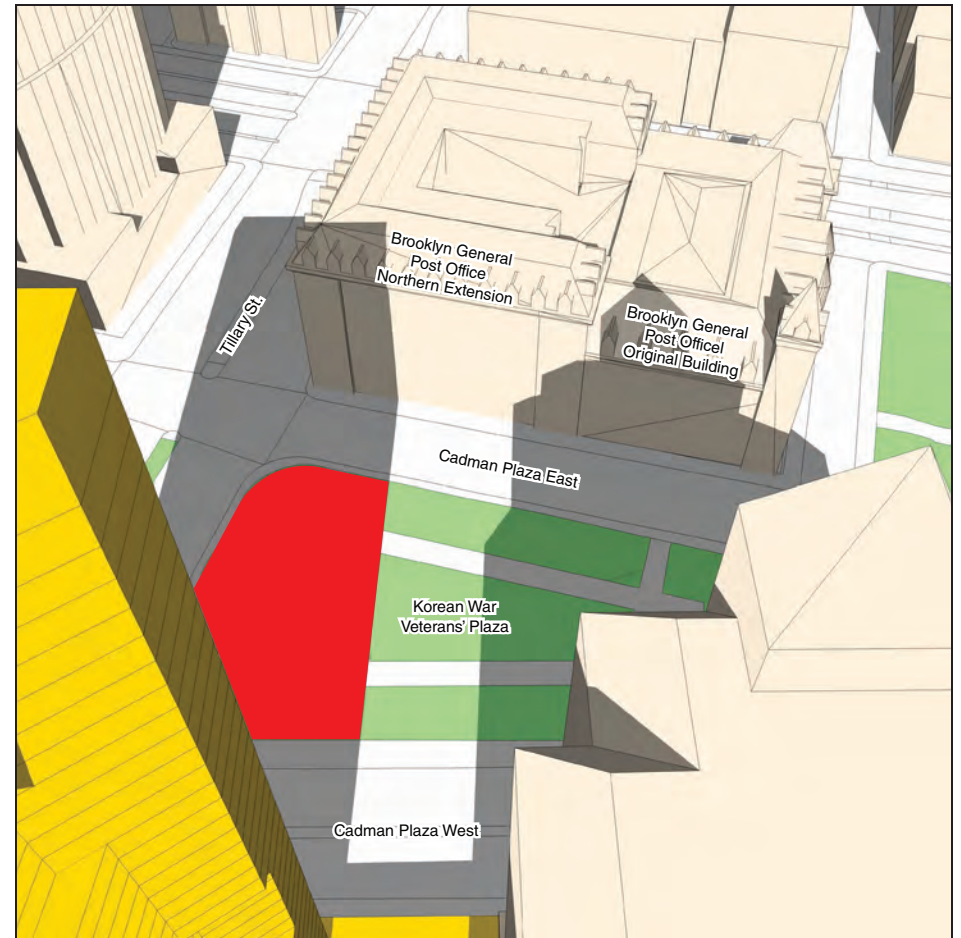
May 6 / August 6
Figure F-10



3:00 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

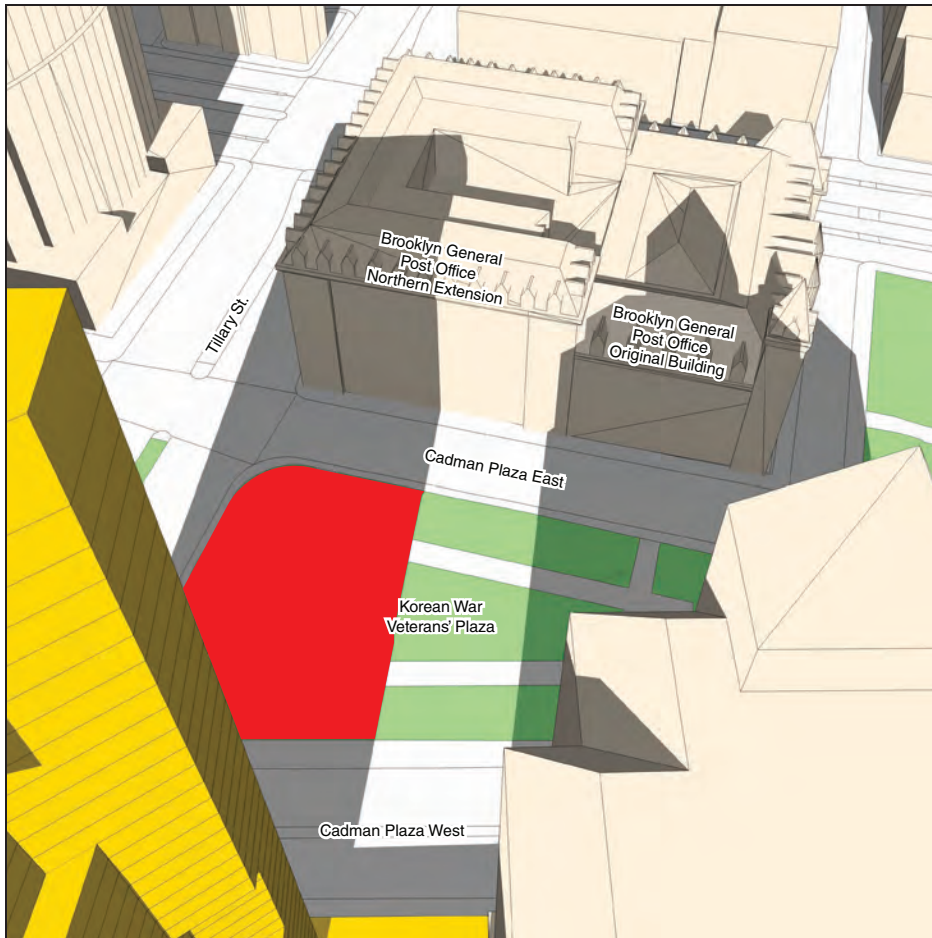
280 Cadman Plaza West



3:30 PM

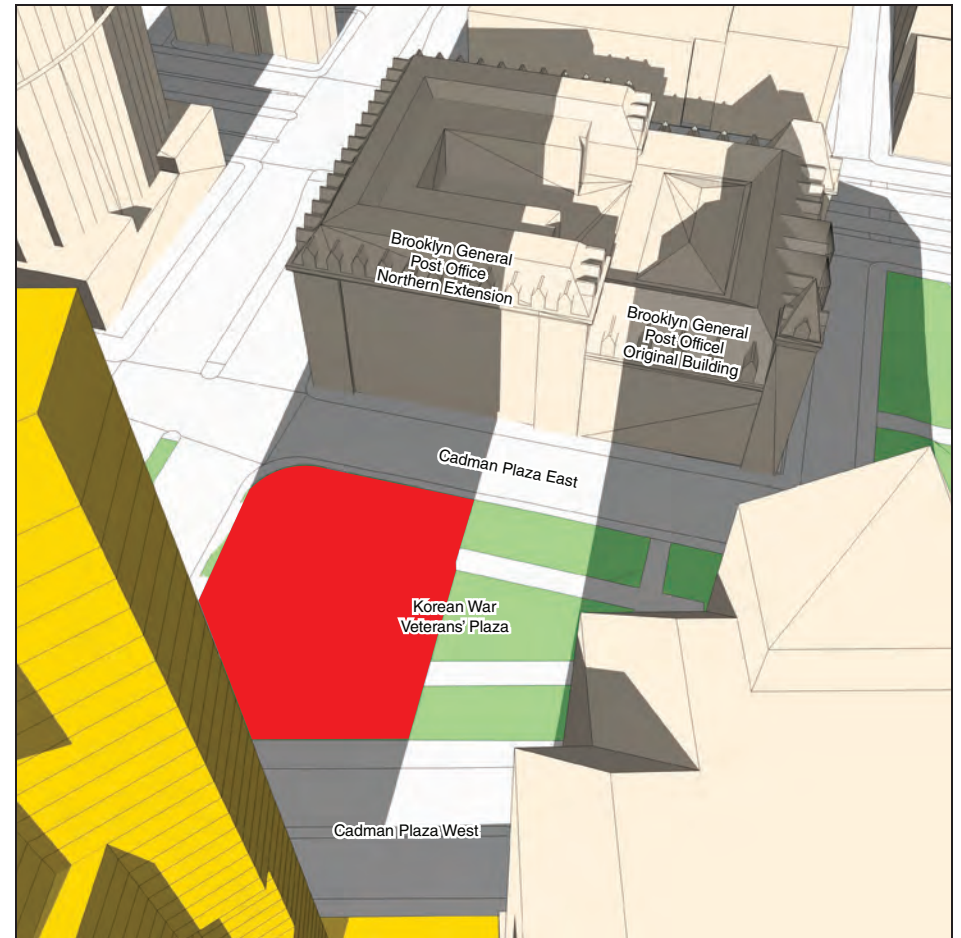
Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

May 6 / August 6 - View East
Figure F-11



4:00 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*



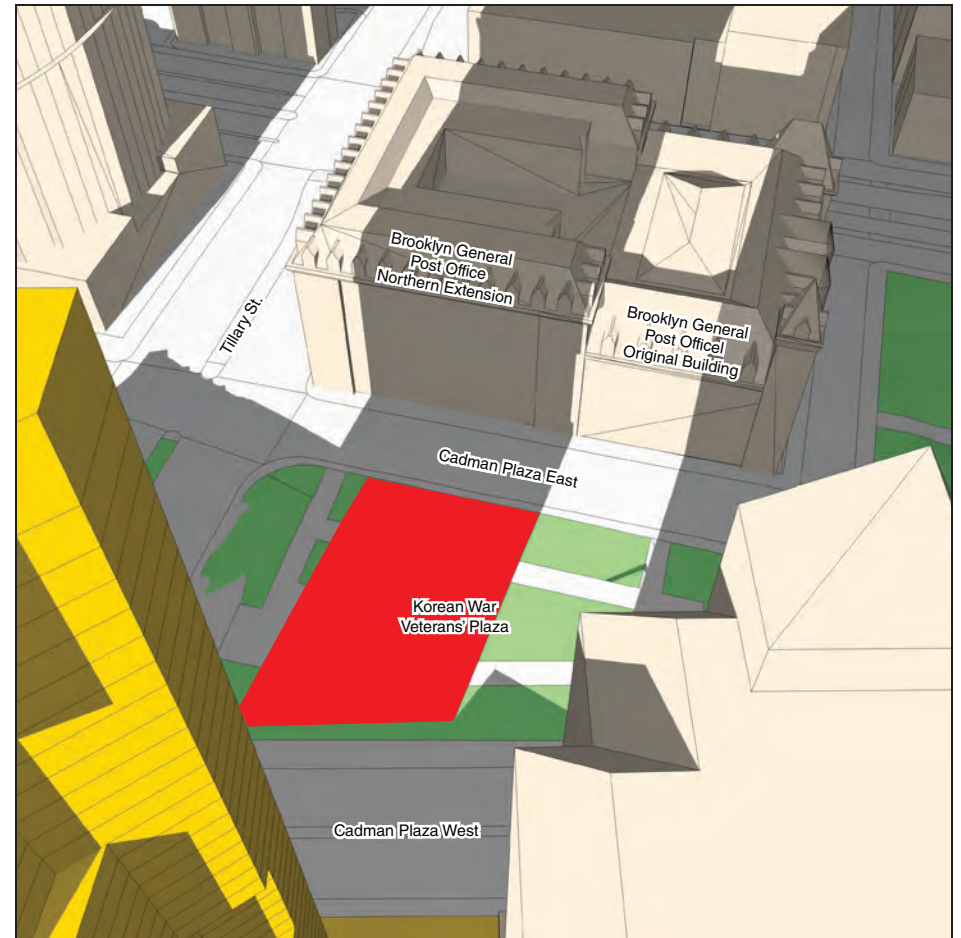
4:30 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.



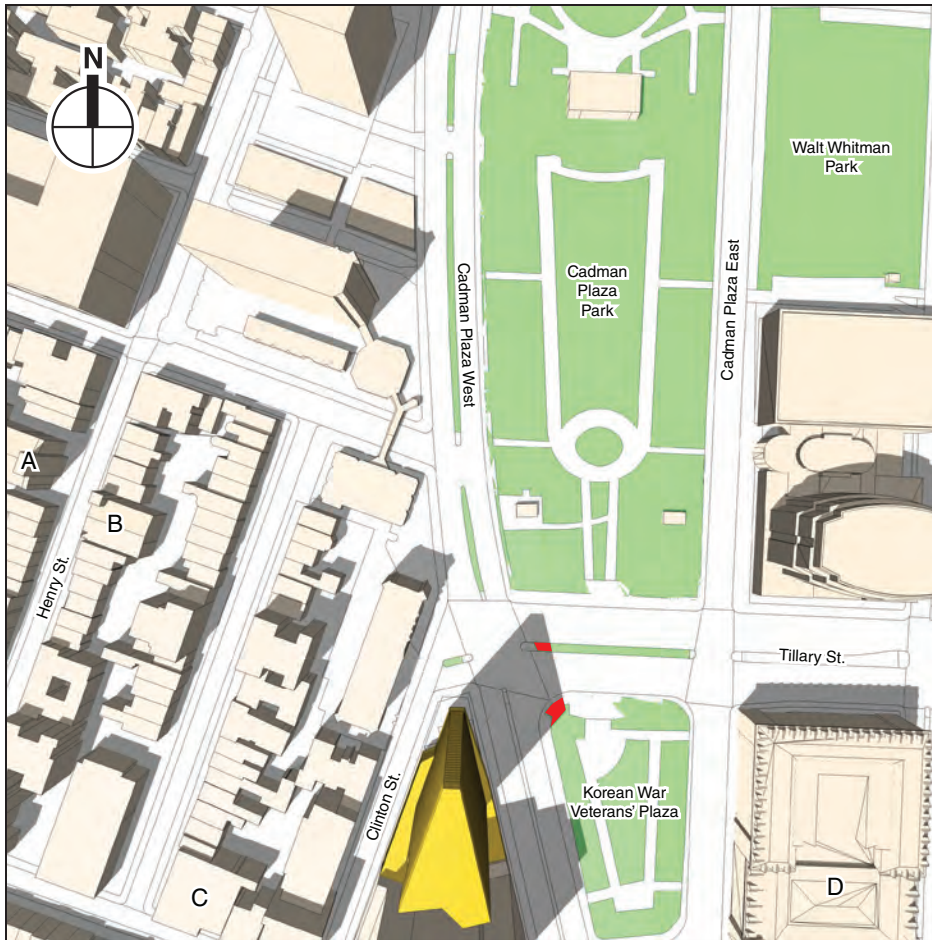
5:00 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*



5:18 PM

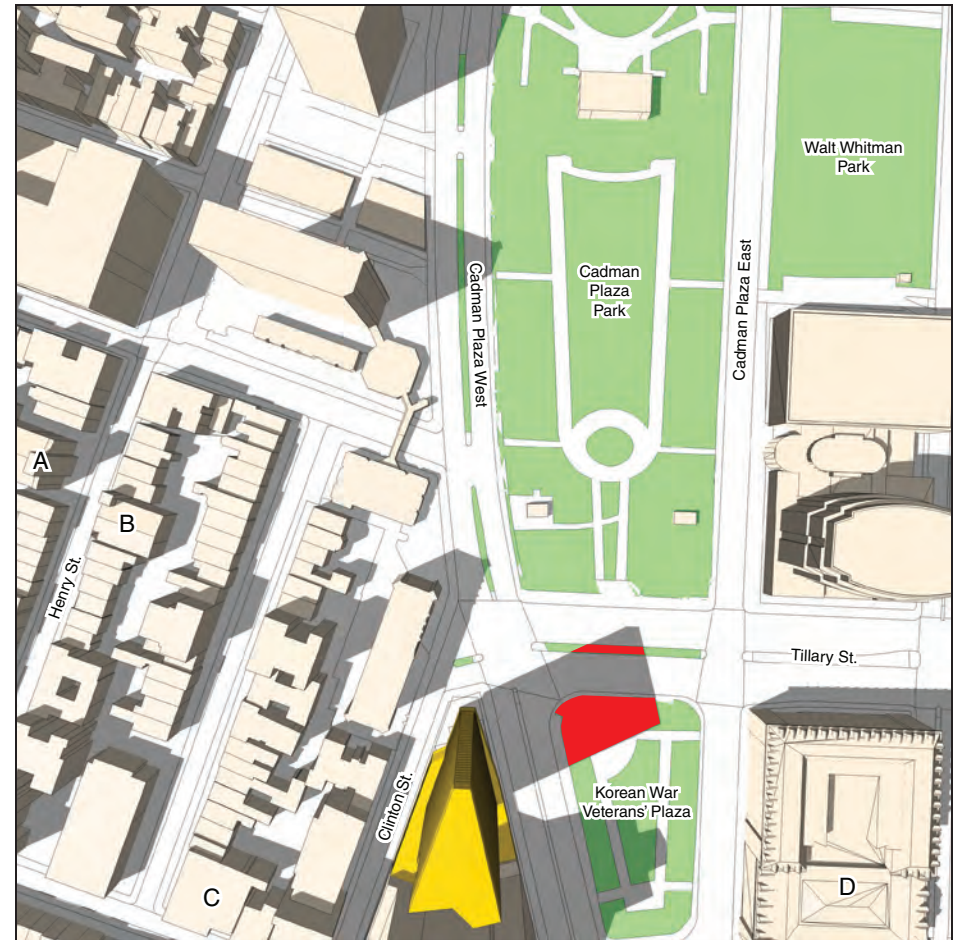
Daylight Savings Time was not used, per CEQR Technical Manual guidelines.



1:00 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

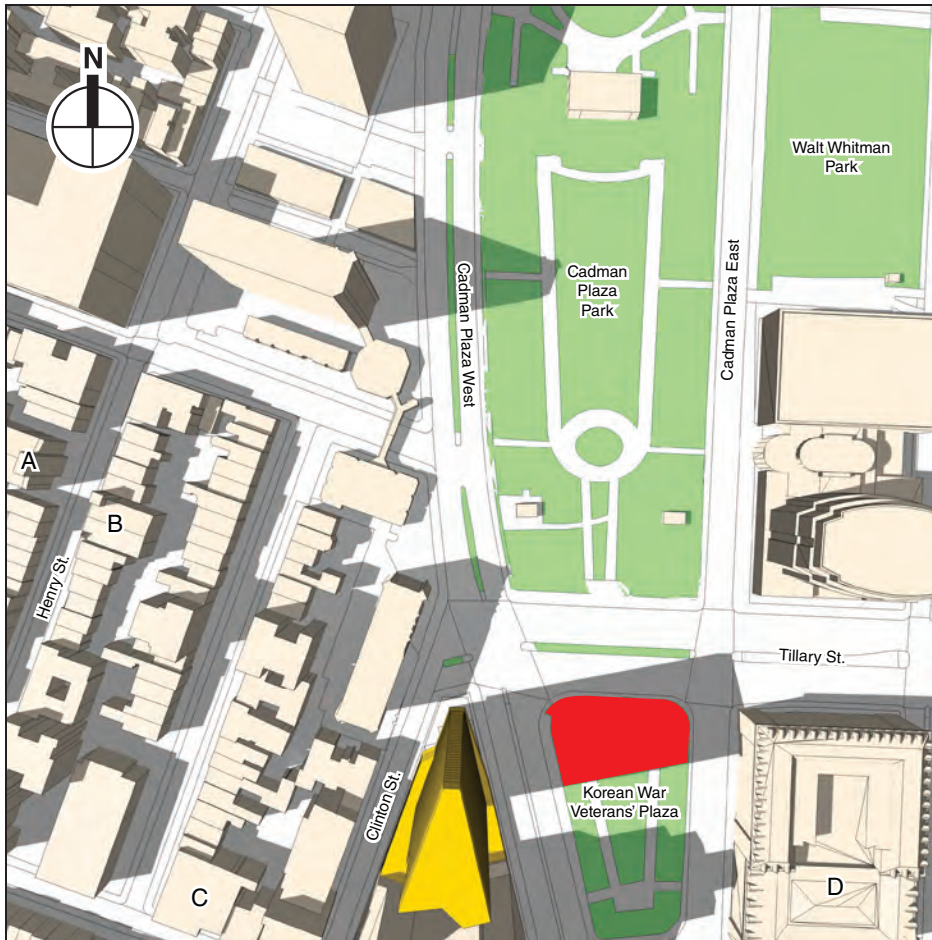
- A *First Presbyterian Church*
- B *Zion German Evangelical Lutheran Church*
- C *First Unitarian Church*
- D *Brooklyn General Post Office*

280 Cadman Plaza West

2:00 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

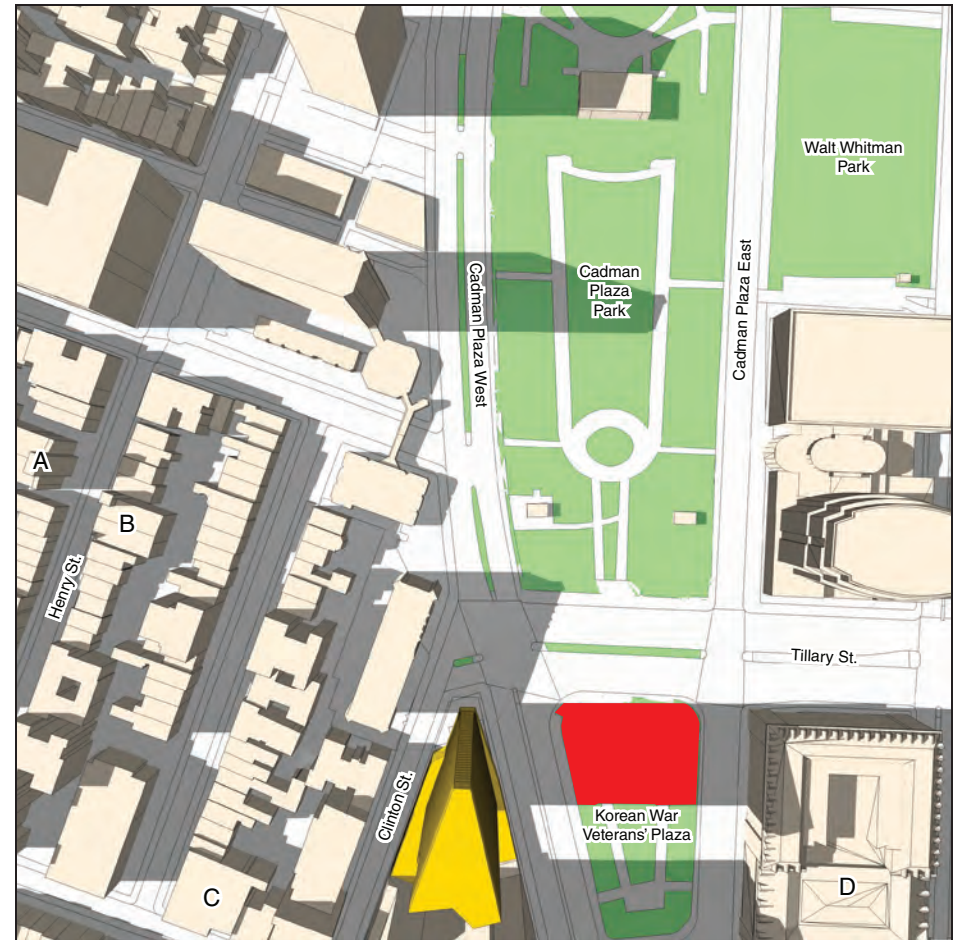
June 21
Figure F-14



3:00 PM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

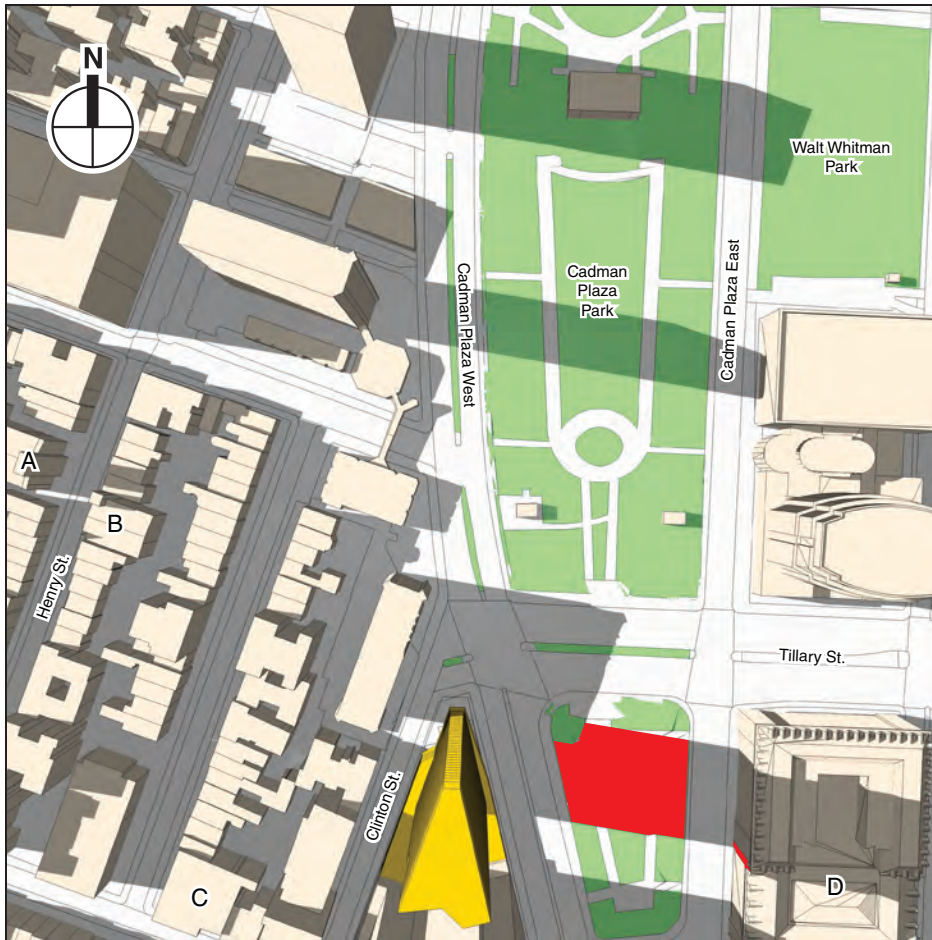
- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

4:00 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

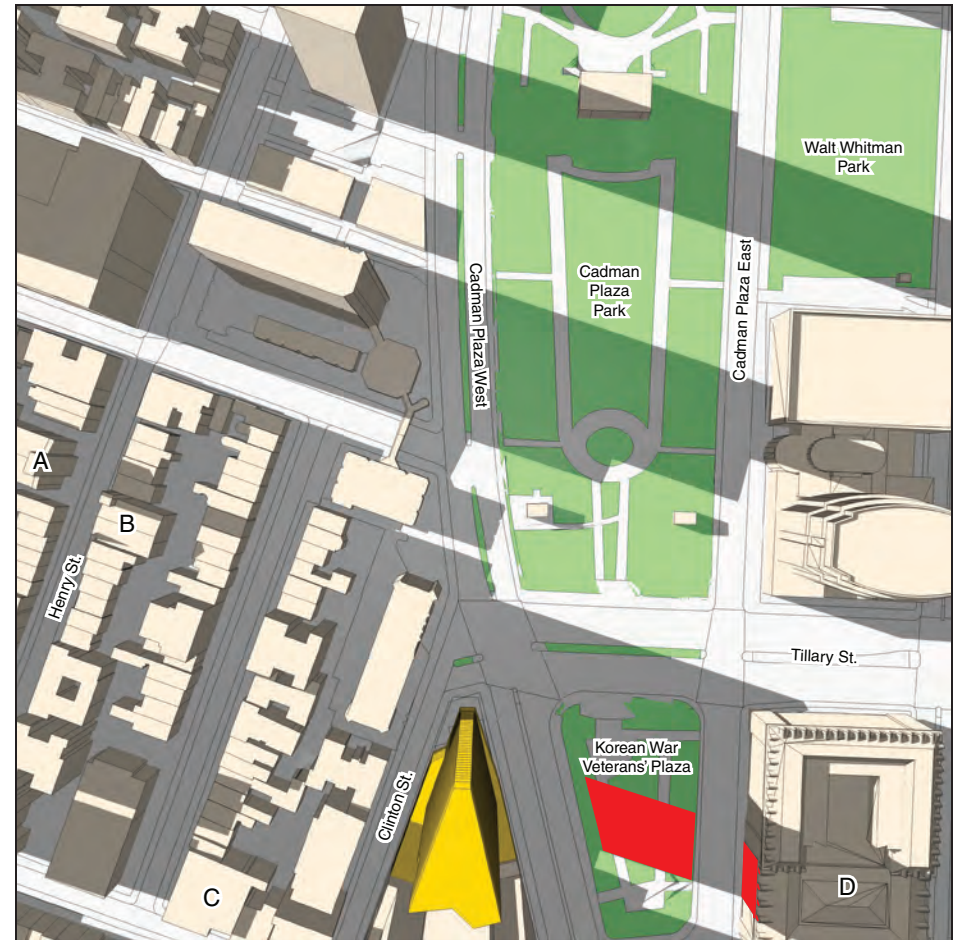
June 21
Figure F-15



5:00 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

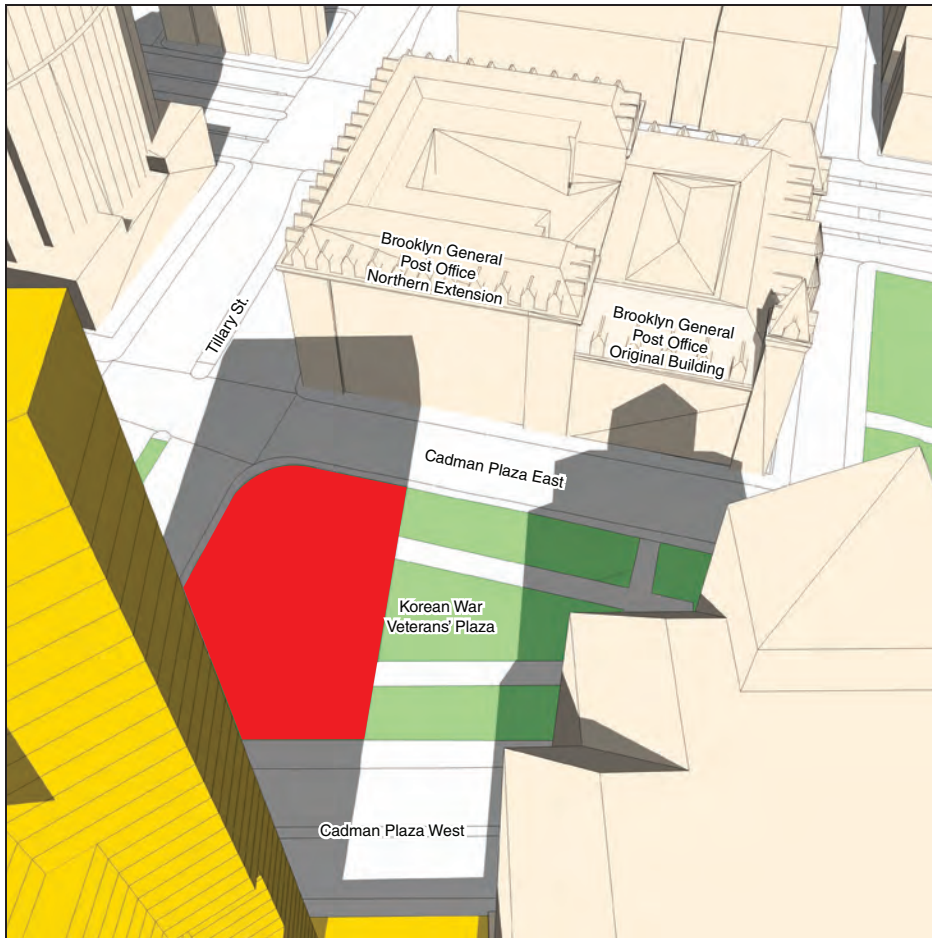
- A *First Presbyterian Church*
- B *Zion German Evangelical Lutheran Church*
- C *First Unitarian Church*
- D *Brooklyn General Post Office*

280 Cadman Plaza West

6:00 PM

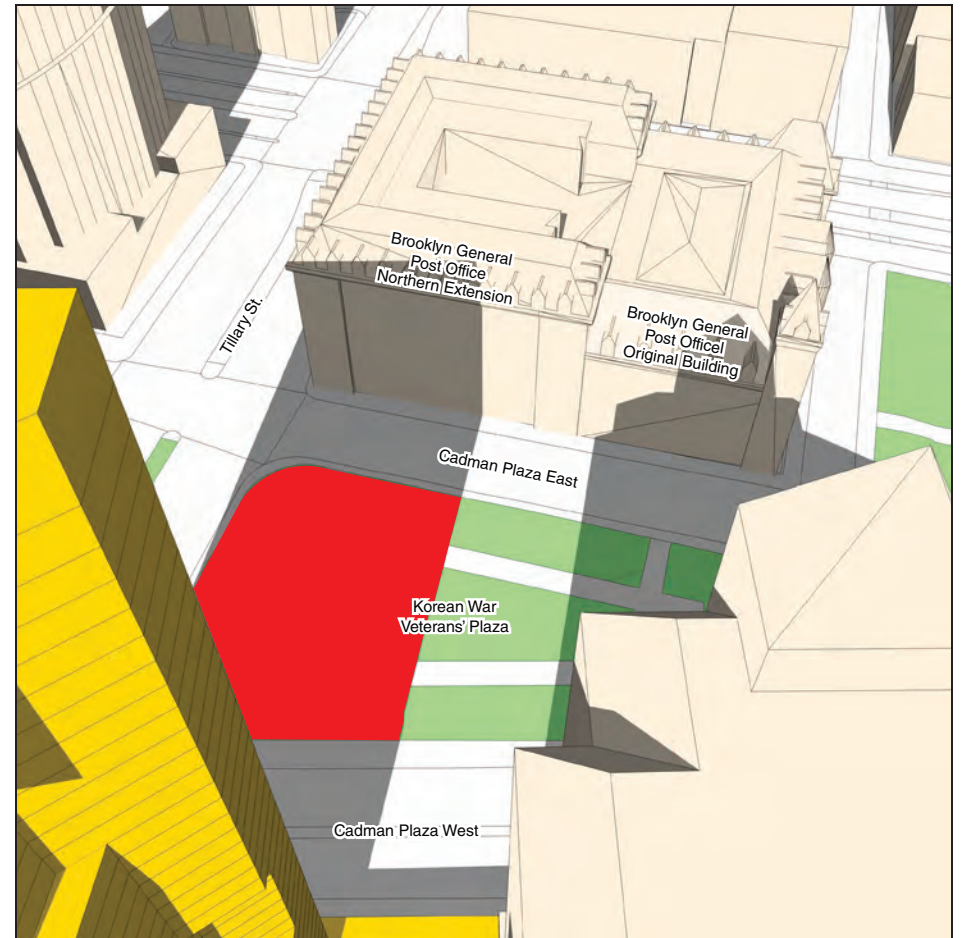
Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

June 21
Figure F-16



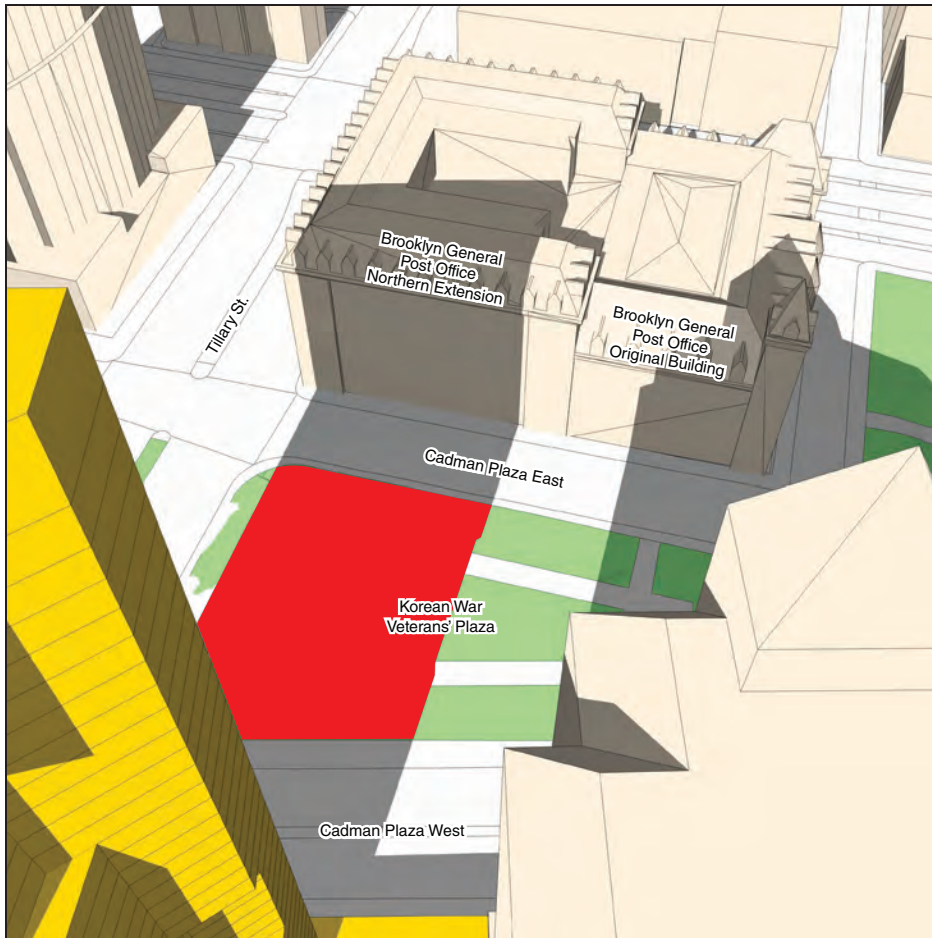
3:15 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*



3:45 PM

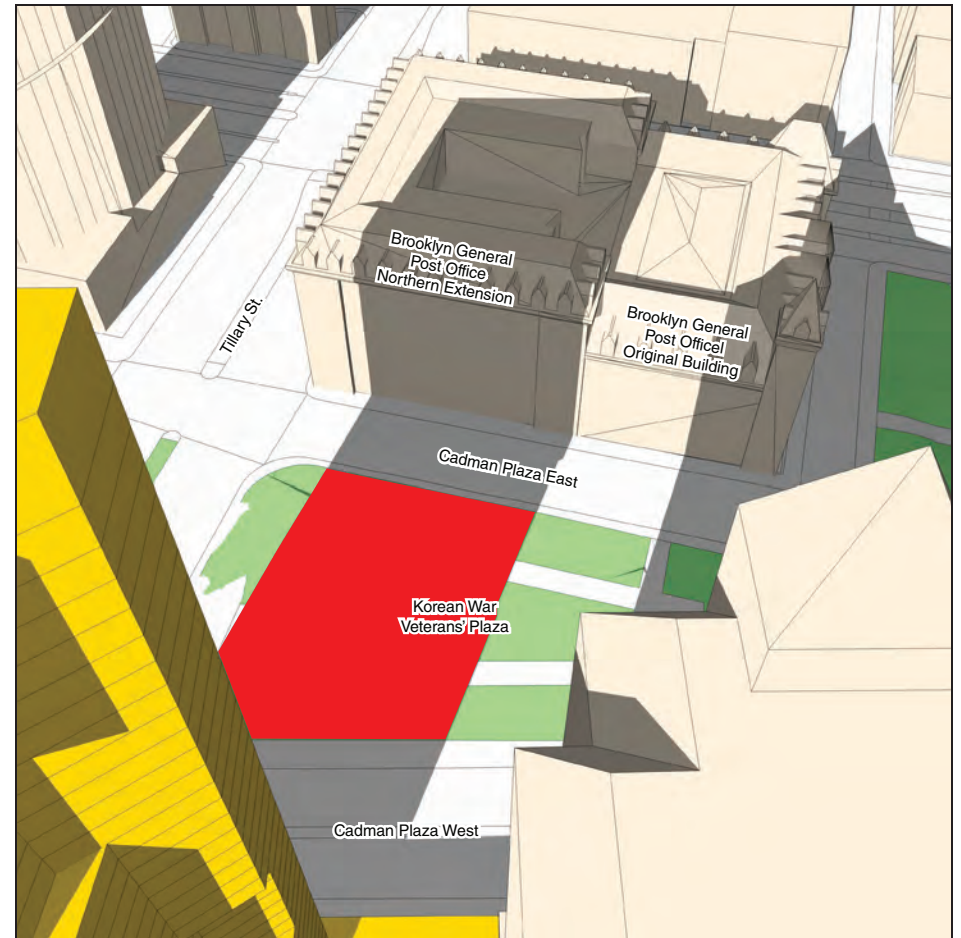
Daylight Savings Time was not used, per CEQR Technical Manual guidelines.



4:15 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

280 Cadman Plaza West



4:45 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

June 21 - View East
Figure F-18



5:15 PM

- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*

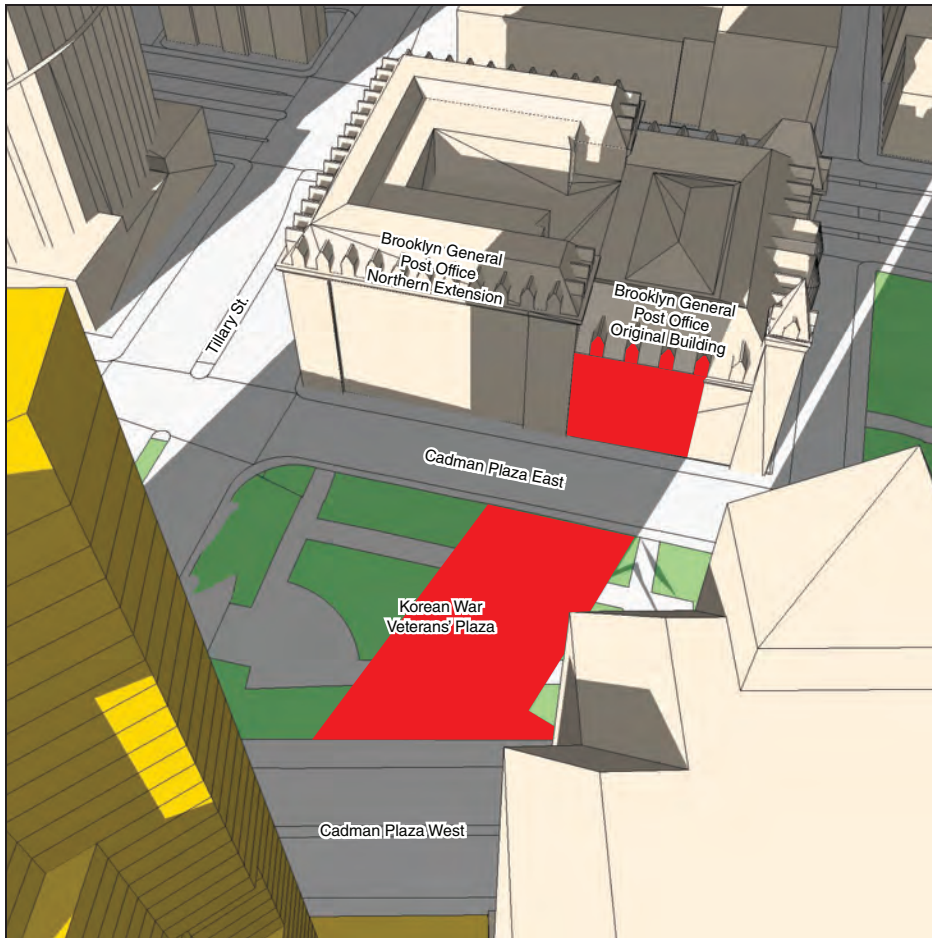
280 Cadman Plaza West



5:45 PM

Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

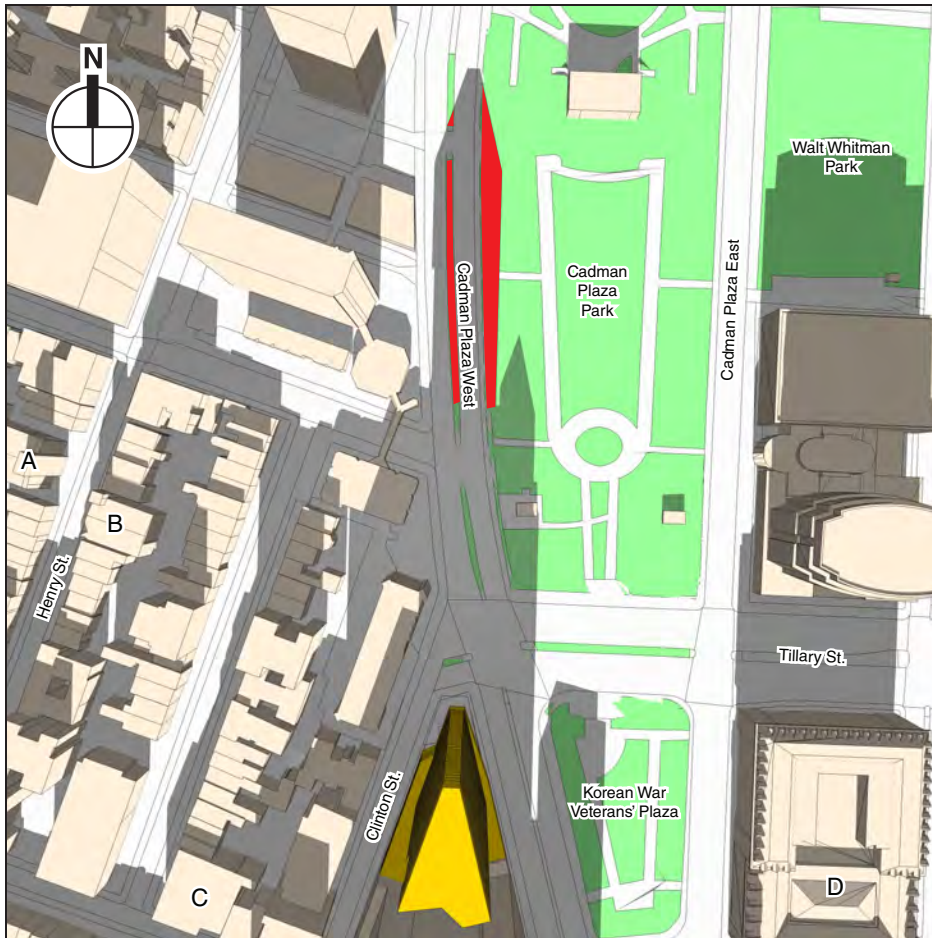
June 21 - View East
Figure F-19



Daylight Savings Time was not used, per CEQR Technical Manual guidelines.

6:00 PM

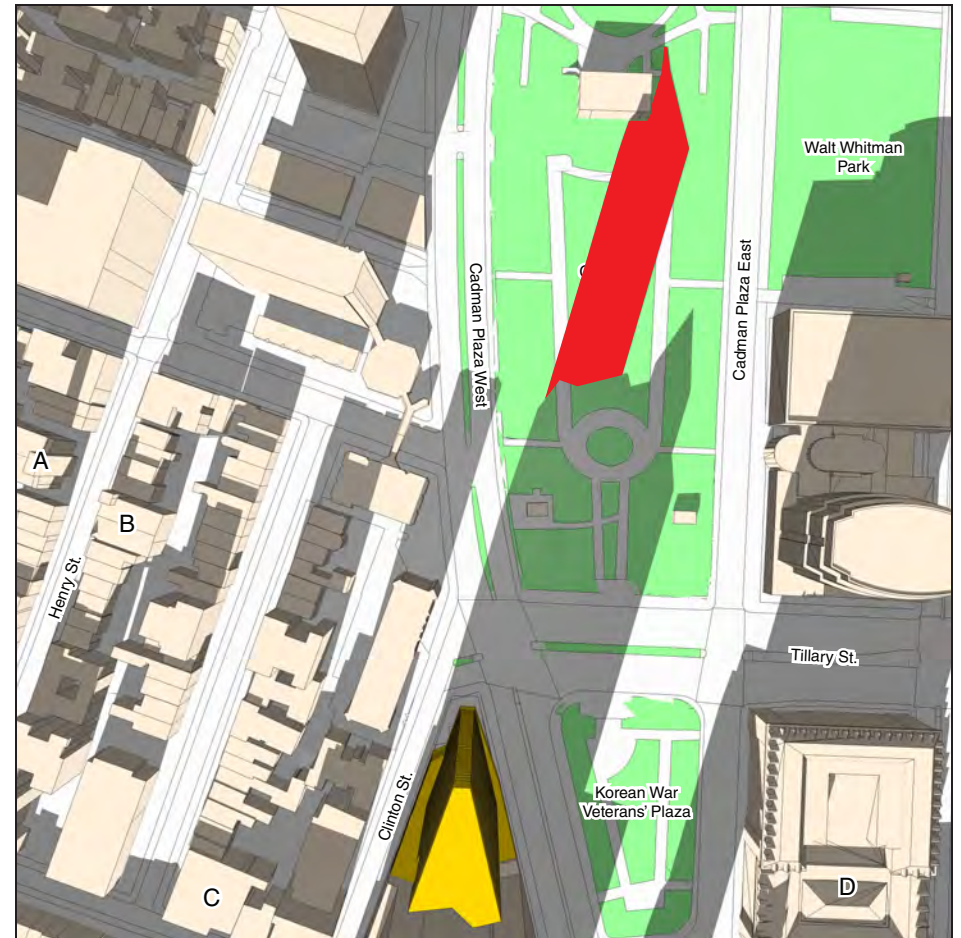
- Proposed Building*
- Publicly-Accessible Open Space and Greenstreets Medians*
- Incremental Shadow on Sunlight-Sensitive Resource*



12:00 PM

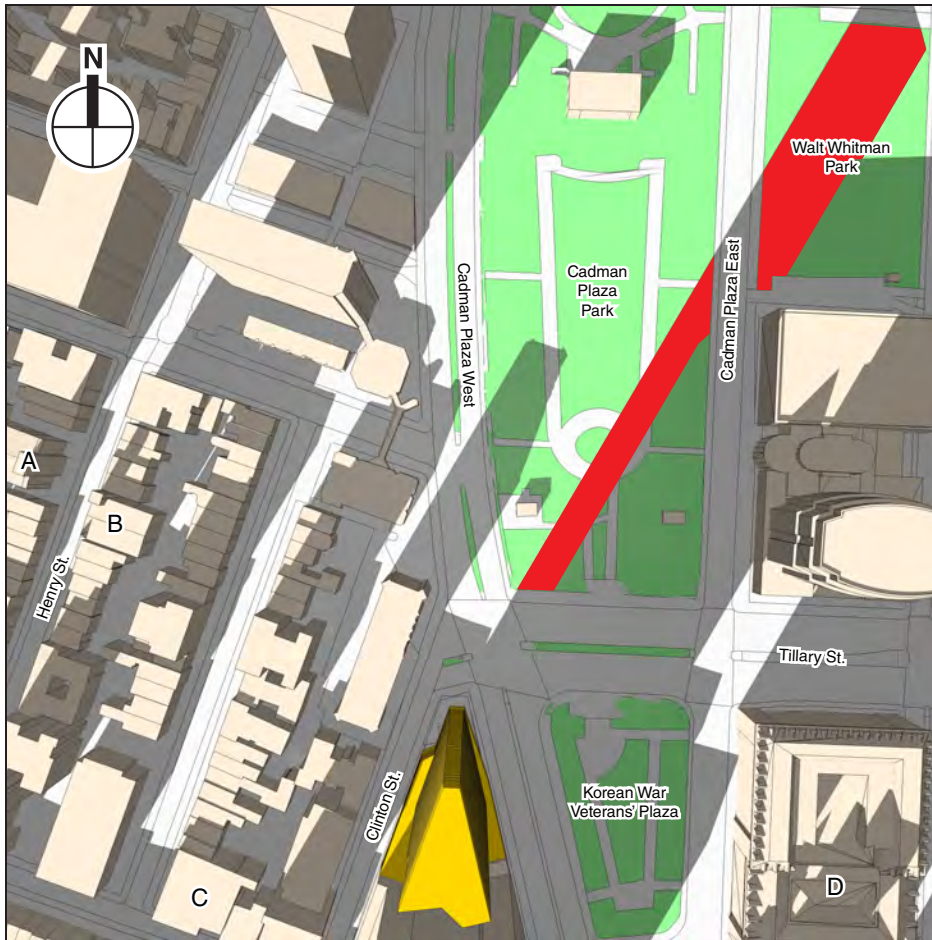
- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

1:00 PM

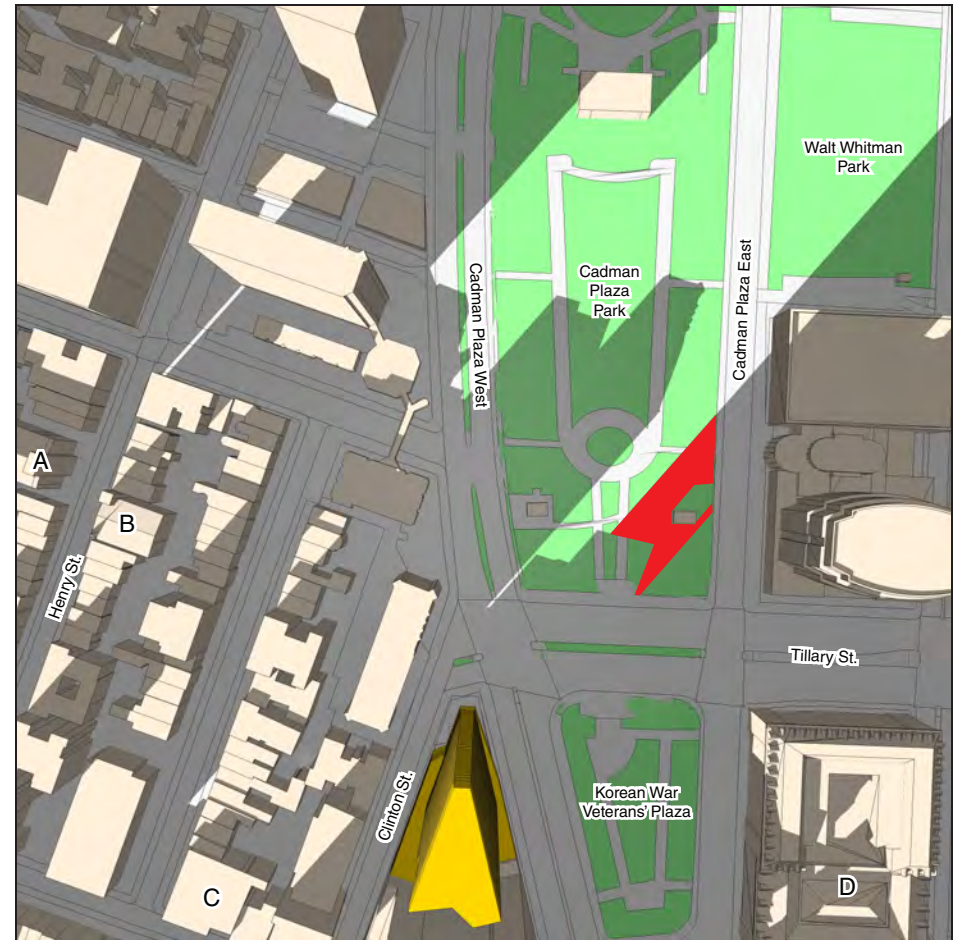
December 21
Figure F-21



2:00 PM

- Proposed Building
- Publicly-Accessible Open Space and Greenstreets Medians
- Incremental Shadow on Sunlight-Sensitive Resource

- A First Presbyterian Church
- B Zion German Evangelical Lutheran Church
- C First Unitarian Church
- D Brooklyn General Post Office

280 Cadman Plaza West

2:53 PM

December 21
Figure F-22

The detailed analysis confirmed that the following resources would not receive project-generated shadows, due to intervening buildings: **Brooklyn Bridge Park**, the **Brooklyn Heights Promenade**, the **Fruit Street Sitting Area**, **McLaughlin Park**, **MetroTech Commons** open space, and the **First Unitarian Church**.

MARCH 21/SEPTEMBER 21 (FIGURES F-5 TO F-7)

March is considered the beginning of the growing season in New York City, and September 21, which has the same shadow patterns as March 21, is also within the growing season.

FIRST PRESBYTERIAN CHURCH AND ZION GERMAN EVANGELICAL LUTHERAN CHURCH

The First Presbyterian Church and the Zion German Evangelical Lutheran Church face each other on Henry Street between Pierrepont and Clark Streets, three blocks northwest of the development site. The front and south facades of the First Presbyterian Church are oriented toward the development site, while the rear and south facades of the Zion German Evangelical Lutheran Church face the development site.

Incremental shadow would pass across portions of the south and east (front) façades of the First Presbyterian Church, and portions of the south and east (rear) facades of the Zion German Evangelical Lutheran Church.

The new shadow on the First Presbyterian Church would be small and brief, lasting about 15 to 20 minutes, and the stained-glass windows on both facades would continue to receive large areas of sunlight during the affected time, 8:35 AM to 8:55 AM.

The south façade of the Zion German Evangelical Lutheran Church has a row of stained-glass windows opening on the sanctuary; in the center of the rear façade there is single stained glass window, also opening onto the sanctuary. Incremental shadow would move onto the south façade at 8:30 AM, and onto the window in the rear façade 15 minutes later. For approximately 10 minutes, from 8:55 AM to 9:05 AM, both facades would be fully in incremental shadow. The incremental shadow would begin to move off the south façade at 9:05 AM and would exit the south façade completely at 9:25 AM, and the rear facade by 9:40 AM. The windows on the south and rear facades would otherwise be mostly or completely in sunlight throughout the day.

All the direct sunlight on the south and rear facades would be eliminated for only approximately 10 minutes on this analysis day. At other times during the period between 8:30 AM and 9:40 AM, one or more windows on the south and rear facades would continue to receive direct sun, and all the windows of the sanctuary, including those on the north façade, would continue to be lit with ambient daylight. While the incremental shadow could potentially have the effect of reducing the enjoyment of the relevant windows by whomever might be in the sanctuary at that time, the limited duration of the shadows would not substantially affect this resource or its appreciation by the public. The incremental shadow would only occur on this one analysis day and not in winter or in the summer between May and August. Given these factors, the project would not result in a significant adverse shadow impact to this resource.

GREENSTREETS MEDIANS

There are three Greenstreets medians in the study area. The Greenstreets median where Clinton Street meets Cadman Plaza West, near the northern boundary of the development site, contains a tree, a planted median, and some individual planter pots. The Greenstreets median that extends up the middle of Cadman Plaza West, from Tillary Street northward beyond the study area,

contains a narrow planted strip one to two feet wide, containing various plantings and small trees. The Greenstreets median on Tillary Street between Cadman Plaza West and Cadman Plaza East contains planted areas of trees and shrubs.

The Clinton Street Greenstreets median would receive an hour and 45 minutes of incremental shadow. Incremental shadow would pass across the Cadman Plaza West Greenstreets median between 11:55 AM and 12:45 PM. The Tillary Street Greenstreets median would receive incremental shadow from 12:55 PM until the end of the analysis day at 4:29 PM. The plantings would continue to receive four to six hours of direct sunlight on this analysis day, and therefore the incremental shadow would not significantly affect the viability of the vegetation of these resources.

CADMAN PLAZA PARK

Cadman Plaza Park offers both active and passive recreational open space, including walkways, benches, and an artificial turf playing field in the large central area. Incremental shadow would move across the southern part of this park from 12:20 PM to 3:45 PM on this analysis day. This area mostly contains mature trees and fenced off lawn, plus a central area of walkways and benches. During the referenced time period, large areas elsewhere in the park remain in sun during the affected period. Since the trees and plantings in the affected area would continue to receive a minimum of four to six hours of direct sunlight, during the morning and the mid-afternoon, their health would not be significantly affected by the incremental shadow.

KOREAN WAR VETERANS' PLAZA

Korean War Veterans' Plaza contains trees, landscaping, walkways, and benches. It is in moderate condition and has low usage rates, based on site visits. From 2:25 PM until the end of the analysis day at 4:29 PM, incremental shadow would fall on an area in the northern part of the Korean War Veterans' Plaza. The new shadow would be small at first, and grow larger near the end of the analysis period, covering approximately the northern quarter of the space. The trees, shrubs, and lawn in this portion of the park would continue to receive a minimum of four to six hours of direct sunlight on this analysis day. The new shadow would not eliminate the remaining sunlight from the park, and there would be seating areas in direct sun in other areas of this park, as well as in Cadman Plaza Park across the street and Columbus Park to the south. The incremental shadow on this resource would therefore not result in a significant adverse impact.

CATHEDRAL BASILICA OF ST. JAMES

A small area of new shadow would fall on the façade of the Cathedral Basilica of St. James for the final three minutes of the analysis day. The brief duration and limited extent of new shadow would not cause a significant adverse impact to this historic resource.

MAY 6/AUGUST 6 (FIGURES F-8 TO F-13)

May 6 falls halfway between the March 21 equinox and the June 21 summer solstice. August 6 falls halfway between June 21 and the September 21 equinox, and has the same shadow patterns as May 6. The May 6/August 6 analysis day is representative of the growing season in the city. Shadows on this day are shorter than on the equinoxes, and the length of the day is longer.

Walt Whitman Park, First Presbyterian Church, Zion German Evangelical Lutheran Church, and the Cathedral Basilica of St. James would not receive any incremental shadows from the proposed building on this analysis day.

GREENSTREETS MEDIANS

The Greenstreets medians would receive incremental shadows on this analysis day, ranging from 10 minutes to nearly three hours. All three Greenstreets medians would continue to receive direct sunlight for more than four to six hours over the course of this late spring and summer analysis day, and thus their plantings would not be significantly affected by the new shadows.

CADMAN PLAZA PARK

The proposed building's shadow would pass across Cadman Plaza Park over an approximately two-hour period in the early afternoon, but the shadow would only extend approximately 20 feet into the southern edge of the park. The small extent of this incremental shadow would not cause a significant adverse shadow impact to the park.

KOREAN WAR VETERANS' PLAZA

Incremental shadow would fall on a portion of Korean War Veterans' Plaza for a little over four hours in the afternoon on this analysis day. All areas of the park would continue to receive more than four to six hours of direct sunlight over the course of the day, and therefore the health of the vegetation would not be significantly affected by the new shadow. Areas of the park would remain in sunlight throughout the affected period, for users who seek direct sun. Sunlit seating areas are also available in Cadman Plaza Park across the street during the affected period. Therefore, the incremental shadow on this open space would not cause a significant adverse shadow impact to the park.

BROOKLYN GENERAL POST OFFICE

At 2:50 PM, incremental shadow would move onto the north edge of the western façade of the Brooklyn General Post Office. This shadow would move clockwise/southward across the west façade, remaining limited to the northern quarter of the façade for the next hour, while other portions of the façade remain in sun. By 4:30 PM the incremental shadow would cover about two-thirds of the larger, northern portion of the building (the 1930s addition), with the remaining part of the façade partially in sun and partially in existing shadow. Project-generated shadow would continue to cover a large portion of the façade until the end of the analysis day at 5:18 PM. The shadow would never reach far south enough to fall on the original building in the southern part of the complex, which features more deeply carved stone work and ornamentation than the newer, northern part of the complex. Parts of the façade would remain in sun throughout this time, particularly on the original building. In addition, the complex occupies the full block between Johnson, Adams, and Tillary Streets and Cadman Plaza East, and the other three building façades would not be affected by project-generated shadow and could continue to be appreciated as in existing conditions. Therefore, because parts of the western façade would remain in sunlight throughout the affected period, the other three building facades could continue to be appreciated as in existing conditions, and because the incremental shadow would only fall on the newer, less deeply-carved addition, the incremental shadow would not significantly affect the opportunity to appreciate the architectural features of this resource.

JUNE 21 (FIGURES F-14 TO F-20)

June 21 has the longest amount of daylight of the year, with an analysis period of 12 hours. Shadows fall to the southwest early in the morning and to the southeast late in the afternoon, and shadows at midday on June 21 are shorter than at any other time of year. June 21 is also in the growing season.

The Cadman Plaza West Greenstreets Median, Cadman Plaza Park, Walt Whitman Park, First Presbyterian Church, Zion German Evangelical Lutheran Church, and the Cathedral Basilica of St. James would not receive any incremental shadows from the proposed building on this analysis day.

GREENSTREETS MEDIANS

On this analysis day, the Greenstreets medians on Tillary Street would receive incremental shadow for approximately two hours, and the Greenstreets median on Clinton Street would receive incremental shadow for approximately 45 minutes, from 11:30 am to 12:15 pm. The medians would continue to receive far more than four to six hours of direct sunlight on this analysis day, and thus would not be significantly affected by the new shadow.

KOREAN WAR VETERANS' PLAZA

Incremental shadow would fall on Korean War Veterans' Plaza for five hours in the afternoon on this analysis day. All areas of the park would continue to receive more than four to six hours of direct sunlight over the course of the day, and thus the health of the vegetation would not be significantly affected by the new shadow. Areas of the park would remain in sunlight throughout the affected period, for users who seek direct sun. Sunlit seating areas also would be available in Cadman Plaza Park across the street during the affected period.

BROOKLYN GENERAL POST OFFICE

At 4:48 PM on this analysis day, incremental shadow would begin to move onto the southern (original) portion of the Brooklyn General Post Office's western façade, which is considered sunlight-sensitive. The new shadow would move southward across this portion of the west façade until the end of the analysis day at 6:01 PM. As shown in **Figure F-19** by 5:45 PM incremental shadow would cover much of this portion of the facade, with the remaining part of the façade partially in sun and partially in existing shadow. Project-generated shadow would continue to cover a large portion of the façade until the end of the analysis day at 6:01 PM. Parts of the southern portion of the western façade would remain in sun throughout this time. Therefore, because parts of the southern portion of the western façade would remain in sunlight throughout the affected period, the incremental shadow would not significantly affect the opportunity to appreciate the architectural features of this resource.

DECEMBER 21 (FIGURES F-21 TO F-22)

December 21, representing the winter months, does not fall within New York's growing season, according to the *CEQR Technical Manual*. Shadow falling on vegetation in winter is not generally considered to cause a significant adverse impact. However, winter shadow can adversely impact users of open space who may rely on sunlight for warmth.

The Korean War Veterans' Plaza, First Presbyterian Church, Zion German Evangelical Lutheran Church, Brooklyn General Post Office, and the Cathedral Basilica of St. James would not receive any incremental shadows from the proposed building on this analysis day.

GREENSTREETS MEDIANS

New shadow would fall on the three Greenstreets medians, for durations between 30 and 38 minutes, on this analysis day. The brief duration of the incremental shadow on these resources would not result in a significant adverse impact.

CADMAN PLAZA PARK

New shadow would fall on Cadman Plaza Park between noon and 2:53 PM on this analysis day. The new shadow would move across the central turf area and the seating areas to either side of it for much of this duration; however, large areas of the park would remain in direct sunlight during this time, particularly the seating areas along the east and west sides. Therefore, the new shadow would not result in a significant adverse shadow impact on this resource.

WALT WHITMAN PARK

Walt Whitman Park, located east of Cadman Plaza Park, contains landscaping, tables, and chairs. On this analysis day, incremental shadow would move across a portion of the park for approximately an hour in the afternoon. Much of this park would remain in sun at this time. Therefore, the use of the park would not be substantially affected by the new shadow. *

A. INTRODUCTION

This attachment considers the potential of the proposed mixed-use building on the development site to affect architectural and archaeological resources. The proposed actions would result in the redevelopment of the Brooklyn Heights branch of the Brooklyn Public Library, located at 280 Cadman Plaza West (the development site). The proposed building would contain approximately 407,989 gross square feet (gsf) of uses, including: approximately 21,500 gsf of a replacement branch library; approximately 19,800 sf of community facility use; 650 gsf of retail use; approximately 308,082 gsf of residential use; and a 35-space, approximately 38,098-gsf below-grade parking facility. During the construction of the proposed project, the library would be relocated to a temporary facility (the “interim site”) located at ~~443~~ 95 Remsen Street.

This attachment assesses the potential impacts of the proposed project on historic and cultural resources for the development site and project area, the interim site, and their surrounding study areas as compared with conditions without the proposed project. A historic and cultural resources analysis of the proposed off-site affordable housing developments at 911-917 Atlantic Avenue and 1041-1047 Fulton Street is provided in Attachment M, “Analysis of the Proposed Off-Site Affordable Housing.”

PRINCIPAL CONCLUSIONS

The analysis concludes that the proposed mixed-use building on the development site would not result in any significant adverse impacts to historic and cultural resources.

B. METHODOLOGY

Consistent with the guidance of the 2014 *CEQR Technical Manual*, in order to determine whether the proposed project could potentially affect architectural resources, this attachment considers whether the proposed mixed-use building on the development site would result in a physical change to any resource, a physical change to the setting of any resource (such as context or visual prominence), and, if so, whether the change is likely to alter or eliminate the significant characteristics of the resource that make it important. More specifically, as set forth in the *CEQR Technical Manual*, potential impacts to architectural resources may include the following:

- Physical destruction, demolition, damage, alteration, or neglect of all or part of an historic property;
- Changes to an architectural resource that cause it to become a different visual entity;
- Isolation of the property from, or alteration of, its setting or visual relationships with the streetscape, including changes to the resource’s visual prominence;

- Introduction of incompatible visual, audible, or atmospheric elements to a resource's setting;
- Replication of aspects of the resource so as to create a false historical appearance;
- Elimination or screening of publicly-accessible views of the resource;
- Construction-related impacts, such as falling objects, vibration, dewatering, flooding, subsidence, or collapse; and
- Introduction of significant new shadows, or significant lengthening of the duration of existing shadows, over an historic landscape or on an historic structure (if the features that make the resource significant depend on sunlight) to the extent that the architectural details that distinguish that resource as significant are obscured.

To evaluate potential effects due to on-site construction activities, and also to account for visual or contextual impacts, the study area for architectural resources is defined as extending 400 feet from the project area (see **Figure G-1**). Since the project would only result in interior renovation of the temporary library facility at ~~443~~ 95 Renssen Street, this analysis only evaluates potential effects due to on-site construction activities at the interim site. Therefore, the study area for architectural resources is defined as extending 90 feet from the interim site (see **Figure G-2**). As defined in the New York City Department of Building's (DOB) *Technical Policy and Procedure Notice (TPPN) #10/88*, adjacent construction is defined as any construction activity that would occur within 90 feet of an architectural resource.¹

Consistent with the guidance of the *CEQR Technical Manual*, designated architectural resources that were analyzed include: New York City Landmarks (NYCL), Interior Landmarks, Scenic Landmarks, New York City Historic Districts (NYCHD); resources calendared for consideration as one of the above by the New York City Landmarks Preservation Commission (LPC); resources listed on or formally determined eligible for inclusion on the State and National Registers of Historic Places (S/NR), or contained within a district listed on or formally determined eligible for listing on the Registers; resources recommended by the New York State Board for listing on the Registers; and National Historic Landmarks (NHL). Additionally, a survey was conducted to identify any previously undesignated properties in the study area that appear to be potentially eligible for NYCL designation or S/NR listing.

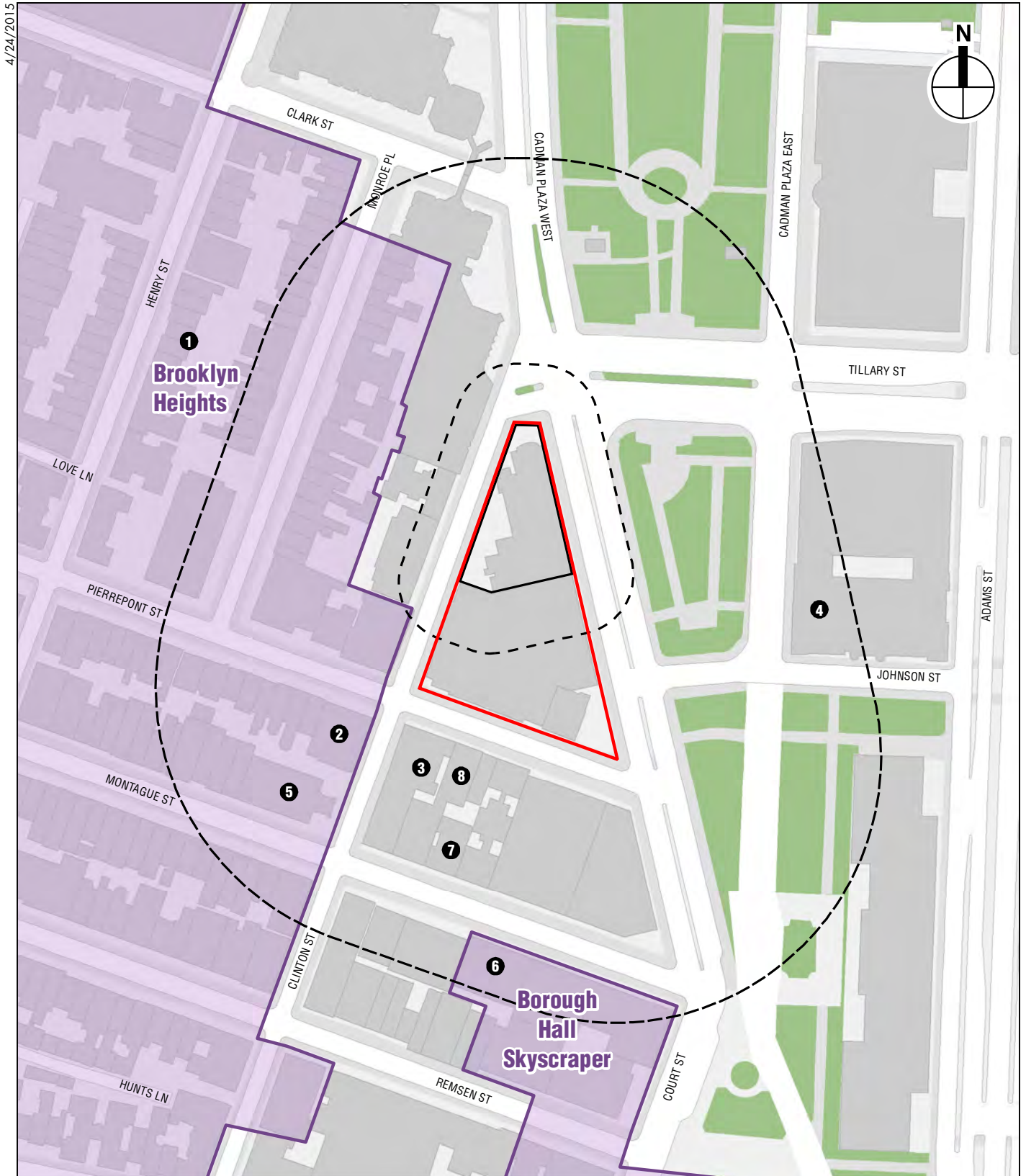
The study area for archaeological resources is defined as the area where subsurface disturbance would occur. In a letter dated November 21, 2014, LPC determined that the development site is not archaeologically sensitive (see **Appendix 1**). No subsurface disturbance on the interim site is anticipated as a result of the proposed project. Therefore, an analysis of archaeological resources is not warranted and this attachment focuses on architectural resources only.

C. EXISTING CONDITIONS

DEVELOPMENT SITE AND PROJECT AREA

The development site is located at the northern end of the block bounded by Cadman Plaza West to the east, Clinton Street to the west, Tillary Street to the north, and Pierrepont Street to the

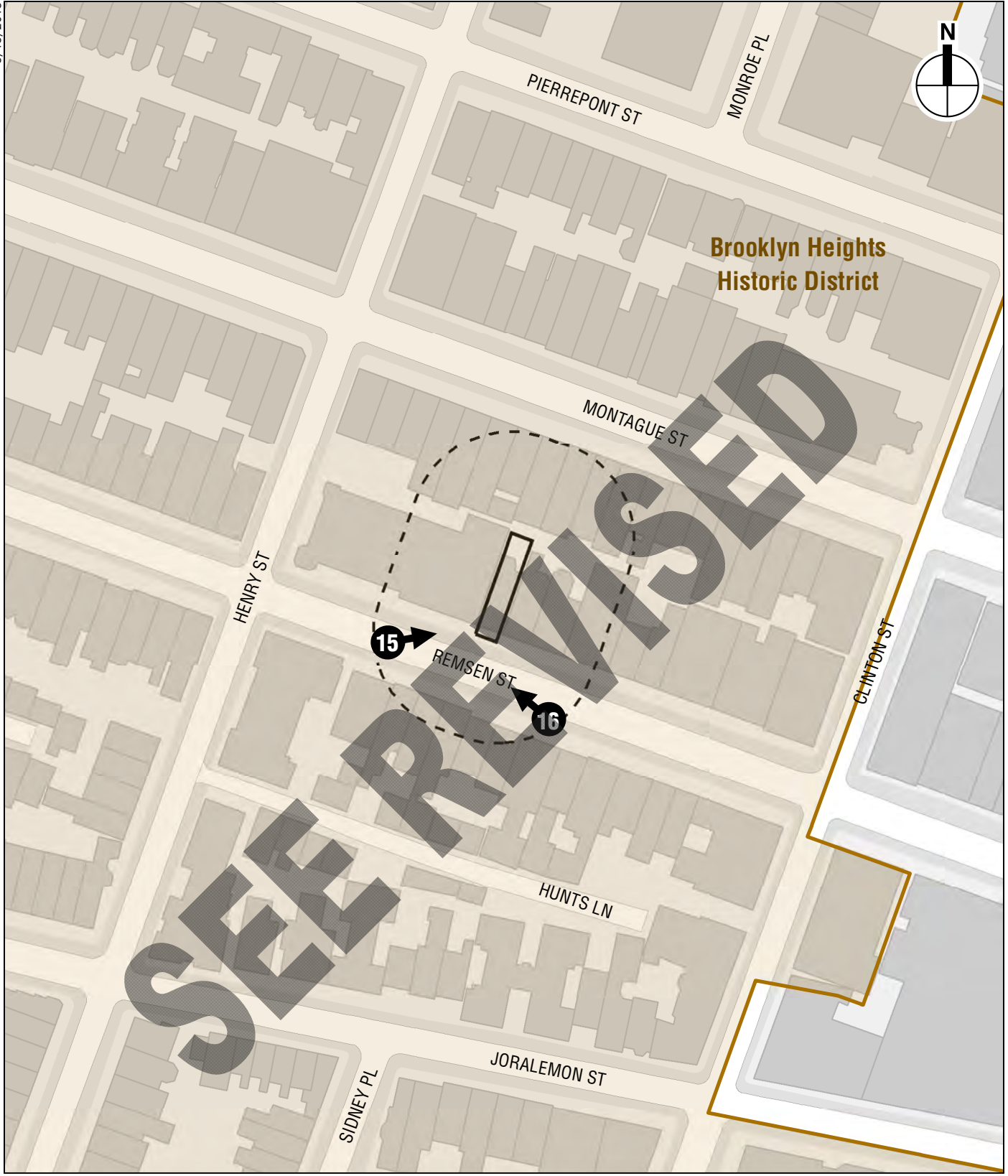
¹ TPPN #10/88 was issued by DOB on June 6, 1988, to supplement Building Code regulations with regard to historic structures. TPPN #10/88 outlines procedures for the avoidance of damage to historic structures resulting from adjacent construction, defined as construction within a lateral distance of 90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



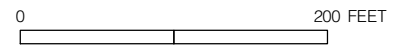
- Project Area
- Study Area (400-foot boundary)
- Development Site
- Study Area (90-foot boundary)
- 1 Architectural Resources
- Historic District Boundary

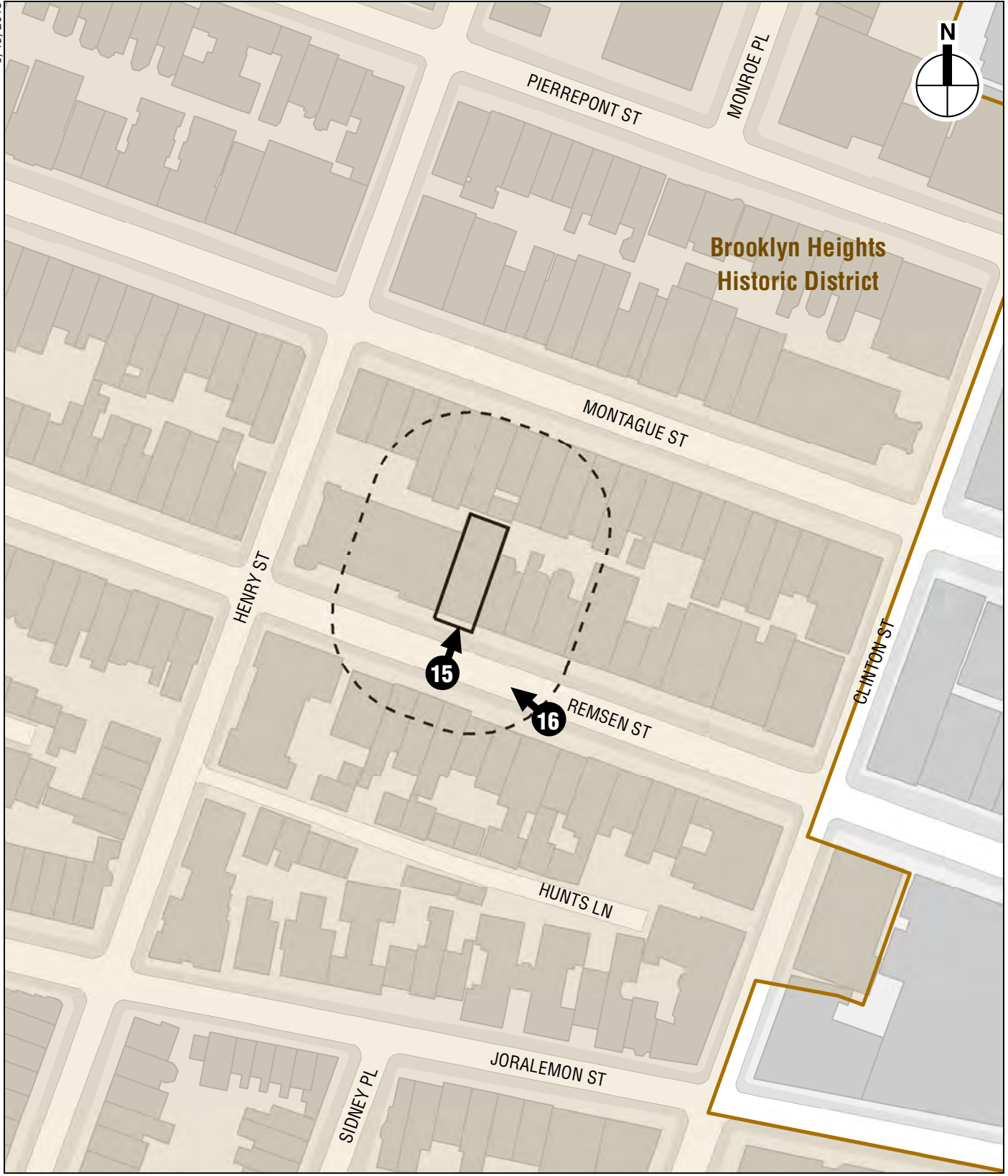
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


Historic and Cultural Resources Reference Map
Figure G-1

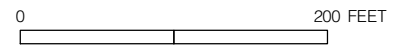


- Interim Site
- Study Area (90-foot boundary)
- Photograph Locations and View Direction





-  Interim Site
-  Study Area (90-foot boundary)
-  Photograph Locations and View Direction



south. The development site is located on Block 239, Lot 16 and currently contains the Brooklyn Heights branch of the Brooklyn Public Library (see Views 1-3 of **Figures G-3 and G-4**).

The existing library on the development site was built in 1962 and designed by the firm of Keally and Patterson. Francis Keally, together with Alfred Morton Githens, also was the architect for the central branch of the Brooklyn Public Library, on Grand Army Plaza. The Brooklyn Heights branch library building is two stories tall and faced in stone, with shallow reliefs around the main entrance on the Cadman Plaza West facade. The reliefs were designed by Clemente Spampinato and depict literature, crafts, science, knowledge, art, industry, and business. The rear of the building, on Clinton Street, includes a service entrance and a small circulation area. The library was extensively renovated in 1990-1993. In addition to interior alterations, the renovation included a large addition at the northern end of the building. The addition is faced in polished dark red stone and cast stone, with a large window overlooking an enclosed seating area at the intersection of Clinton Street and Cadman Plaza West.

The library is on a zoning lot that also includes Block 239, Lot 1, and would include Block 239, Lot 3, as part of the proposed actions. Lot 1 is occupied by 1 Pierrepont Plaza, a 19-story, approximately 726,000 gsf commercial office building built in 1987 (see View 4 of **Figure G-4**). The other tax lot on the block, Lot 3, is occupied by 153 Pierrepont Street, a 6-story, approximately 28,000 gsf building, which is owned and occupied by the St. Ann's School (see View 5 of **Figure G-5**). 153 Pierrepont Street was originally four row houses built 1850-1870, which were combined together circa 1897 as the Wilson Building, which was used by the Commonwealth Masonic Lodge. The Lodge moved out of the building in 1910, and the building was converted for office use in 1915. Around 1925-1927, the building underwent a major renovation for another commercial office use and received a new façade at that time. St. Ann's School purchased the building in 2001; GVZ Architects renovated the building for the school's use circa 2003.

As part of the proposed actions, Lot 3 would be merged with the zoning lot containing Lots 1 and 16. Lots 1, 3 and 16 are collectively referred to here as the "project area."

Neither the existing building on the development site, nor the existing buildings on Lots 1 and 3, are identified as potential architectural resources.

PROJECT AREA STUDY AREA

There are eight known architectural resources located in the 400-foot study area. These resources are described below and mapped on **Figure G-1**.

BROOKLYN HEIGHTS HISTORIC DISTRICT (NHL, S/NR-LISTED, NYCHD)

The Brooklyn Heights Historic District is New York City's first historic district, designated in 1965. Following the establishment of the steam-powered Fulton Ferry in 1814, Brooklyn Heights became the first area of Brooklyn to be urbanized. Buildings within the historic district include: Federal-style houses from the 1820s and 1830s; brownstones in the Greek Revival and Gothic Revival styles from the 1840s; Italianate-style rowhouses from the 1850s; Queen Anne and Romanesque Revival row houses and mansions from the 1880s and 1890s; and English Gothic, Romanesque, and Colonial-inspired apartment buildings from the 1920s and 1930s (Resource No. 1 on **Figure G-1**; see also Views 6 and 7 of **Figures G-5 and G-6**). The historic district also contains a number of significant institutional buildings, some of which are



Existing Brooklyn Heights branch library, Cadman Plaza facade

1



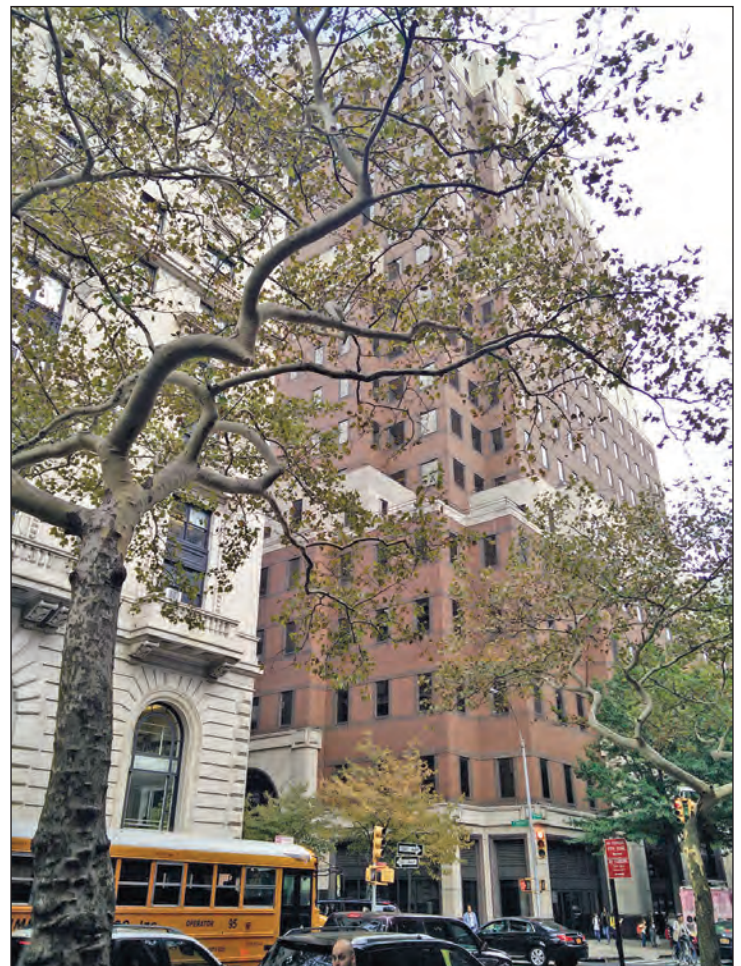
Existing Brooklyn Heights branch library, Clinton Street facade

2



Existing Brooklyn Heights branch library, view south from Clinton and Tillary Streets

3



1 Pierrepont Plaza, view east on Pierrepont Street

4



153 Pierrepont Street 5



Brooklyn Heights Historic District, view on south on Monroe Place 6



Brooklyn Heights Historic District, view east on Pierrepont Street

7



Brooklyn Historical Society

8

individually landmarked, such as the Brooklyn Historical Society and St. Ann's and the Holy Trinity Church (both described below).

BROOKLYN HISTORICAL SOCIETY (FORMERLY THE LONG ISLAND HISTORICAL SOCIETY BUILDING) (NHL, S/NR-LISTED, NYCL-INTERIOR)

The Brooklyn Historical Society at 128 Pierrepont Street was designed by George B. Post and built in 1878-1881. Organized in 1863, the Long Island Historical Society grew into a leading library and museum of local history. Fourteen architects entered a design competition for the society's building in 1878; Post's Renaissance-inspired design won, and the final building makes extensive use of ornamental terra cotta manufactured by the Perth Amboy Terra Cotta Company (Resource No. 2 on **Figure G-1**; see also View 8 of **Figure G-6**). The second-floor Othmer Library, an interior landmark, retains its original furnishings and stained glass windows. Outstanding architectural features include columns, a gallery railing, and other woodwork carved of black ash.

BROOKLYN TRUST COMPANY BUILDING (NYCL-INTERIOR, NYCL, S/NR-LISTED)

The Brooklyn Trust Company was established in 1866, and its building at 177-179 Montague Street was constructed in 1913-1916. York & Sawyer created an elegant structure modeled on Italian Renaissance designs, drawing especially from the Palazzo della Gran Guardia, often attributed to Veronese architect Michele Sanmicheli. The banking hall, which is an interior landmark, draws inspiration from ancient Roman and Italian Renaissance architecture. The monumentally scaled space has a vaulted, coffered ceiling with enormous chandeliers, grand arched windows, and a Cosmati-work floor of intricately patterned marble mosaic (Resource No. 3 on **Figure G-1**; see also View 9 of **Figure G-7**. Exterior currently under scaffolding, no view provided).

MAIN BROOKLYN POST OFFICE (NYCL, S/NR-LISTED)

The United States Post Office and Court House, Brooklyn Central Office, is located at 271-301 Cadman Plaza East and was constructed ca. 1885-1891, with an extension built in 1930-1933. The office of the supervising architect of the U.S. Treasury was responsible for the design of the many Romanesque Revival post offices in the United States. This is one of the few such post offices still standing and still in use. The construction began during Mifflin E. Bell's brief tenure as supervising architect (1884-1886); Bell's design was transformed into a boldly-scaled Romanesque Revival work following his resignation (Resource No. 4 on **Figure G-1**; see also View 10 of **Figure G-7**). The complementary extension was designed during James Wetmore's tenure as acting supervising architect.

ST. ANN'S AND THE HOLY TRINITY CHURCH (NHL, S/NR-LISTED)

Construction began on this Gothic Revival church, chapel, and parish house at 157 Montague Street in 1844, funded by paper manufacturer John Bartow, who dreamed of erecting an Episcopal church in Brooklyn that would rival such New York City churches as Trinity Church in Lower Manhattan. It was designed by Minard Lafever (Resource No. 5 on **Figure G-1**; see also View 11 of **Figure G-8**). At its completion in 1847, Holy Trinity Church was the largest church in Brooklyn. A spire designed by Patrick C. Keely was built in 1866 and removed in 1905. The windows, designed by William Jay Bolton and John Bolton, represent the first major program of stained glass made in America.

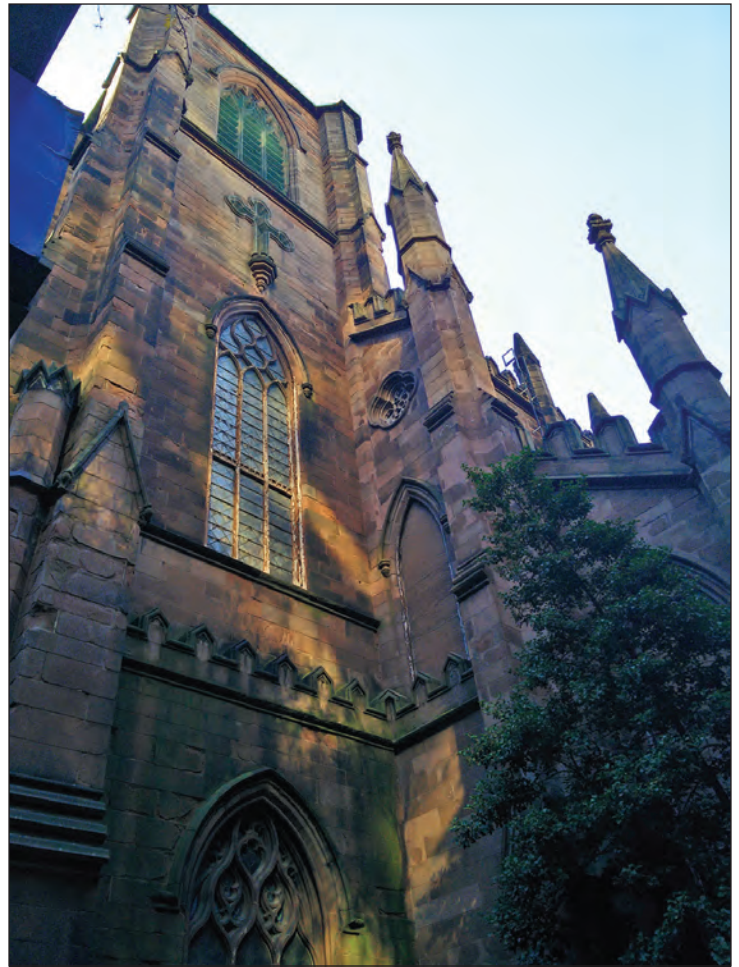
Former Brooklyn Trust Company Building,
interior banking hall

9



Main Brooklyn Post Office

10



St. Ann's and the Holy Trinity Church 11



Borough Hall Skyscraper Historic District 12

BOROUGH HALL SKYSCRAPER HISTORIC DISTRICT (NYCHD)

The Borough Hall Skyscraper Historic District developed rapidly during the mid-19th century following the opening of Brooklyn City Hall (now Brooklyn Borough Hall) in 1848, and the neighborhood became Brooklyn's true downtown office district in the post-Civil War period as a series of ever taller commercial buildings were erected on Court Street and the adjacent side streets. The area continued to develop during the early 20th century following the consolidation of Brooklyn into Greater New York in 1898, with a number of notable structures designed according to the New York "solution" to the problem of the tall office building, with facades composed like a classical column consisting of a monumental base, a relatively simple shaft, and an ornamental capital. Buildings in the historic district include Borough Hall; the 22-story building at 32 Court Street (1918), widely regarded as Brooklyn's first true skyscraper; the Montague-Court Building, within the study area at 16 Court Street; and the Brooklyn Chamber of Commerce Building (Resource No. 6 on **Figure G-1**; see also View 12 of **Figure G-8**).

FORMER NATIONAL TITLE GUARANTY BUILDING (S/NR-ELIGIBLE, NYCL-ELIGIBLE)²

The former National Title Guaranty Building at 185 Montague Street was designed by the firm of Corbett, Harrison & MacMurray and was constructed in 1930. The Art Deco style building is 15 stories tall and is faced with tan brick and stone (Resource No. 7 on **Figure G-1**; see also View 13 of **Figure G-9**). Stylized reliefs of eagles are carved in stone above the ground floor level. Corbett, Harrison & MacMurray later shared design responsibility for Rockefeller Center.

FORMER PEOPLE'S TRUST COMPANY BUILDING (S/NR-ELIGIBLE, NYCL-ELIGIBLE)¹

The former People's Trust Company Building at 183 Montague Street was designed by the firm of Mowbray and Uffinger and constructed in 1903. The main exterior features are four large Ionic columns supporting an elaborate, sculptural pediment (Resource No. 8 on **Figure G-1**; see also View 14 of **Figure G-9**). An Art Deco-style rear addition was designed by Shreve, Lamb & Harmon and built in 1929. Mowbray and Uffinger later designed the Dime Savings Bank on DeKalb Avenue.

INTERIM SITE

The interim site is located within the Brooklyn Heights Historic District, described above. The interim site currently contains a 4-story ~~brownstone~~ stone-clad structure with a mansard roof that is in use as the social hall for Our Lady of Lebanon Church (see View 15 of **Figure G-10**).

INTERIM SITE STUDY AREA

The interim site study area is within the boundaries of the Brooklyn Heights Historic District, described above. Our Lady of Lebanon Church is located directly adjacent to the interim site (see View 16 of **Figure G-10**). The Early Romanesque Revival-style building was originally constructed in 1844-1846 as the Church of the Pilgrims and was designed by Richard Upjohn. In 1869, the church was expanded with a High Victorian addition that is one of the few surviving buildings by Leopold Eidlitz. In 1944, the Church of the Pilgrims merged with Plymouth Church, and the building was sold to a Lebanese Roman Catholic congregation.

² Determinations of S/NR and NYCL eligibility made by LPC in a comment letter dated March 27, 2015 (see **Appendix 1**).



Former National Title Guaranty Building 13



Former People's Trust Company Building 14



113 Remsen Street Interim Site 15



Our Lady of Lebanon Church and Interim Site 16



95 Remsen Street Interim Site 15



Our Lady of Lebanon Church and Interim Site 16

D. THE FUTURE WITHOUT THE PROPOSED PROJECT

DEVELOPMENT SITE AND PROJECT AREA

Absent the proposed actions, the existing branch library building on the development site would remain; however, the Business and Career Library space currently housed within the Brooklyn Heights branch library will be relocated to the Brooklyn Public Library central branch at Grand Army Plaza in Brooklyn. The space currently associated with the Business and Career Library would be unprogrammed space with no additional (dedicated) BPL staffing, with its use to be determined. No changes are anticipated to occur on the remainder of the project area.

PROJECT AREA STUDY AREA

Two development projects are expected to be completed within the 400-foot study area by the 2019 analysis year. Located south of the development site, the former Brooklyn Trust Company Building at 177 Montague Street is being converted into 12 residential units. Since this building is a New York City Landmark (interior and exterior), review of the proposed alterations is required under the Landmarks Law. LPC issued a Certificate of Appropriateness for the project in October 2013. The second project under development in the study area is a new residential and retail building at 172 Montague Street. Since construction for both projects would occur within 90 feet of architectural resources, it is expected that the projects would be required to follow the New York City Department of Buildings *Technical Policy and Procedure Notice #10/88* to avoid potential damage to historic structures resulting from adjacent construction.

INTERIM SITE

No changes to the interim site are currently anticipated in the future without the proposed project. The site is expected to remain in its current use, as the social hall for Our Lady of Lebanon Church.

INTERIM SITE STUDY AREA

No projects are anticipated to be constructed within the 400-foot interim site study area by 2019. The two development projects discussed in the project area study area are just outside of the interim site study area.

In the future without the proposed project, the condition of other architectural resources within the study areas could change. Architectural resources that are listed on the National Register or that have been found eligible for listing are given a measure of protection from the effects of federally sponsored or assisted projects under Section 106 of the National Historic Preservation Act. Although preservation is not mandated, federal agencies must attempt to avoid adverse impacts on such resources through a notice, review, and consultation process. Properties listed on the State Register are similarly protected against impacts resulting from state-sponsored or state-assisted projects under the State Historic Preservation Act. Private property owners using private funds can, however, alter or demolish their properties without such a review process. Privately owned sites that are NYCLs or within New York City Historic Districts are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition can occur.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

DEVELOPMENT SITE AND PROJECT AREA

The proposed project includes the construction of a new mixed-use building on the development site. The proposed building would include a replacement branch library; community facility use for a yet-to-be-identified tenant; residential, accessory parking, and retail uses. The proposed building would be approximately 36 stories (approximately 441 feet tall, including a mechanical bulkhead of approximately 25 feet) (see **Figure G-11**). No changes would occur on the remainder of the project area. Block 239, Lots 1 and 3 would remain as in existing conditions.

The proposed construction at the development site would not entail the demolition of any known or potential architectural resources. Furthermore, as discussed below, the proposed mixed-use building on the development site would not have any direct, physical impacts on such structures as a result of the implementation of a Construction Protection Plan (CPP).

PROJECT AREA STUDY AREA

DIRECT IMPACTS

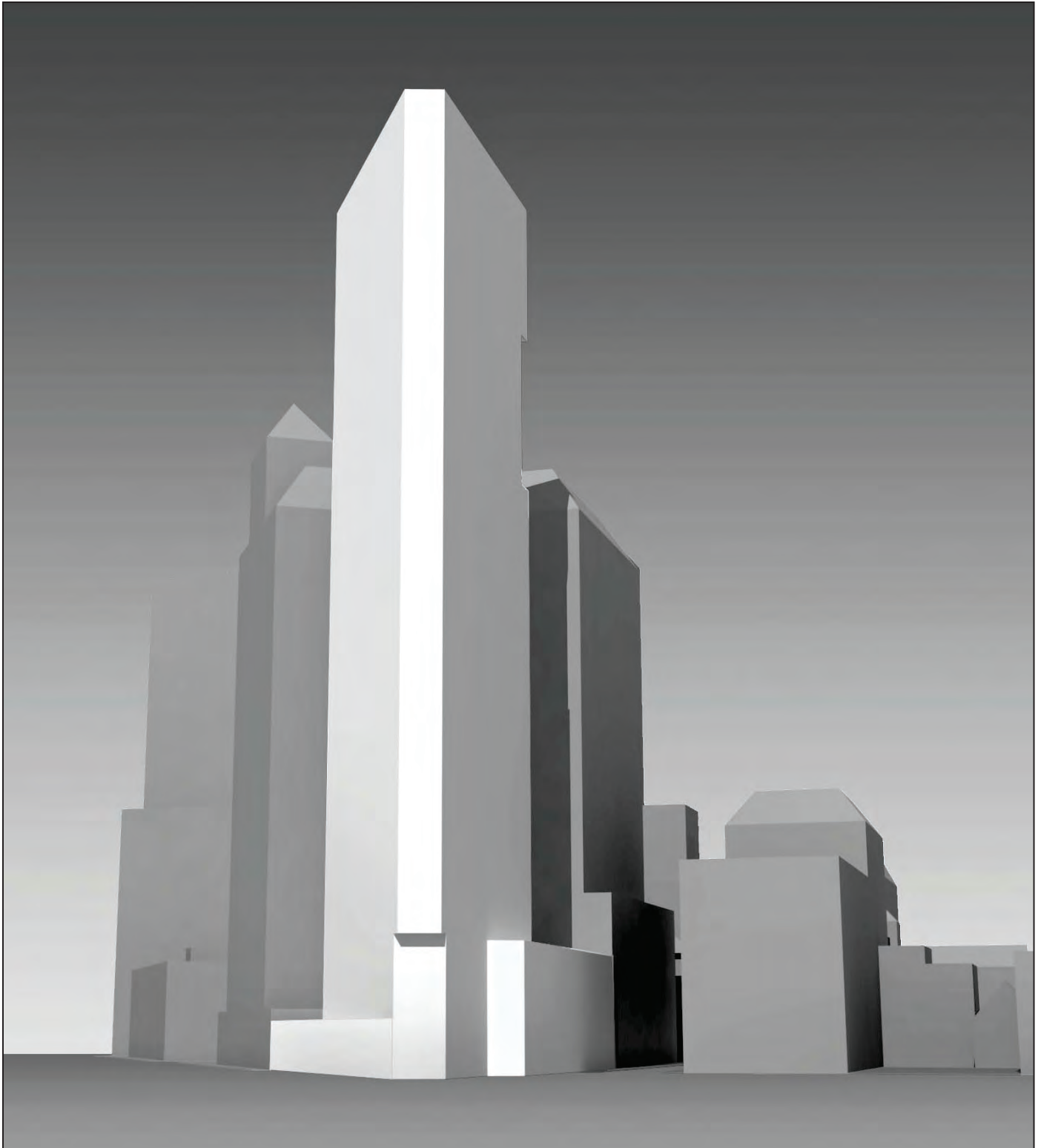
Using the *CEQR Technical Manual* direct impact criteria noted above, the proposed mixed-use building on the development site would not result in the replication of aspects of any of the architectural resources in the study area so as to cause a false historical appearance, or the introduction of significant new shadows or significant lengthening of the duration of existing shadows over historic landscapes or structures. (See Attachment F, “Shadows.”). There would be no physical changes to any of the architectural resources identified above.

There is only historic building that is located within 90 feet of the development site and thus would be within the area of potential construction-related project impacts: St. Ann’s School, at 129 Pierrepont Street (see **Figure G-1**). Site preparation and construction, including the use of heavy machinery, could potentially result in inadvertent damage to this architectural resource described above if adequate precautions are not taken. Therefore, to avoid inadvertent demolition and/or construction-related damage to these resources from ground-borne construction-period vibrations, falling debris, collapse, etc., this building would be included in a CPP for historic structures that would be prepared in coordination with LPC and implemented in consultation with a licensed professional engineer. The CPP would be prepared as set forth in Section 523 of the *CEQR Technical Manual* and in compliance with the procedures included in the DOB’s TPPN #10/88 and LPC’s *Guidelines for Construction Adjacent to a Historic Landmark and Protection Programs for Landmark Buildings*. The CPP would be prepared and implemented prior to demolition and construction activities on the development site and project-related demolition and construction activities would be monitored as specified in the CPP.

INDIRECT IMPACTS

The *CEQR Technical Manual* criteria for indirect, contextual impacts are as follows:

- Isolation of a property from, or alteration of, its setting or visual relationships with the streetscape, including changes to the resource’s visual prominence;
- Introduction of incompatible visual, audible, or atmospheric elements to a resource’s setting; and



- Elimination or screening of publicly-accessible views of the resource.

Each of these criteria is discussed in more detail below, with respect to the architectural resources in the study area.

The proposed project at the development site would not isolate any architectural resource from its setting or visual relationship with the streetscape, or otherwise adversely alter a historic property's setting or visual prominence. The proposed building would be of a comparable height and footprint to the adjacent 1 Pierrepont Plaza building, as well as other tower developments along Montague and Clinton Streets, including the 34-story residential tower at 182 Montague Street. The proposed mixed-use building at the development site would not introduce incompatible visual, audible, or atmospheric elements to a resource's setting. The proposed residential, community facility, and retail uses of the building are comparable with the use of many of the historic buildings in the study area. The proposed project would not eliminate or screen significant publicly accessible views of any architectural resource.

In summary, the proposed project at the development site would not be anticipated to have any significant adverse impacts on historic and cultural resources with the preparation and implementation of a CPP for architectural resources located within 90 feet of the development site.

INTERIM SITE

During the construction period of the proposed project, the library branch would be relocated to the temporary facility at 443 95 Remsen Street. While the construction period would involve a temporary change in the site's use from social hall to library branch, it is not expected to result in any alterations to the building's exterior. Once construction is complete, the interim site would return to its existing use as the social hall for Our Lady of Lebanon Church. Therefore, the proposed project would not result entail the demolition or significant alteration of any historic structures that contribute to the architectural significance of the Brooklyn Heights Historic District. Furthermore, as discussed below, the proposed project would not have any direct, physical impacts on such structures.

INTERIM SITE STUDY AREA

As described above, no building would be constructed on the interim site, and no alterations to the existing building's exterior are expected; thus, a CPP would not be required to avoid inadvertent demolition and/or construction-related damage to architectural resources within 90 feet of the site. The proposed project at the development site would not be anticipated to have any direct, physical impacts on architectural resources in the interim site study area.

Since the appearance of the interim site would change only very minimally, through the installation of some wayfinding signage, it is not expected that the proposed project at the development site would have any visual or contextual impacts on the architectural resources in the surrounding area.

In summary, the proposed mixed-use building on the development site would not be anticipated to have any significant adverse impacts on historic and cultural resources. *

A. INTRODUCTION

This attachment addresses the potential for the presence of hazardous materials resulting from previous and existing uses of 280 Cadman Plaza West, the development site and the surrounding area, and potential risks related to the proposed project with respect to any such hazardous materials. The proposed development would entail demolition of the existing structure and excavation related to the construction of the proposed mixed-use building.

This assessment was based on review of a January 2014 *Phase I Environmental Site Assessment* (ESA) prepared by TRC Engineers, Inc., and an April 2015 *Phase II Subsurface Investigation Report* (Phase II) prepared by Tenen Environmental, LLC. The ESA included the findings of a reconnaissance of the library site, 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. The Phase II included from four locations collection and laboratory analysis of nine soil, one groundwater, and five soil vapor samples.

PRINCIPAL CONCLUSIONS

This analysis finds that the proposed project would not result in significant adverse impacts due to human exposure to hazardous materials.

B. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The development site is approximately 85 feet above sea level. The depth to bedrock is expected to be more than 100 feet, based on US Geological Survey mapping and fill material may be present given there were earlier buildings at the site. The library building has two below-grade levels.

Groundwater beneath the library site was first encountered approximately 83 feet below grade during the Phase II and is expected to flow to the north or west towards the nearby surface water (Upper New York Bay). However, actual groundwater flow direction may be influenced by other factors, such as the subway tunnels beneath Cadman Plaza West. Groundwater in Brooklyn is generally not used as a source of potable water (the municipal water supply uses upstate reservoirs), but in the rare instances when it is used pre-treatment is required.

The Phase II encountered historical fill material from grade to approximately 15 feet below grade outside of the building footprint. The fill was underlain by native material (predominantly sand, cobbles, silt and rock fragments).

HAZARDOUS MATERIALS ASSESSMENT

The ESA identified evidence of “Recognized Environmental Conditions” (RECs), i.e., the presence, or likely presence, of hazardous substances or petroleum, including in the ground, groundwater, or surface water. These RECs were: a suspect drywell; a former laundry (shown on a 1904 map); a closed-in-place #2 fuel oil underground storage tank (UST); fill material of unknown origin from earlier buildings or site filling; and an 11,000-gallon #2 fuel oil spill in 2005 on the south-adjacent property (though this was given a closed status in 2010 by the New York State Department of Environmental Conservation (NYSDEC) following remediation).

Though not a part of the ESA, given that the library was constructed in 1960, asbestos-containing materials (ACM) and lead-based paint (LBP) may also be present.

The Phase II was conducted in accordance with a *Phase II Work Plan and a Site-specific Health and Safety Plan* (HASP), dated November 20, 2014 and approved by the New York City Department of Environmental Protection (NYCDEP) in a letter dated December 17, 2014.

The borings encountered no evidence of petroleum contamination (including in the vicinity of the UST). Soil sampling results, compared to NYSDEC’s 6 NYCRR Part 375 Soil Cleanup Objectives, found no exceedances of the SCOs for Restricted-Residential Use and only limited exceedances of the more stringent Unrestricted Use SCOS (for two common pesticides and several common metals). The groundwater sample results showed no exceedances of NYSDEC’s Class GA (drinking water) standards. The soil vapor sampling results showed no exceedances of New York State Department of Health (NYSDOH) Air Guidance Values (AGVs) but several petroleum-related compounds were detected at low levels, in a pattern consistent with the closed-status petroleum spill on the south-adjacent property.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT (NO ACTION CONDITION)

In the No Action condition, although the Business and Career Library would be relocated to the Brooklyn Public Library (BPL) central branch, the existing building would be retained and no demolition or excavation would be required. As under current conditions, the RECs identified by the ESA and the findings of the Phase II would not present any significant hazardous materials concerns for the future use of the building.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT (WITH ACTION CONDITION)

The proposed mixed-use development would entail demolition of the existing structure and excavation (as the new building’s foundations would extend below the depth of and beyond the horizontal extent of the existing two-level basement). Although these activities could increase pathways for human exposure, impacts would be avoided by constructing the proposed building in accordance with the following:

- Based on the results of the Phase II, in May 2015 a *Remedial Action Plan (RAP)* and *Construction Health and Safety Plan (CHASP)* was prepared and submitted to NYCDEP. It was approved by NYCDEP in a letter dated May 27, 2015. The RAP and CHASP would be implemented during the subsurface disturbance associated with the proposed project. The RAP and CHASP address requirements for items such as: management of excavated soil, the requirement for a permit should dewatering be needed; petroleum tank removal in

accordance with applicable regulatory requirements including NYSDEC's requirements relating to spill reporting and tank registration; dust control; air monitoring; worker safety; and contingency measures should unforeseen petroleum tanks or soil contamination be encountered. The RAP also includes the requirements for a vapor barrier beneath the foundations (though the two below-grade levels will be used for parking and mechanical equipment and ventilated in accordance with the New York City Department of Building code), a clean soil cap in any landscaped/unpaved areas and a closure report following construction to document compliance with the RAP/CHASP.

- Prior to commencing demolition, the existing building would be surveyed for asbestos by a NYC-certified asbestos investigator. All ACM would be removed and disposed of prior to demolition in accordance with local, state and federal requirements.
- Demolition activities with the potential to disturb lead-based paint would be performed in accordance with applicable requirements (including federal Occupational Safety and Health Administration regulation 29 CFR 1926.62 - Lead Exposure in Construction).
- Unless there is labeling or test data indicating that any suspect polychlorinated biphenyl (PCB)-containing electrical equipment and fluorescent lighting fixtures do not contain PCBs, and that any fluorescent lighting bulbs do not contain mercury, characterization and disposal of such items would be conducted prior to demolition activities in accordance with appropriate federal, state and local regulations, including applicable Resource Conservation & Recovery Act (RCRA) and/or NYSDEC requirements.

The New York City Economic Development Corporation (NYCEDC) will require, through the terms incorporated into the Contract of Sale/lease provisions or other legally binding document, that the applicant/project sponsor comply with and implement all measures outlined above into the proposed project. With the implementation of the measures outlined above, no significant adverse impacts related to hazardous materials would result from construction activities on the project site and following construction, there would be no potential for significant adverse impacts.

With these measures, the proposed development would not result in any significant adverse impacts related to hazardous materials. *

A. INTRODUCTION

This attachment examines the potential effects of the proposed project on the study area transportation systems. Specifically, it compares conditions in the future with the proposed project (the With Action condition) against conditions in the future without the proposed project (the No Action condition) in order to determine the potential for significant adverse impacts to transportation systems. The analyses consider the 2019 analysis year to identify potential impacts, and if warranted, determine project improvement measures that would be appropriate to address those impacts. The travel demand projections, trip assignments, and capacity analysis contained in this attachment were conducted pursuant to the methodologies outlined in the 2014 *CEQR Technical Manual*.

BACKGROUND

As detailed in Attachment A, “Project Description,” the proposed development at 280 Cadman Plaza West is located in Brooklyn Community District 2 on the block bounded by Clinton Street to the west, Tillary Street to the north, Cadman Plaza West to the east, and Pierrepont Street to the south. The development site is currently owned by the City of New York, and the existing 2-story, approximately 59,146-gross-square-foot (gsf) building on the development site is in use as the Brooklyn Heights branch of the Brooklyn Public Library (BPL). The branch library currently includes approximately 32,431 sf of usable space, including approximately 17,471 gsf of branch library space and 14,960 gsf of Business and Career Library space. The remaining approximately 26,715 gsf of space in the existing building is inaccessible to the public and is comprised of mechanical and utility space; BPL does not define this space as branch library use.

In the No Action condition, the approximately 17,471 gsf of branch library use would remain on the development site, and the Business and Career Library would be permanently relocated to the BPL central branch. The space currently associated with the Business and Career Library would be unprogrammed space with no additional (dedicated) BPL staffing, with its use to be determined. Given that the branch library would in the No Action condition provide the same services and functions as it does today, there is no anticipation of an increase in branch library visitation.

In the With Action condition, prior to redevelopment of the development site the Business and Career Library would be permanently relocated to BPL central branch (as in the No Action condition), and the branch library would be temporarily relocated to a facility at ~~443~~ 95 Remsen Street (the “interim site”). The interim site is currently in use as the social hall for Our Lady of Lebanon Church. Since the interim site currently contains active community facility type uses, and due to the temporary nature of its proposed use as a library, the relocation of the branch library to this site during construction is not expected to substantially alter the level of trip making in the area. In addition, branch library users’ trip-making patterns as well as the overall volume of trips to the interim site are expected to be similar to travel patterns and volumes to the

existing branch library at the development site, which is within close proximity to the interim site. Therefore, because trip making to the interim site would reflect conditions that currently exist, no further transportation analysis of this temporary facility is warranted.

After temporary relocation of the branch library, the development site would be redeveloped with a replacement branch library of approximately 21,500 gsf in size; up to approximately 19,800 gsf of community facility use; approximately 650 gsf of retail use; approximately 308,000 gsf of residential use (for conservative analysis purposes analyzed as 308 market-rate units); and an approximately 38,100-gsf, 45-space below-grade accessory parking facility. The proposed building would have two pedestrian access areas: residential, local retail, and community facility access areas would be along Clinton Street between Pierrepont and Tillary Streets; while library access would be along Cadman Plaza West between Pierrepont and Tillary Streets.

The permanent replacement branch library would serve the same functions and have a similar number of patrons as the branch library in the No Action condition. Therefore, the analysis does not assume any positive trip generation increments associated with the branch library use in the With Action condition. The analysis assumes the same level of overall library patronage at the development site in the Existing, No Action and With Action conditions, despite a decrease in patronage expected in the No Action and With Action conditions due to the relocation of the Business and Career Library use. All other uses—including residential, local retail, and community facility—would result in incremental trip generation in the With Action condition, as detailed below.

PRINCIPAL CONCLUSIONS

TRAFFIC

It was determined that the proposed project's incremental vehicle trips would not exceed the *CEQR Technical Manual* analysis threshold of 50 peak hour vehicle trips, and therefore a detailed traffic analysis is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse traffic impacts.

TRANSIT

It was determined that the proposed mixed-use building's incremental subway trips would be dispersed among the area's multiple subway stations/lines such that no single subway station/line would exceed the *CEQR Technical Manual* analysis threshold of 200 or more peak hour subway trips per station. Therefore, a detailed analysis of subway facilities is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse subway impacts.

In addition, incremental bus trips would be fewer than 50 peak hour bus riders in a single direction. Therefore, based on *CEQR Technical Manual* guidelines a detailed analysis of buses is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse bus line-haul impacts.

PEDESTRIANS

Based on a detailed assignment of project-generated pedestrian trips, one sidewalk and one corner were identified as warranting detailed analysis for the weekday AM and PM peak hours.

Subsequently, no significant adverse impacts were identified for either of the pedestrian analysis locations for either peak hour.

PARKING

The *CEQR Technical Manual* states that if a quantified traffic analysis is not required, it is likely that a parking assessment is not warranted. As discussed above, a detailed quantitative traffic study was not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse traffic impacts. Furthermore, the 45-space parking facility planned for the development site would absorb some or all of the project's parking demand. Therefore, an on- and off-street parking analysis was not required and the proposed mixed-use building on the development site is similarly not expected to result in any significant adverse parking impacts.

Transportation analyses for the proposed off-site developments are provided in Attachment M, "Analysis of the Proposed Off-Site Affordable Housing."

B. PRELIMINARY ANALYSIS METHODOLOGY AND SCREENING ASSESSMENT

The *CEQR Technical Manual* recommends a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified 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 project. If the proposed project is 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 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 project would result in 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 pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

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 project during the weekday AM, midday, and PM peak hours. These estimates were then compared to the *CEQR Technical Manual* thresholds to determine if a Level 2 screening and/or quantified operational analyses would be warranted.

BACKGROUND

As discussed above and summarized in **Table I-1**, in the No Action condition, the approximately 17,471-gsf branch library will remain on the development site, and the Business and Career Library will be permanently relocated to the BPL central branch.

Table I-1

Future No Action and With Action Development Program Assumptions

Components	Future No Action	Future With Action	Increment
Business and Career Library (gsf)	-14,960	-14,960	0
Branch Library (gsf)	17,471	21,500	4,029 [†]
Residential (dwelling units)	0	308	308
Local Retail (gsf)	0	650	650
Community Facility (gsf)	0	19,800	19,800
Note: (1) The permanent, replacement branch library would serve the same functions and would be expected to have a similar number of patrons as the branch library in the No Action condition, irrespective of the differential in square footages.			

In the With Action condition, prior to redevelopment of the development site the Business and Career Library would be permanently relocated to BPL central branch (as in the No Action condition). Subsequently, the development site would be redeveloped with a new mixed-use development that would include a replacement branch library of 21,500 gsf in size; up to approximately 19,800 gsf of community facility use; approximately 650 gsf of retail use; approximately 308,000 gsf of residential use (analyzed as 308 units); and an approximately 38,082-gsf, 45-space below-grade accessory parking facility.

TRANSPORTATION PLANNING ASSUMPTIONS

Trip generation factors for the proposed project were developed based on information from the *CEQR Technical Manual*, the 2004 *Downtown Brooklyn Development FEIS*, and U.S. Census Data, as summarized in **Table I-2**.

Residential

The daily person trip rate and temporal distribution are from the *CEQR Technical Manual*. Peak period Journey-to-Work (JTW) data from the 2008-2012 U.S. Census Bureau American Community Survey (ACS) for Brooklyn census tracts 1, 5.01, 5.02, 7, 9, 11, and 13 were used for residential modal splits. The directional distributions for all peak periods are from the 2004 *Downtown Brooklyn Development FEIS*. The vehicle occupancies are from the 2008-2012 U.S. Census ACS for autos and from the 2004 *Downtown Brooklyn Development FEIS* for taxis. The daily delivery trip rate and temporal and directional distributions are from the *CEQR Technical Manual*.

Local Retail

The daily trip generation and delivery vehicle trip generation rates for the local neighborhood retail component were obtained from the *CEQR Technical Manual*. In line with accepted City practice, a 25-percent linked trip credit was applied to the local retail trip generation estimates. The modal splits and vehicle occupancies were obtained from the 2004 *Downtown Brooklyn Development FEIS*. The temporal and directional distributions for all peak periods were obtained from the *CEQR Technical Manual* and the 2004 *Downtown Brooklyn Development FEIS*, respectively. The daily delivery trip rate and temporal and directional distributions are from the *CEQR Technical Manual*.

Community Facility

A specific tenant has not been identified for the community facility use. Based on the potential nature of activities contemplated for this space, a daily trip generation rate for a YMCA-type facility was used for conservative analysis purposes. For all other factors, general community facility travel demand factors from the *Downtown Brooklyn Development FEIS* were used for a conservative trip generation estimate.

Table I-2
Travel Demand Factors

Use	Residential (308 DU)			Local Retail (0.650 KSF)			Community Facility (19.8 KSF)			
Total Daily Person Trip	(1) Weekday 8.075 Trips / DU			(1) Weekday 205.0 Trips / KSF			(4) Weekday 44.7 Trips / KSF			
Trip Linkage	0%			25%			0%			
Net Daily Person trip	Weekday 8.075 Trips / DU			Weekday 153.8 Trips / KSF			Weekday 44.7 Trips / KSF			
Temporal	AM	MD	PM	AM	MD	PM	AM	MD	PM	
	(1)			(1)			(5)			
	10%	5%	11%	3.0%	19.0%	10.0%	7.2%	7.1%	8.3%	
Direction	(2)			(2)			(5)			
	In	20%	51%	65%	50%	50%	50%	94%	45%	42%
	Out	80%	49%	35%	50%	50%	50%	6%	55%	58%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Modal Split	(3)			(2)			(5)			
	AM	MD	PM	AM	MD	PM	AM	MD	PM	
	Auto	7.0%	7.0%	7.0%	2.0%	2.0%	2.0%	12.0%	12.0%	12.0%
	Taxi	2.0%	2.0%	2.0%	3.0%	3.0%	3.0%	1.0%	1.0%	1.0%
	Subway	73.0%	73.0%	73.0%	20.0%	20.0%	20.0%	71.0%	71.0%	71.0%
	Bus	2.0%	2.0%	2.0%	5.0%	5.0%	5.0%	6.0%	6.0%	6.0%
	Walk	16.0%	16.0%	16.0%	70.0%	70.0%	70.0%	10.0%	10.0%	10.0%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Vehicle Occupancy	(2)(3) Weekday			(2) Weekday			(5) Weekday		
Auto		1.21		2.00			1.50			
Taxi		1.40		2.00			1.50			
Daily Delivery Trip Generation Rate	(1) Weekday 0.06 Delivery Trips / DU			(1) Weekday 0.35 Delivery Trips / KSF			(5) Weekday 0.19 Delivery Trips / KSF			
Delivery Temporal	AM	MD	PM	AM	MD	PM	AM	MD	PM	
	(1)			(1)			(5)			
	12%	9%	2%	8.0%	11.0%	2.0%	6.0%	11.0%	1.0%	
Delivery Direction	(1)			(1)			(5)			
	In	50%	50%	50%	50%	50%	50%	50%	50%	
	Out	50%	50%	50%	50%	50%	50%	50%	50%	
	Total	100%	100%	100%	100%	100%	100%	100%	100%	
Sources:	(1) 2014 CEQR Technical Manual (2) Atlantic Yards Arena and Redevelopment Project FSEIS (2014) (3) U.S. Census Bureau, ACS 2008-2012 Five-Year Estimates - Journey-to-Work (JTW) Data (4) Based on NYCDOT recommended daily trip rate for a YMCA-type facility. (5) Downtown Brooklyn Development FEIS (2004)									

TRAVEL DEMAND PROJECTION SUMMARY

As summarized in **Table I-3**, the proposed mixed-use building on the development site would generate a total of 314, 202, and 355 incremental person trips during the weekday AM, midday, and PM peak hours, respectively. Approximately 29, 17, and 28 incremental vehicle trips would be generated during the same respective time periods.

Table I-3
Trip Generation Summary: Net Incremental Trips

Person Trips									Vehicle Trips				
Peak Hour	In/Out	Auto	Taxi	Subway	Railroad	Bus	Walk	Total	In/Out	Auto	Taxi	Delivery	Total
AM	In	10	2	79	0	5	15	111	In	7	4	1	12
	Out	14	4	148	0	4	33	203	Out	12	4	1	17
	Total	24	6	227	0	9	48	314	Total	19	8	2	29
MD	In	7	1	68	0	3	20	99	In	5	2	1	8
	Out	8	1	71	0	3	20	103	Out	6	2	1	9
	Total	15	2	139	0	6	40	202	Total	11	4	2	17
PM	In	16	4	153	0	6	34	213	In	13	3	0	16
	Out	12	2	101	0	5	22	142	Out	9	3	0	12
	Total	28	6	254	0	11	56	355	Total	22	6	0	28

LEVEL 1 SCREENING

TRAFFIC

As shown in **Table I-3**, the proposed mixed-use building on the development site would generate 29, 17, and 28 incremental vehicle trips during the weekday AM, midday, and PM peak hours, respectively. Since these incremental vehicle trips do not exceed the *CEQR Technical Manual* analysis threshold of 50 peak hour vehicle trips, a detailed traffic analysis is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse traffic impacts.

PARKING

The *CEQR Technical Manual* states that if a quantified traffic analysis is not required, it is likely that a parking assessment is not warranted. As discussed above, a detailed quantitative traffic study is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse traffic impacts. Therefore, an on- and off-street parking analysis is not required and the proposed mixed-use building on the development site is similarly not expected to result in any significant adverse parking impacts.

TRANSIT

As shown in **Table I-3**, the incremental subway trips generated by the proposed mixed-use building on the development site would be 227, 139, and 254 person trips during the weekday AM, midday, and PM peak hours, respectively. The proposed mixed-use building on the development site is located in the vicinity of multiple subway station options including the Court Street Station (R train), the Clark Street Station (No. 2 and 3 trains), the High Street Station (A and C trains), the Borough Hall Station (No. 2, 3, 4, and 5 trains), and the Jay Street/MetroTech Station (A, C, F, and R trains). The subway trips would be dispersed onto the area's multiple subway stations/lines such that no single subway station/line would exceed the *CEQR Technical Manual* analysis threshold of 200 or more peak hour subway trips per station. Therefore, a detailed analysis of subway facilities is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse subway impacts.

As shown in **Table I-3**, the incremental bus trips generated by the proposed mixed-use building on the development site would be 9, 6, and 11 person trips by bus during the weekday AM, midday, and PM peak hours, respectively. Since the incremental bus trips would be fewer than

50 peak hour bus riders in a single direction, a detailed analysis of buses is not warranted and the proposed mixed-use building on the development site is not expected to result in any significant adverse bus line-haul impacts.

PEDESTRIAN

All person trips generated by the proposed mixed-use building on the development site would traverse the pedestrian elements surrounding the development site. As shown in **Table I-3**, the net incremental pedestrian trips would be greater than 200 during all weekday peak hours with 314, 202, and 355 pedestrian trips during the weekday AM, midday, and PM peak hours, respectively. These include pedestrian trips generated by the proposed mixed-use building related to all modes, including auto, taxi, subway, bus, and walk-only. Therefore, a Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified pedestrian analyses.

LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the distribution and assignment of projected trips to the transportation network and the determination of whether specific locations are expected to experience incremental trips exceeding *CEQR Technical Manual* thresholds.

SITE ACCESS AND EGRESS

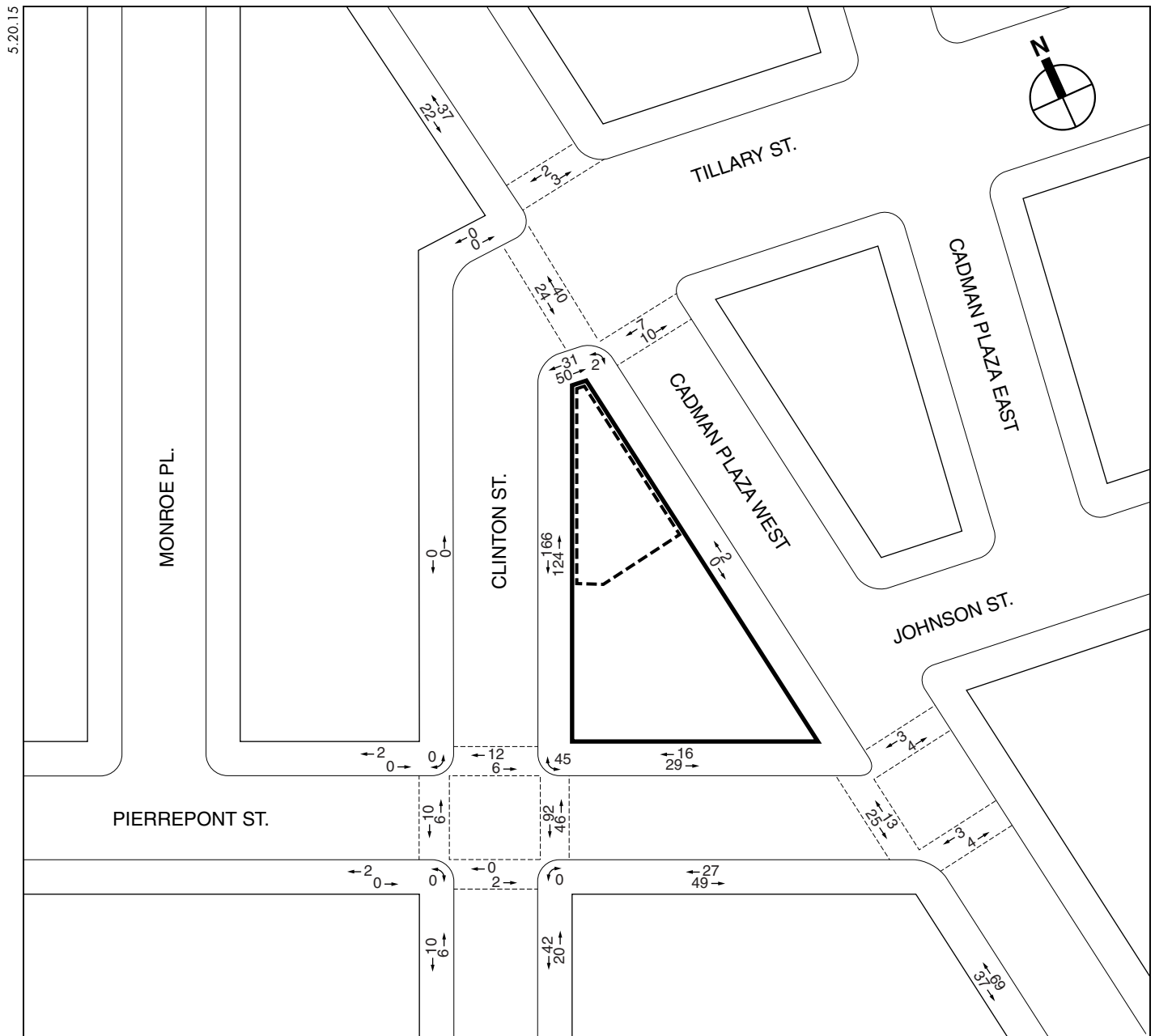
As part of the Level 2 screening assessment, project-generated trips were assigned to specific pedestrian elements near the development site. As previously stated, according to *CEQR Technical Manual* methodology, further quantified analyses to assess the potential impacts of the proposed project on the transportation system may be warranted if the trip assignments were to identify key pedestrian elements incurring 200 or more peak hour pedestrian trips.

For the proposed mixed-use building on the development site, the main entrance to the residential, local retail, and community facility components would be on the east sidewalk of Clinton Street between Pierrepoint and Tillary Streets. The entrance to the library would be, as in existing conditions, along the west sidewalk of Cadman Plaza West between Pierrepoint and Tillary Streets.

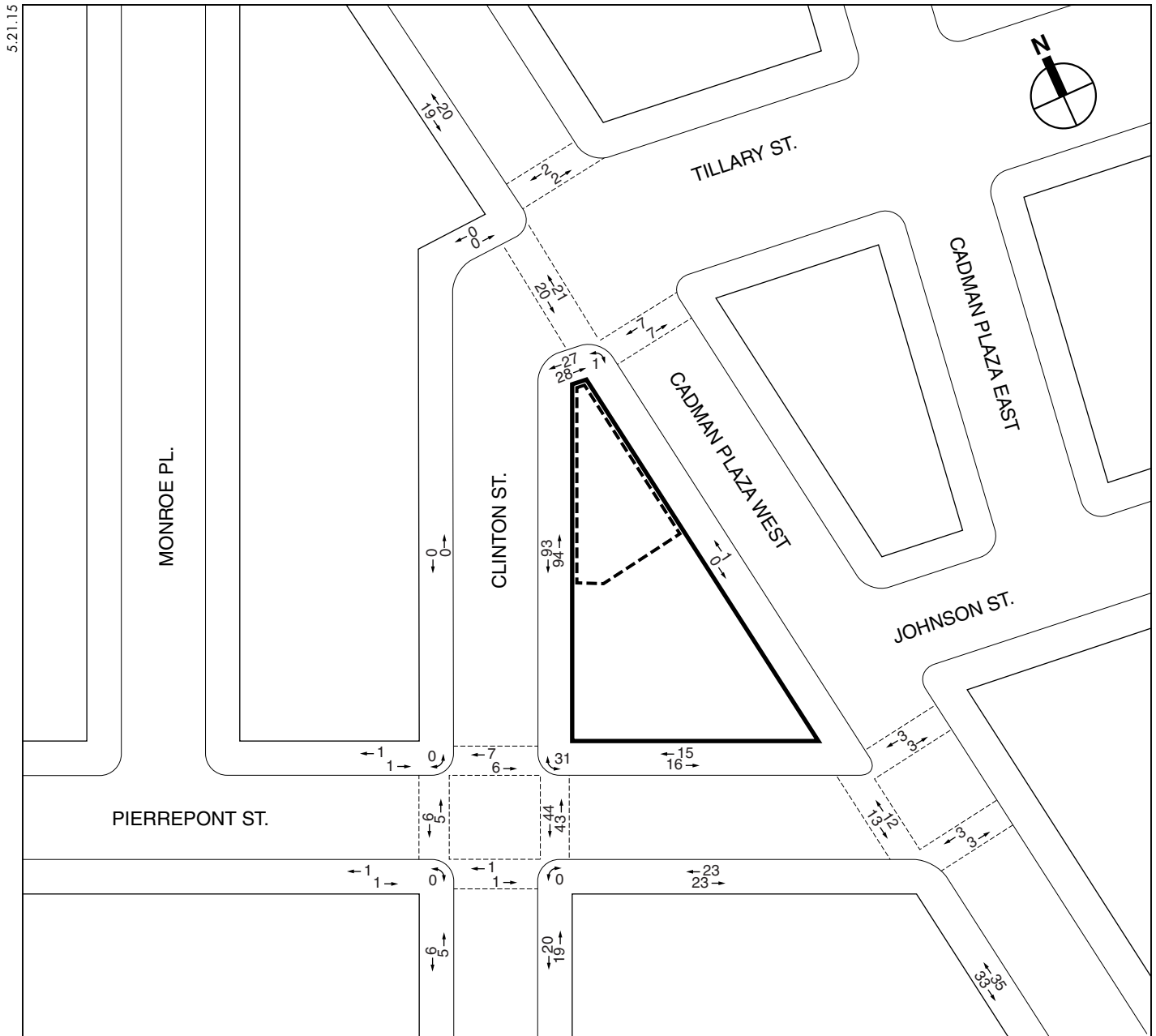
PEDESTRIANS

As shown in **Table I-3**, the projected peak hour pedestrian trips would exceed the CEQR analysis threshold of 200 pedestrians during all weekday peak hours with 314, 202, and 355 pedestrians trips during the weekday AM, midday, and PM peak hours, respectively. Level 2 pedestrian trip assignments were individually developed for the proposed project components and are shown in **Figures I-1 through I-3** and discussed below. Based on the detailed assignment of pedestrian trips, 1 sidewalk and 1 corner were selected for detailed analysis for the weekday AM and PM peak hours as shown in **Table I-4**.

- Auto Trips – Motorists would park at the proposed project’s off-street parking facilities, and would access the proposed building via internal pedestrian elements.
- Taxi Trips – Taxi patrons would get dropped off and picked up along Clinton Street and Cadman Plaza West.

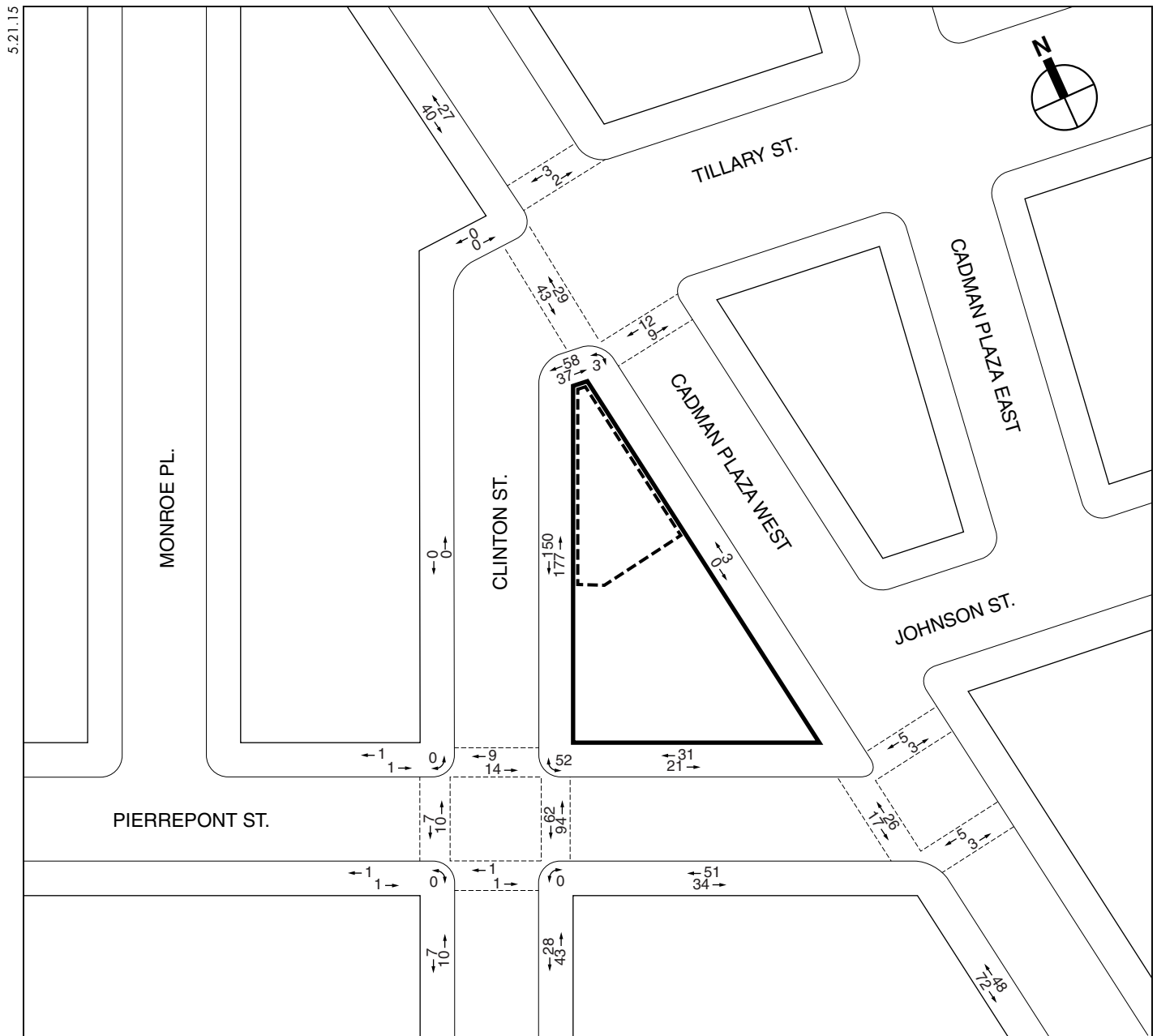


Project Generated Pedestrian Volumes
Weekday AM Peak Hour
Figure I-1



— Project Area (Zoning Lot)

- - - Development Site



Project Generated Pedestrian Volumes
Weekday PM Peak Hour
Figure I-3

Table I-4

Pedestrian Level 2 Screening Analysis Results—Selected Analysis Locations

Pedestrian Elements	Weekday			Selected Analysis Location
	AM	Midday	PM	
Cadman Plaza West and Tillary Street				
South Sidewalk along Tillary Street between Clinton Street and Cadman Plaza West	81	55	95	
West Sidewalk along Cadman Plaza West between Pierrepont Street and Tillary Street	2	1	3	
West Sidewalk along Cadman Plaza West between Tillary Street and Clark Street	59	39	67	
Southwest Corner	83	56	96	
North Crosswalk	5	4	5	
South Crosswalk	17	14	21	
West Crosswalk	64	41	72	
Cadman Plaza West and Pierrepont Street				
North Sidewalk along Pierrepont Street between Clinton Street and Cadman Plaza West	45	31	52	
South Sidewalk along Pierrepont Street between Clinton Street and Cadman Plaza West	76	46	85	
West Sidewalk along Cadman Plaza West between Montague Street and Pierrepont Street	106	68	120	
North Crosswalk	7	6	8	
South Crosswalk	7	6	8	
West Crosswalk	38	25	43	
Clinton Street and Pierrepont Street				
North Sidewalk along Pierrepont Street between Clinton Street and Monroe Place	2	2	2	
South Sidewalk along Pierrepont Street between Clinton Street and Monroe Place	2	2	2	
East Sidewalk along Clinton Street between Pierrepont Street and Tillary Street	290	187	327	✓
East Sidewalk along Clinton Street between Pierrepont Street and Montague Street	62	39	71	
West Sidewalk along Clinton Street between Pierrepont Street and Montague Street	16	11	17	
Northeast Corner	201	131	231	✓
Northwest Corner	34	24	40	
Southeast Corner	140	89	158	
Southwest Corner	18	13	19	
North Crosswalk	18	13	23	
South Crosswalk	2	2	2	
East Crosswalk	138	87	156	
West Crosswalk	16	11	17	
Notes: ✓ denotes pedestrian elements selected for detailed analysis.				

- City Bus Trips – City bus riders would use buses stopping on Cadman Plaza West and would get off at bus stops nearest to the development site.
- Subway Trips – Subway riders were assigned to the Court Street Station (R train), the Clark Street Station (No. 2 and 3 trains), the High Street Station (A and C trains), the Borough Hall Station (No. 2, 3, 4, and 5 trains), and the Jay Street/MetroTech Station (A, C, F, and R trains).
- Walk-Only Trips – Pedestrian walk-only trips were developed by distributing project-generated person trips to surrounding pedestrian facilities (i.e., sidewalks, corner reservoirs, and crosswalks) based on population origin-destination data as well as the land use characteristics of the surrounding neighborhood.

C. TRANSPORTATION ANALYSIS METHODOLOGIES

PEDESTRIAN OPERATIONS

The adequacy of the study area's sidewalks, crosswalks, and corner reservoir capacities in relation to the demand imposed on them is evaluated based on the methodologies presented in the 2010 *HCM*, pursuant to procedures detailed in the *CEQR Technical Manual*.

The primary performance measure for sidewalks and walkways is pedestrian space, expressed as square feet per pedestrian (SFP), which is an indicator of the quality of pedestrian movement and comfort. The calculation of the sidewalk SFP is based on the pedestrian volumes by direction, the effective sidewalk or walkway width, and average walking speed. The SFP forms the basis for a sidewalk Level of Service (LOS) analysis. The determination of sidewalk LOS is also dependent on whether the pedestrian flow being analyzed is best described as "non-platoon" or "platoon." Non-platoon flow occurs when pedestrian volume within the peak 15-minute period is relatively uniform, whereas, platoon flow occurs when pedestrian volumes vary significantly with the peak 15-minute period. Such variation typically occurs near bus stops, subway stations, and/or where adjacent crosswalks account for much of the walkway's pedestrian volume.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must be able to provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the street or moving around the corner). The *HCM* methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total "time-space" available for these activities, expressed in square feet-second, is calculated by multiplying the net area of the corner (in square feet) by the signal's cycle length. The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second). The ratio of net time-space divided by the total pedestrian circulation volume per signal cycle provides the LOS measurement of square feet per pedestrian (SFP).

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk. The LOS standards for sidewalks, corner reservoirs, and crosswalks are summarized in **Table I-5**. The *CEQR Technical Manual* specifies the acceptable LOS in Central Business District (CBD) areas as mid-LOS D or better.

Table I-5
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks		Corner Reservoirs and Crosswalks
	Non-Platoon Flow	Platoon Flow	
A	> 60 SFP	> 530 SFP	> 60 SFP
B	> 40 and ≤ 60 SFP	> 90 and ≤ 530 SFP	> 40 and ≤ 60 SFP
C	> 24 and ≤ 40 SFP	> 40 and ≤ 90 SFP	> 24 and ≤ 40 SFP
D	> 15 and ≤ 24 SFP	> 23 and ≤ 40 SFP	> 15 and ≤ 24 SFP
E	> 8 and ≤ 15 SFP	> 11 and ≤ 23 SFP	> 8 and ≤ 15 SFP
F	≤ 8 SFP	≤ 11 SFP	≤ 8 SFP
Notes: SFP = square feet per pedestrian.			
Source: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> .			

SIGNIFICANT IMPACT CRITERIA

The determination of significant pedestrian impacts considers the level of predicted decrease in pedestrian space between the No Action and With Action conditions. For different pedestrian elements, flow conditions, and area types, the CEQR procedure for impact determination corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

There are two sliding-scale formulas for determining significant sidewalk impacts. For non-platoon flow, the determination of significant sidewalk impacts is based on the sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. For platoon flow, the sliding-scale formula is $Y \geq X/(9.5 - 0.321)$. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, these formulas would apply only if the With Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table I-6** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the With Action pedestrian space falls short of LOS C in non-CBD areas or mid-LOS D in CBD areas. **Table I-7** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir and crosswalk impacts.

Table I-6
Significant Impact Guidance for Sidewalks

Non-Platoon Flow				Platoon Flow			
Sliding Scale Formula: $Y \geq X/9.0 - 0.31$				Sliding Scale Formula: $Y \geq X/(9.5 - 0.321)$			
Non-CBD Areas		CBD Areas		Non-CBD Areas		CBD Areas	
No Action Ped. Space (X, SFP)	With Action Ped. Space Reduc. (Y, SFP)	No Action Ped. Space (X, SFP)	With Action Ped. Space Reduc. (Y, SFP)	No Action Ped. Space (X, SFP)	With Action Ped. Space Reduc. (Y, SFP)	No Action Ped. Space (X, SFP)	With Action Ped. Space Reduc. (Y, SFP)
—	—	—	—	43.5 to 44.3	≥ 4.3	—	—
—	—	—	—	42.5 to 43.4	≥ 4.2	—	—
—	—	—	—	41.6 to 42.4	≥ 4.1	—	—
—	—	—	—	40.6 to 41.5	≥ 4.0	—	—
—	—	—	—	39.7 to 40.5	≥ 3.9	—	—
—	—	—	—	38.7 to 39.6	≥ 3.8	38.7 to 39.2	≥ 3.8
—	—	—	—	37.8 to 38.6	≥ 3.7	37.8 to 38.6	≥ 3.7
—	—	—	—	36.8 to 37.7	≥ 3.6	36.8 to 37.7	≥ 3.6
—	—	—	—	35.9 to 36.7	≥ 3.5	35.9 to 36.7	≥ 3.5
—	—	—	—	34.9 to 35.8	≥ 3.4	34.9 to 35.8	≥ 3.4
—	—	—	—	34.0 to 34.8	≥ 3.3	34.0 to 34.8	≥ 3.3
—	—	—	—	33.0 to 33.9	≥ 3.2	33.0 to 33.9	≥ 3.2
—	—	—	—	32.1 to 32.9	≥ 3.1	32.1 to 32.9	≥ 3.1
—	—	—	—	31.1 to 32.0	≥ 3.0	31.1 to 32.0	≥ 3.0
—	—	—	—	30.2 to 31.0	≥ 2.9	30.2 to 31.0	≥ 2.9
—	—	—	—	29.2 to 30.1	≥ 2.8	29.2 to 30.1	≥ 2.8
25.8 to 26.6	≥ 2.6	—	—	28.3 to 29.1	≥ 2.7	28.3 to 29.1	≥ 2.7
24.9 to 25.7	≥ 2.5	—	—	27.3 to 28.2	≥ 2.6	27.3 to 28.2	≥ 2.6
24.0 to 24.8	≥ 2.4	—	—	26.4 to 27.2	≥ 2.5	26.4 to 27.2	≥ 2.5
23.1 to 23.9	≥ 2.3	—	—	25.4 to 26.3	≥ 2.4	25.4 to 26.3	≥ 2.4
22.2 to 23.0	≥ 2.2	—	—	24.5 to 25.3	≥ 2.3	24.5 to 25.3	≥ 2.3
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1	23.5 to 24.4	≥ 2.2	23.5 to 24.4	≥ 2.2
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0	22.6 to 23.4	≥ 2.1	22.6 to 23.4	≥ 2.1
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9	21.6 to 22.5	≥ 2.0	21.6 to 22.5	≥ 2.0
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8	20.7 to 21.5	≥ 1.9	20.7 to 21.5	≥ 1.9
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7	19.7 to 20.6	≥ 1.8	19.7 to 20.6	≥ 1.8
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6	18.8 to 19.6	≥ 1.7	18.8 to 19.6	≥ 1.7
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5	17.8 to 18.7	≥ 1.6	17.8 to 18.7	≥ 1.6
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4	16.9 to 17.7	≥ 1.5	16.9 to 17.7	≥ 1.5
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3	15.9 to 16.8	≥ 1.4	15.9 to 16.8	≥ 1.4
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2	15.0 to 15.8	≥ 1.3	15.0 to 15.8	≥ 1.3
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1	14.0 to 14.9	≥ 1.2	14.0 to 14.9	≥ 1.2
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0	13.1 to 13.9	≥ 1.1	13.1 to 13.9	≥ 1.1
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9	12.1 to 13.0	≥ 1.0	12.1 to 13.0	≥ 1.0
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8	11.2 to 12.0	≥ 0.9	11.2 to 12.0	≥ 0.9
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7	10.2 to 11.1	≥ 0.8	10.2 to 11.1	≥ 0.8
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6	9.3 to 10.1	≥ 0.7	9.3 to 10.1	≥ 0.7
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5	8.3 to 9.2	≥ 0.6	8.3 to 9.2	≥ 0.6
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4	7.4 to 8.2	≥ 0.5	7.4 to 8.2	≥ 0.5
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3	6.4 to 7.3	≥ 0.4	6.4 to 7.3	≥ 0.4
< 5.1	≥ 0.2	< 5.1	≥ 0.2	< 6.4	≥ 0.3	< 6.4	≥ 0.3
Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP.							
Sources: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> .							

Table I-7

Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: $Y \geq X/9.0 - 0.31$			
Non-CBD Areas		CBD Areas	
No Action Pedestrian Space (X, SFP)	With Action Pedestrian Space Reduction (Y, SFP)	No Action Pedestrian Space (X, SFP)	With Action Pedestrian Space Reduction (Y, SFP)
25.8 to 26.6	≥ 2.6	—	—
24.9 to 25.7	≥ 2.5	—	—
24.0 to 24.8	≥ 2.4	—	—
23.1 to 23.9	≥ 2.3	—	—
22.2 to 23.0	≥ 2.2	—	—
21.3 to 22.1	≥ 2.1	21.3 to 21.5	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2	< 5.1	≥ 0.2
Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP. Sources: New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> .			

D. DETAILED PEDESTRIAN ANALYSIS

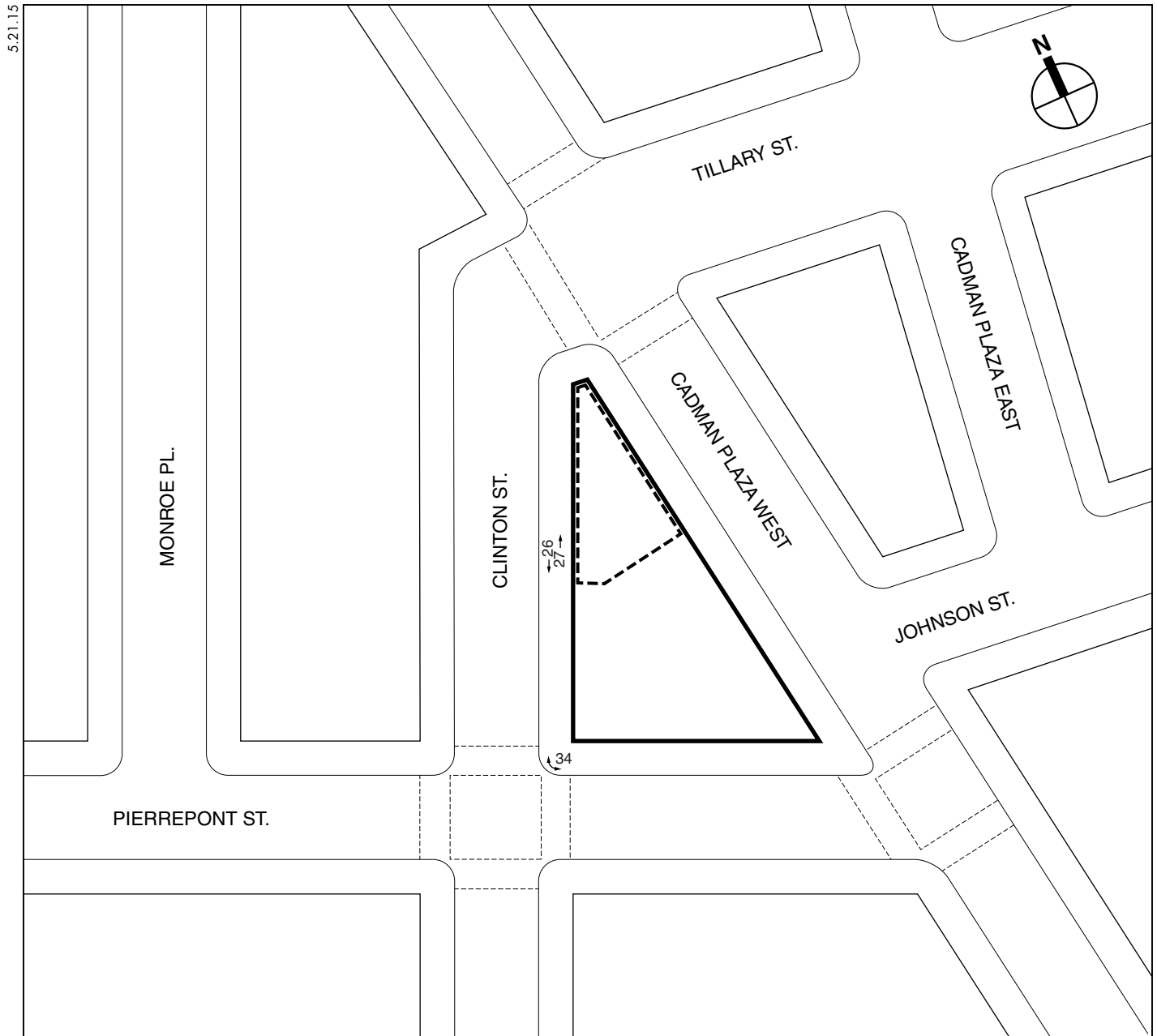
As described above in Section B, “Preliminary Analysis Methodology and Screening Assessment,” Level 1 and Level 2 screening analyses were prepared to identify the pedestrian elements warranted a detailed analysis. Based on the assignment of pedestrian trips, one sidewalk and one corner were selected for analysis for the weekday AM and PM peak hours.

2014 EXISTING CONDITIONS

Pedestrian data were collected in November 2014 in accordance with procedures outlined in the *CEQR Technical Manual* during the weekday hours of 7:00 AM to 10:00 AM, and 4:00 PM to 7:00 PM.

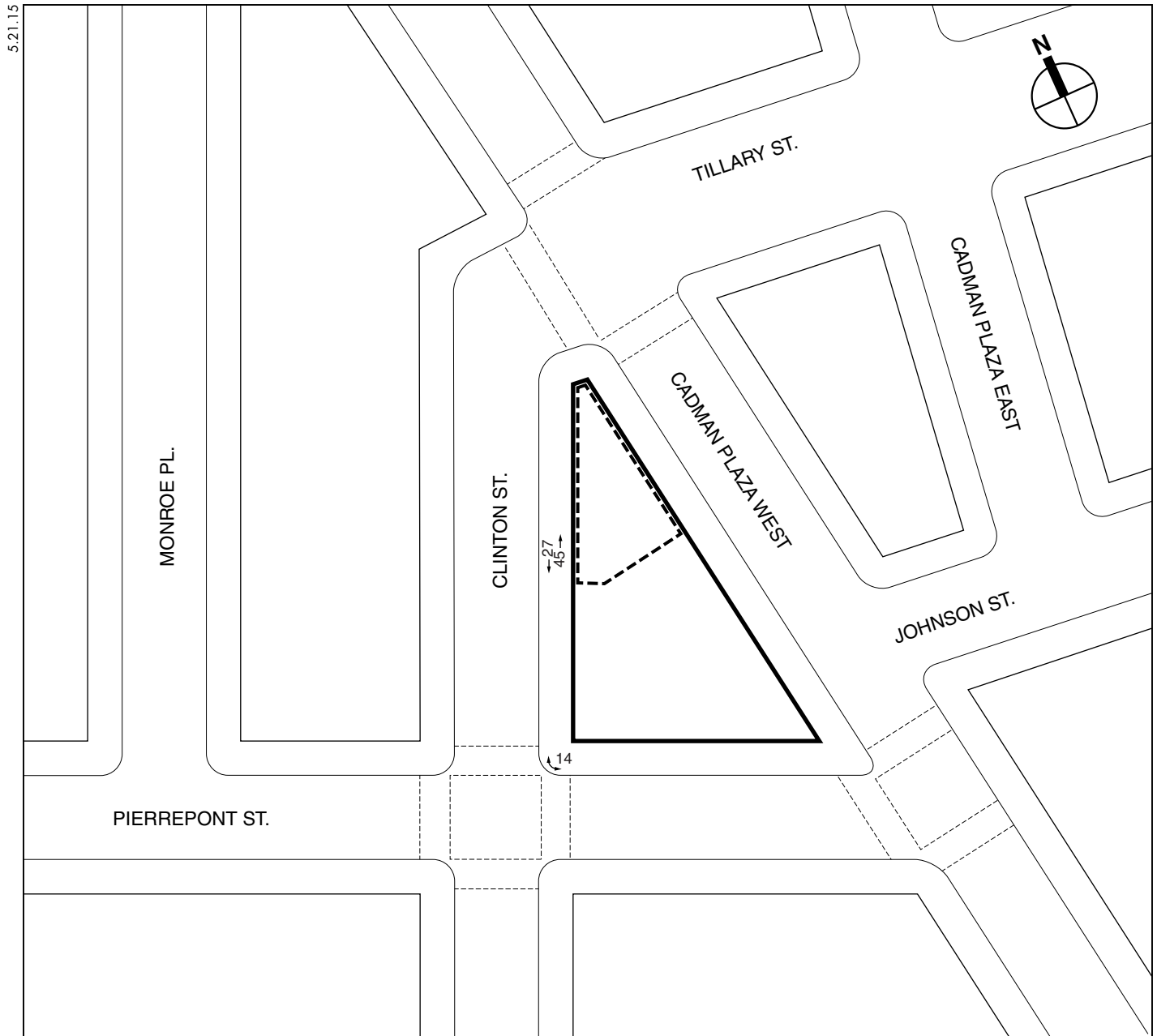
STREET-LEVEL PEDESTRIAN OPERATIONS

Peak hours were determined by comparing rolling hourly averages and the highest 15-minute volumes within the selected peak hours were selected for analysis. The analysis existing peak hours were determined to be 8:15 AM to 9:15 AM and 4:00 PM to 5:00 PM. The existing peak hour pedestrian volumes are shown in **Figures I-4 and I-5**. As shown in **Table I-8 and I-9**, both sidewalk and corner reservoir analysis locations currently operate at acceptable mid-LOS D or better (minimum of 31.5 SFP platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks).



— Project Area (Zoning Lot)

- - - - - Development Site



— Project Area (Zoning Lot)

- - - - - Development Site

Table I-8
2014 Existing Conditions: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	53	0.80	1,315.0	A
Weekday PM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	72	0.80	967.9	A
Note: SFP = square feet per pedestrian						

Table I-9
2014 Existing Conditions: Corner Analysis

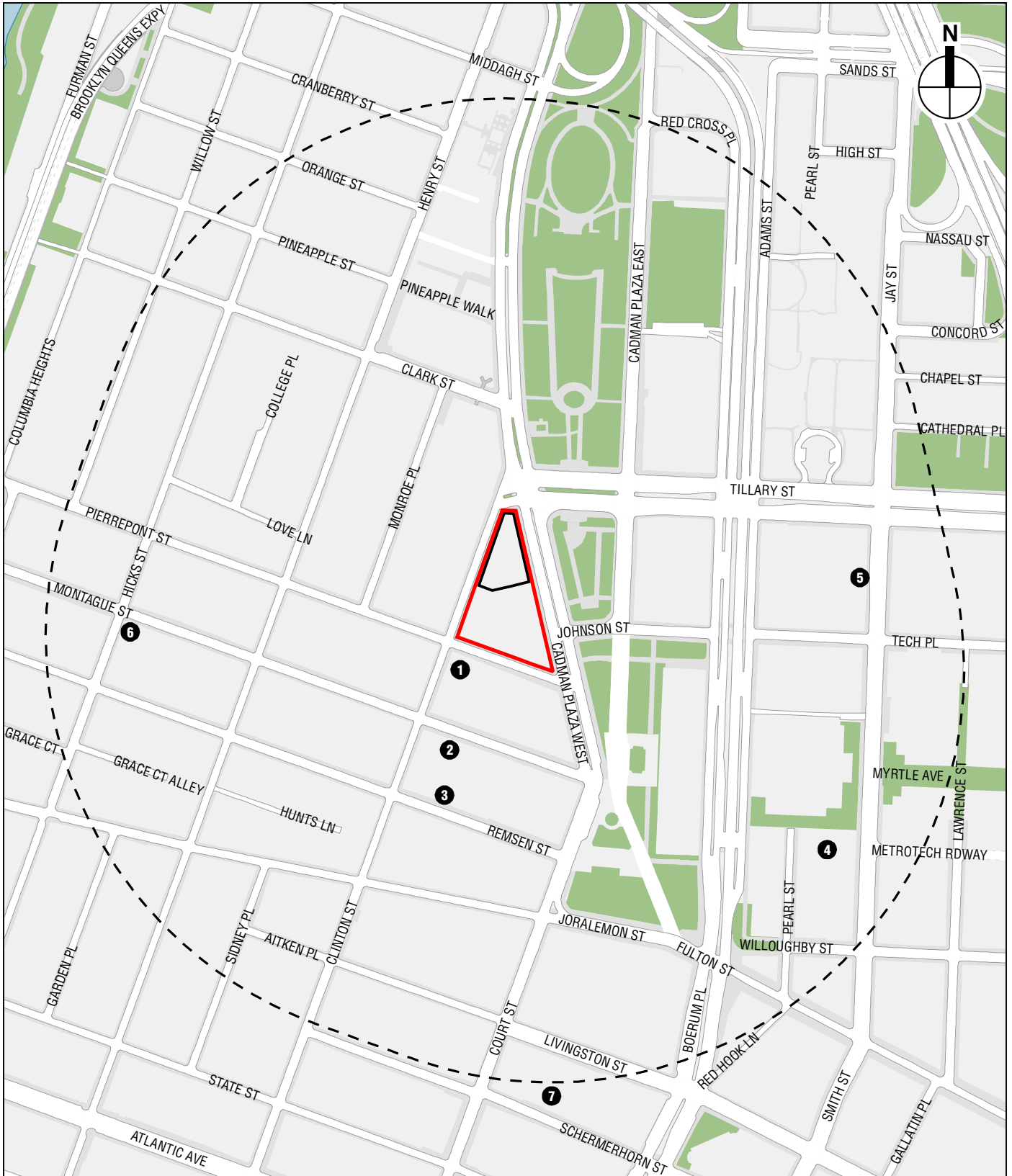
Location	Corner	Weekday AM Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS
Clinton Street and Pierrepont Street	Northeast	83.0	A	195.7	A
Note: SFP = square feet per pedestrian					

THE FUTURE WITHOUT THE PROPOSED ACTIONS

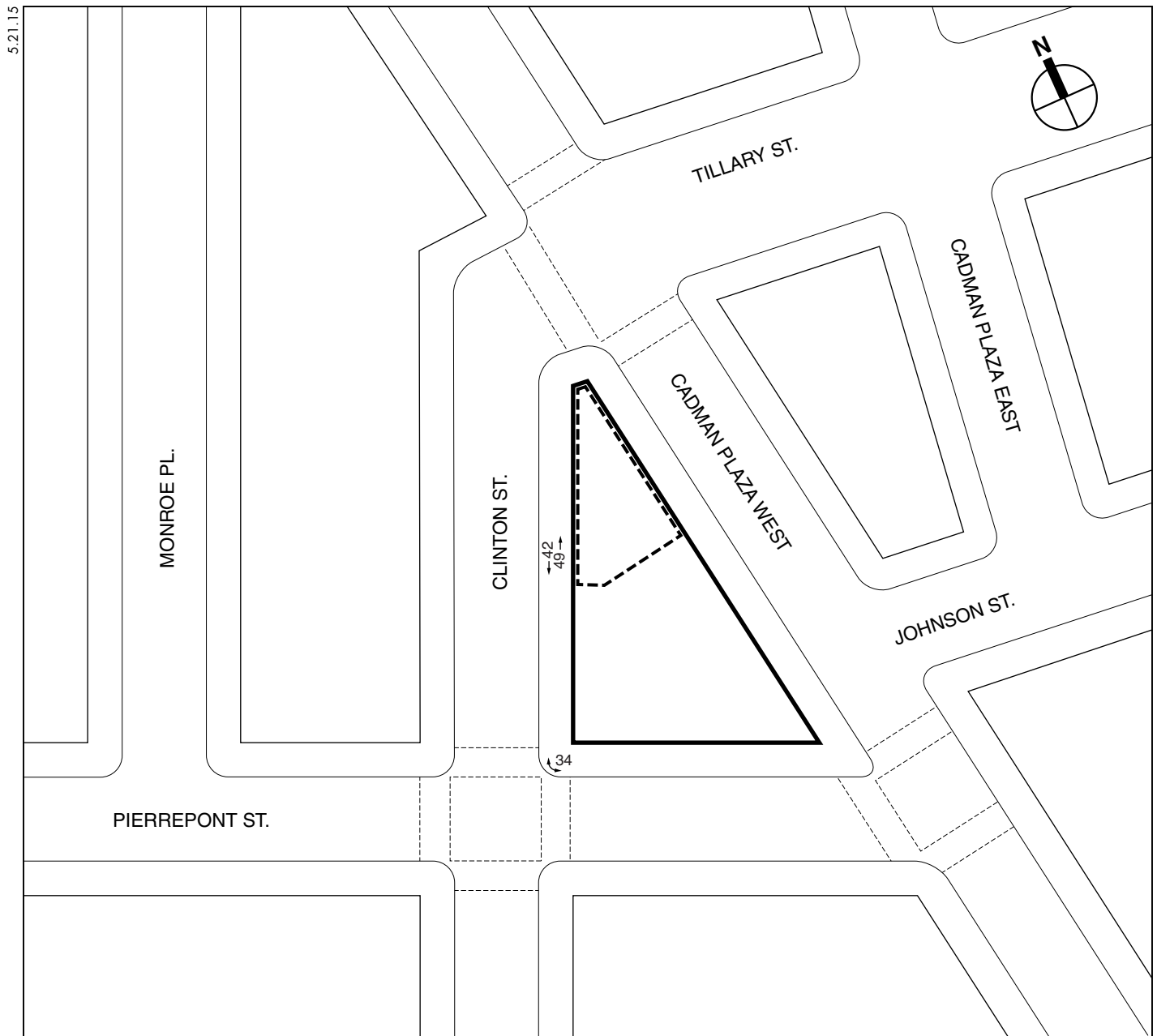
No Action condition pedestrian volumes were estimated by increasing existing pedestrian levels to reflect expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the years 2014 to 2019. A total of 7 development projects expected to occur in the No Action condition (No Build projects) were identified as being planned for the 1/4-mile study area (see **Figure I-6**). However, some of these planned projects are modest in size and would be very modest traffic generators. After reviewing the development programs for each of the planned projects, it was determined that background growth will address the increase in traffic and pedestrian levels for 3 of the small- to moderate-sized projects in the study area. For the other No Build projects, person and vehicle trips were determined and incorporated into the No Action analyses. **Table I-10** and **Figure I-6** summarize the projects that were accounted for in this future 2019 baseline, including those that were considered as part of the study area background growth. Trips generated in the No Action condition are shown in **Figures I-7 and I-8**.

STREET-LEVEL PEDESTRIAN OPERATIONS

As shown in **Tables I-11 and I-12**, in the No Action condition, both sidewalk and corner reservoir analysis locations will continue to operate at acceptable mid-LOS D or better service levels (31.5 SFP platoon flows for sidewalks; minimum of 19.5 SFP for corners and crosswalks).

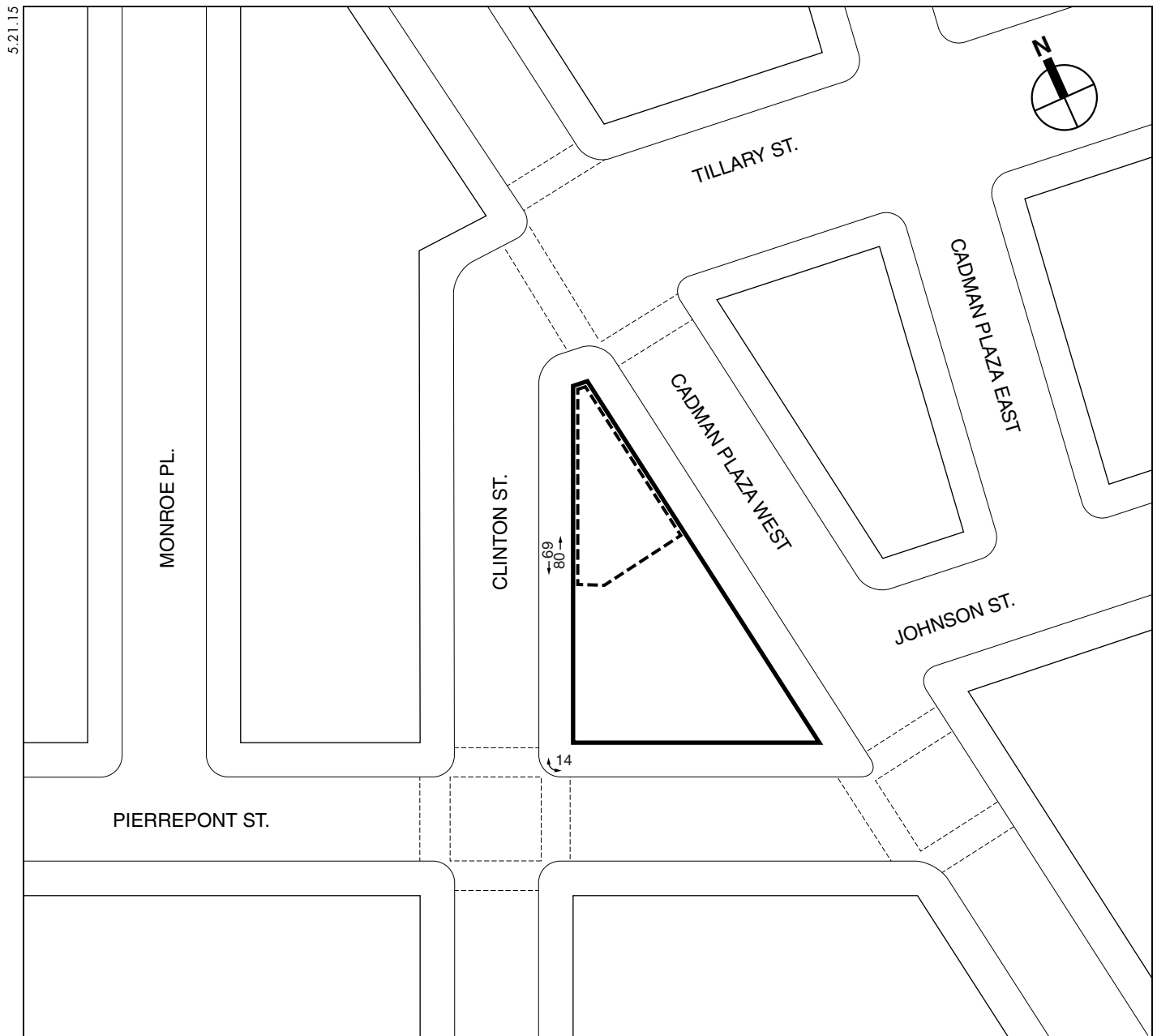


- Project Area
- Development Site
- Study Area Boundary (Quarter-Mile Perimeter)
- No Build Project



— Project Area (Zoning Lot)

- - - - - Development Site



— Project Area (Zoning Lot)

- - - - - Development Site

Table I-10
No Build Projects Expected to be Complete by 2019

Map Ref. No. ¹	Project Name/ Address	Development Program	Transportation Assumptions	Status/ Build Year
Development Projects Within 1/4-Mile				
1	The Brooklyn Trust Company Building	12 residential units	Included in background growth	2014
2	172 Montague Street	Mixed commercial/residential: 13,673 gsf retail, 62 residential units	Transportation assumptions from <i>CEQR Technical Manual</i> , the <i>Atlantic Yards FSEIS</i> (2014), and 2008-2012 U.S. Census ACS JTW estimates	2015
3	153 Remsen Street	Mixed commercial/residential: 4,465 gsf retail, 60 residential units	Included in background growth	2019
4	NYU CUSP	Mixed commercial/community facility: 20,000 gsf retail; 203,000 gsf office; 150,000 gsf academic facility	Transportation assumptions from the <i>NYU/CUSP EAS</i> (2012)	2017
5	CUNY City Tech Klitgord Academic Bldg	385,000 gsf academic facility	See project site 4, above	2017
6	Bossert Hotel	280-room hotel	Transportation assumptions from <i>CEQR Technical Manual</i> , and the <i>Atlantic Yards FSEIS</i> (2014)	2015
7	71-79 Schermerhorn Street	5 residential units	Included in background growth	2019
Notes:				
1. See Figure I-5 .				

Table I-11
2019 No Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	91	0.80	765.8	A
Weekday PM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	149	0.80	467.6	B
Note: SFP = square feet per pedestrian						

Table I-12
2019 No Action Condition: Corner Analysis

Location	Corner	Weekday AM Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS
Clinton Street and Pierrepont Street	Northeast	60.9	A	134.6	A
Note: SFP = square feet per pedestrian					

PROBABLE IMPACTS OF THE PROPOSED PROJECT

Project-generated pedestrian volumes were assigned to the pedestrian network considering current land uses in the area, population distribution, available transit services, and surrounding pedestrian facilities. The hourly incremental pedestrian volumes presented above in Section B, “Level 2 Screening Assessment”, were added to the projected 2019 No Action volumes to generate the 2019 With Action pedestrian volumes for analysis (see **Figures I-9 and I-10**).

STREET-LEVEL PEDESTRIAN OPERATIONS

As shown in **Tables I-13 and I-14**, based on the *CEQR Technical Manual* sliding scale impact thresholds, no significant adverse pedestrian impacts were identified for either of the sidewalk or corner analysis locations during the peak hours analyzed. Therefore, the proposed mixed-use building on the development site is not expected to result in any significant adverse pedestrian impacts.

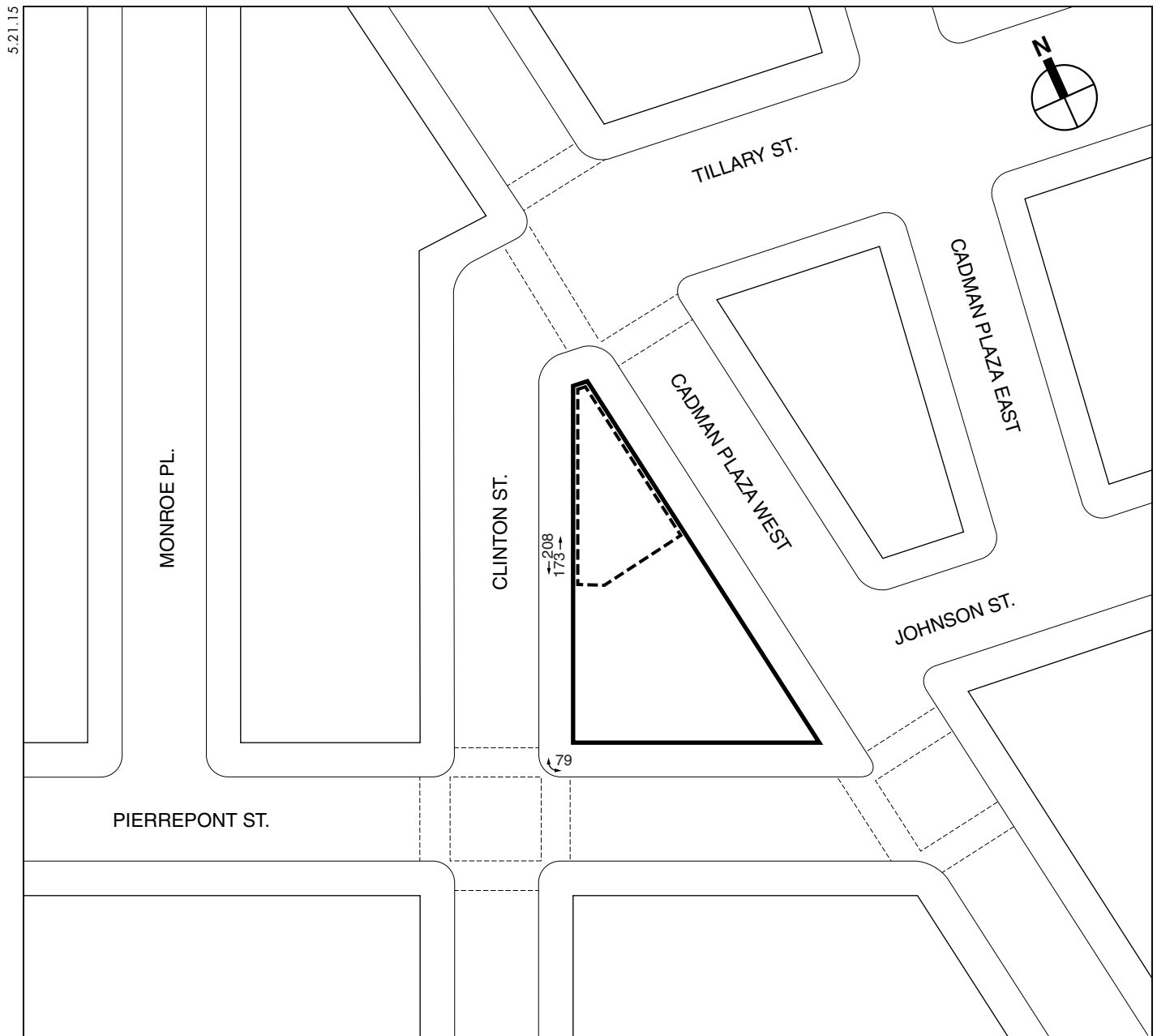
Table I-13
2019 With Action Condition: Sidewalk Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	381	0.80	182.6	B
Weekday PM Peak Hour						
Clinton Street between Pierrepont Street and Tillary Street	East	5.5	476	0.80	146.0	B
Note: SFP = square feet per pedestrian						

Table I-14
2019 With Action Condition: Corner Analysis

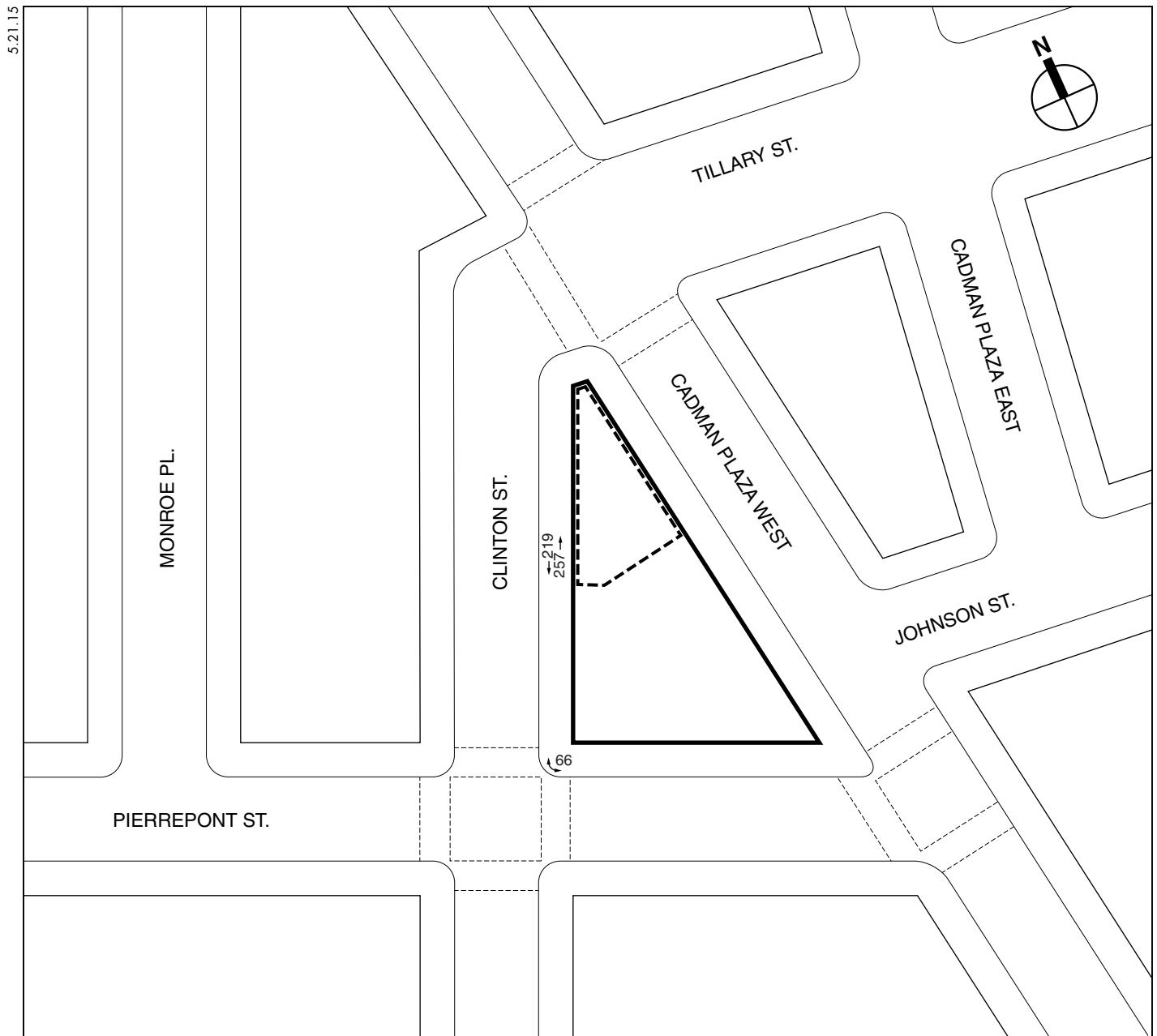
Location	Corner	Weekday AM Peak Hour		Weekday PM Peak Hour	
		SFP	LOS	SFP	LOS
Clinton Street and Pierrepont Street	Northeast	45.3	B	85.5	A
Note: SFP = square feet per pedestrian					

*



— Project Area (Zoning Lot)

- - - - - Development Site



— Project Area (Zoning Lot)

- - - - - Development Site

A. INTRODUCTION

This attachment examines the potential for direct and indirect air quality impacts associated with the proposed mixed-use building on 280 Cadman Plaza West, the development site. Direct impacts stem from emissions generated by stationary sources at a project site, such as emissions from on-site fuel combustion for heating and hot water systems. Indirect impacts include emissions from motor vehicle trips (“mobile sources”) generated by the project or other changes to future traffic conditions due to a project.

With respect to mobile sources, the maximum hourly incremental traffic generated by the proposed mixed-use development would generate 31, 17, and 29 incremental vehicle trips during the weekday AM, midday, and PM peak hours, respectively (see Attachment I, “Transportation”). These increments do not exceed the 2014 *CEQR Technical Manual* carbon monoxide (CO) screening threshold of 160 peak hour trips at intersections in the project area, or the fine particulate matter (PM_{2.5}) emission screening thresholds discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*. Therefore, no mobile source analysis is required.

The proposed mixed-use development would include fossil fuel-fired heating and hot water systems. Therefore, a stationary source analysis was conducted to evaluate the potential for an impact on air quality from the proposed emission sources.

PRINCIPAL CONCLUSIONS

As described in detail below, based on stationary source assessments that considered the effect of nitrogen dioxide (NO₂), sulfur dioxide (SO₂) and particulate matter (PM) emissions from the proposed mixed-use development’s fossil fuel-fired combustion sources on pollutant levels, there would be no potential for significant adverse impacts on air quality from the proposed stationary sources for the proposed mixed-use development. In addition, an analysis of nearby large and major sources of emissions was performed, which determined that there would be no significant adverse air quality impact on the proposed mixed-use development.

B. POLLUTANTS FOR ANALYSIS

Ambient air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of CO are predominantly influenced by mobile source emissions. PM, volatile organic compounds (VOCs), and nitrogen oxides (nitric oxide, or NO, and NO₂, collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of SO₂ are associated mainly with stationary sources, and some sources utilizing non-road diesel such as large international marine engines. On-road diesel vehicles currently contribute very little to SO₂ emissions since the sulfur content

of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs. Ambient concentrations of CO, PM, NO_2 , SO_2 , and lead are regulated by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA), and are referred to as 'criteria pollutants.' Emissions of VOCs, NO_x , and other precursors to criteria pollutants are also regulated by EPA.

CARBON MONOXIDE

CO, a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. CO concentrations can diminish rapidly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be predicted on a local, or microscale, basis.

The proposed project would not increase traffic volumes in the study area above the *CEQR Technical Manual* CO screening threshold of 160 peak hour trips at nearby intersections in the study area. Therefore, a mobile source analysis of CO emissions was not conducted.

NITROGEN OXIDES, VOCS, AND OZONE

NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any action or project to regional emissions of these pollutants would include any added stationary or mobile source emissions.

Compared with the No Action condition, the proposed project would not have a significant effect on the overall volume of vehicular miles traveled in the metropolitan area; thus, no measurable impact on regional NO_x emissions or on ozone levels is predicted. Consistent with *CEQR Technical Manual* guidelines, an analysis of emissions of these pollutants from mobile sources was therefore not warranted.

In addition to being a precursor to the formation of ozone, NO_2 (one component of NO_x) is also a regulated pollutant. Since NO_2 is mostly formed from the transformation of NO in the atmosphere, it has mostly been of concern further downwind from large stationary point sources, and not a local concern from mobile sources. (NO_x emissions from fuel combustion consist of approximately 90 percent NO and 10 percent NO_2 at the source.) However, with the promulgation of the 2010 1-hour average standard for NO_2 , local sources such as vehicular emissions may become of greater concern for this pollutant.

In terms of emissions of NO_2 from mobile sources, the relatively small increase in the number of project vehicles as compared to existing or No Build traffic in the study area would not be expected to significantly affect levels of NO_2 experienced near roadways; therefore, no analysis is considered necessary.

Potential impacts on local NO_2 concentrations from the fuel combustion for the proposed project's heating and hot water systems were evaluated.

LEAD

Airborne lead emissions are currently associated principally with industrial sources. Lead in gasoline has been banned under the Clean Air Act, and therefore, lead is not a pollutant of concern for the proposed project. Therefore, an analysis of this pollutant was not warranted.

RESPIRABLE PARTICULATE MATTER—PM₁₀ AND PM_{2.5}

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOCs; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption (accumulation of gases, liquids, or solutes on the surface of a solid or liquid) of other pollutants, often toxic, and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}), and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM₁₀, which includes PM_{2.5}). PM_{2.5} has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. PM_{2.5} is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from a source exhaust) or from precursor gases reacting in the atmosphere to form secondary PM.

Diesel-powered vehicles, especially heavy duty trucks and buses, are a significant source of respirable PM, most of which is PM_{2.5}; PM concentrations may, consequently, be locally elevated near roadways with high volumes of heavy diesel powered vehicles.

As part of the proposed project, fossil fuel would be combusted in the proposed mixed-use development's heating and hot water systems. A worst-case analysis of future levels of PM₁₀ and PM_{2.5} with the proposed mixed-use development was performed, assuming the use of No. 2 oil .

SULFUR DIOXIDE

SO₂ emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). SO₂ is also of concern as a precursor to PM_{2.5} and is regulated as a PM_{2.5} precursor under the New Source Review permitting program for large sources. Due to the federal restrictions on the sulfur content in diesel fuel for on-road and non-road vehicles, no significant quantities are emitted from vehicular sources. Vehicular sources of SO₂ are not significant and therefore, analysis of SO₂ from mobile sources was not warranted.

As part of the proposed project, fossil fuel would be combusted in the proposed mixed-use development's heating and hot water systems. A worst-case analysis of future levels of SO₂ with the proposed mixed-use development was performed, assuming the use of No. 2 oil.

C. AIR QUALITY REGULATIONS, STANDARDS, AND BENCHMARKS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the CAA, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO₂, ozone, respirable PM (both PM_{2.5} and PM₁₀), SO₂, and lead. The primary standards represent levels that are required to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The primary standards are generally either the same as the secondary standards or more restrictive. The NAAQS are presented in **Table J-1**. The NAAQS for CO, annual NO₂, and 3-hour SO₂ have also been adopted as the ambient air quality standards for New York State, but are defined on a running 12-month basis rather than for calendar years only. New York State also has standards for total suspended PM, settleable particles, non-methane hydrocarbons, 24-hour and annual SO₂, and ozone which correspond to federal standards that have since been revoked or replaced, and for the noncriteria pollutants beryllium, fluoride, and hydrogen sulfide.

On November 25, 2014, EPA proposed a change in the 2008 ozone NAAQS, lowering the primary NAAQS from the current 0.075 ppm level to within the range of 0.065 to 0.070 ppm. EPA will take final action on the proposed standards by Oct. 1, 2015. EPA expects to issue final area designations by October 1, 2017; those designations likely would be based on 2014-2016 air quality data.

NAAQS ATTAINMENT STATUS AND STATE IMPLEMENTATION PLANS

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the Clean Air Act, followed by a plan for maintaining attainment status once the area is in attainment.

In 2002, EPA re-designated New York City as in attainment for CO. The area is now under a maintenance plan for this standard.

New York City and Nassau, Suffolk, Rockland, Westchester, and Orange Counties, which had been designated as a PM_{2.5} non-attainment area under the CAA due to exceedance of the 1997 annual average standard, were redesignated as in attainment for that standard on April 18, 2014, and are now under a maintenance plan. EPA recently lowered the annual average primary standard to 12 µg/m³ effective March 2013. EPA designated the area as in attainment for the new 12 µg/m³ NAAQS effective January 15, 2015.

On April 18, 2014, EPA redesignated the New York City Metropolitan Area, which had been nonattainment with the 2006 24-hour PM_{2.5} NAAQS, as in attainment. The area is now under a maintenance plan for this standard.

Table J-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m ³	ppm	µg/m ³
Carbon Monoxide (CO)				
8-Hour Average ⁽¹⁾	9	10,000	None	
1-Hour Average ⁽¹⁾	35	40,000		
Lead				
Rolling 3-Month Average ⁽²⁾	NA	0.15	NA	0.15
Nitrogen Dioxide (NO₂)				
1-Hour Average ⁽³⁾	0.100	189	None	
Annual Average	0.053	100	0.053	100
Ozone (O₃)				
8-Hour Average ^(4,5)	0.075	150	0.075	150
Respirable Particulate Matter (PM₁₀)				
24-Hour Average ⁽¹⁾	NA	150	NA	150
Fine Respirable Particulate Matter (PM_{2.5})				
Annual Mean ⁽⁶⁾	NA	12	NA	15
24-Hour Average ⁽⁷⁾	NA	35	NA	35
Sulfur Dioxide (SO₂) ⁽⁸⁾				
1-Hour Average ⁽⁹⁾	0.075	196	NA	NA
Maximum 3-Hour Average ⁽¹⁾	NA	NA	0.50	1,300
Notes: ppm – parts per million (unit of measure for gases only) µg/m ³ – micrograms per cubic meter (unit of measure for gases and particles, including lead) NA – not applicable All annual periods refer to calendar year. Standards are defined in ppm. Approximately equivalent concentrations in µg/m ³ are presented. ⁽¹⁾ Not to be exceeded more than once a year. ⁽²⁾ EPA has lowered the NAAQS down from 1.5 µg/m ³ , effective January 12, 2009. ⁽³⁾ 3-year average of the annual 98th percentile daily maximum 1-hr average concentration. Effective April 12, 2010. ⁽⁴⁾ 3-year average of the annual fourth highest daily maximum 8-hr average concentration. ⁽⁵⁾ EPA has proposed lowering the primary and secondary standards further to within the range 0.065-0.070 ppm. EPA will take final action on the proposed standards by Oct. 1, 2015. ⁽⁶⁾ 3-year average of annual mean. EPA has lowered the primary standard from 15 µg/m ³ , effective March 2013. ⁽⁷⁾ Not to be exceeded by the annual 98th percentile when averaged over 3 years. ⁽⁸⁾ EPA revoked the 24-hour and annual primary standards, replacing them with a 1-hour average standard. Effective August 23, 2010. ⁽⁹⁾ 3-year average of the annual 99th percentile daily maximum 1-hr average concentration. Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.				

Effective June 15, 2004, EPA designated Nassau, Rockland, Suffolk, Westchester and the five New York City counties (NY portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT, NAA) as moderate non-attainment areas for the 1997 8-hour average ozone standard (0.08 ppm). Based on recent monitoring data, EPA determined that the NY-NJ-CT nonattainment area has attained the 1997 8-hour ozone NAAQS. Although not yet a redesignation to attainment status, this determination removes further requirements under the 1997 8-hour standard. In March 2008 EPA strengthened the 8-hour ozone standards. EPA designated the New York-Northern New Jersey-Long Island, NY-NJ-CT NAA as a marginal non-attainment area for the 2008 ozone NAAQS, effective July 20, 2012. In June, 2012 and again in March, 2015 New York State formally requested that the EPA reclassify the area as a moderate NAA. New York State has begun submitting SIP documents in December 2014.

New York City is currently in attainment of the annual average NO_2 standard. EPA has designated the entire state of New York as “unclassifiable/attainment” of this standard. Since additional monitoring is required for the 1-hour standard, areas will be reclassified once three years of monitoring data are available (likely 2017).

EPA established a 1-hour SO_2 standard, replacing the former 24-hour and annual standards. Based on the available monitoring data, all New York State counties currently meet the 1-hour standard. Draft attainment designations were published by EPA in February 2013, indicating that EPA is deferring action to designate areas in New York State and expects to proceed with designations once additional monitoring data are gathered.

DETERMINING THE SIGNIFICANCE OF AIR QUALITY IMPACTS

The New York State Environmental Quality Review Act (SEQRA) regulations and *CEQR Technical Manual* indicate that the significance of a predicted consequence of a project (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.¹ In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table J-1**) would be deemed to have a potential significant adverse impact.

In addition, in order to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants; any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

PM_{2.5} DE MINIMIS CRITERIA

New York City uses *de minimis* criteria to determine the potential for significant adverse $\text{PM}_{2.5}$ impacts under CEQR as follows:

- Predicted increase of more than half the difference between the background concentration and the 24-hour standard;
- Annual average $\text{PM}_{2.5}$ concentration increments which are predicted to be greater than $0.1 \mu\text{g}/\text{m}^3$ 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 at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Annual average $\text{PM}_{2.5}$ concentration increments which are predicted to be greater than $0.3 \mu\text{g}/\text{m}^3$ at a discrete receptor location (elevated or ground level).

Actions under CEQR predicted to increase $\text{PM}_{2.5}$ concentrations by more than the above *de minimis* criteria will be considered to have a potential significant adverse impact.

¹ *CEQR Technical Manual*, Chapter 1, section 222, March 2014; and State Environmental Quality Review Regulations, 6 NYCRR § 617.7

The *de minimis* criteria have been used to evaluate the significance of predicted impacts of the proposed project on PM_{2.5} concentrations.

D. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

PROPOSED PROJECT'S HEATING AND HOT WATER SYSTEMS

AERSCREEN ANALYSIS

Potential NO₂, SO₂, PM_{2.5} and PM₁₀ impacts from the proposed mixed-use development's heating and hot water system were evaluated using the EPA-approved AERSCREEN model (version 14147, EPA, 2014). AERSCREEN predicts worst-case one-hour impacts downwind from a point, area, or volume source. The model generates worst-case meteorology using representative minimum and maximum ambient air temperatures, and site-specific surface characteristics such as albedo, Bowen ratio, and surface roughness.² The model incorporates the PRIME downwash algorithms that are part of the AERMOD refined model and utilizes the PRIME plume rise model enhancements to the Building Profile Input Program (BPIPRIM) to provide a detailed analysis of downwash influences on 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 and with urban diffusion coefficients based on a review of land-use maps of the area to calculate ambient pollutant concentrations from the proposed project. Other model options were selected based on EPA guidance.

NO₂ 1-hour concentrations were estimated using an NO₂ to NO_x ratio of 0.8 for the maximum 1-hour concentration. The 0.8 ratio used for the maximum 1-hour concentration is the recommended default ambient ratio per EPA's guidance memo providing additional clarification regarding application of Appendix W Modeling Guidance for the 1-hour NO₂ NAAQS.³

Emission Rates and Stack Parameters

Annual emission rates for the heating and hot water systems were calculated based on fuel usage estimates, using energy consumption estimates based on type of development and building's size (in square feet) as recommended in the *CEQR Technical Manual*, and applying the EPA's *Compilations of Air Pollutant Emission Factors (AP-42)*⁴ emission factors for No. 2 fuel oil-fired boilers. The short-term emission rates were calculated by scaling the annual emissions to account for a 100-day heating season.

² The 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.

³ EPA, Memorandum, "Clarification on the use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO₂ National Ambient Air Quality Standard", September 30, 2014.

⁴ EPA, *Compilations of Air Pollutant Emission Factors AP-42*, Fifth Edition, Volume I: Stationary Point and Area Sources, <http://www.epa.gov/ttn/chief/ap42>

The modeled stack parameters and emission rates used for the AERSCREEN analysis are presented in **Table J-2**. The heating and hot water systems were assumed to be directed to the top of the proposed mixed-use building.

Table J-2
Stack Parameters and Emission Rates
from the Proposed Mixed-Use Development

Parameter	Value
Stack Height (ft) ⁽¹⁾	443.7
Stack Diameter (ft) ⁽⁴⁾	1.0
Exhaust flow Rate (acfm) ⁽²⁾⁽³⁾	2,832
Exhaust Temperature (°F) ⁽⁴⁾	300
NO ₂ Emission Rate (1-hour) (g/s)	0.186
NO ₂ Emission Rate (Annual) (g/s)	0.051
SO ₂ Emission Rate (1-hour) (g/s)	0.002
SO ₂ Emission Rate (3-hour) (g/s)	0.002
PM ₁₀ Emission Rate (24-hour) (g/s)	0.022
PM _{2.5} Emission Rate (24-hour) (g/s)	0.020
PM _{2.5} Emission Rate (Annual) (g/s)	0.005
Notes:	
(1) The stack is assumed to be located on the mechanical bulkhead roof.	
(2) ACFM = actual cubic feet per minute.	
(3) The stack exhaust flow rate is estimated based on the type of fuel and heat input rates.	
(4) The stack exhaust diameter and temperature are based on similar sized equipment.	

The exhaust(s) for the heating and hot water were assumed to be vented through a single stack at the top of the mechanical bulkhead of the proposed building, at a height of 443.7 feet above grade. The stack location was conservatively modeled at the edge of the lot line closest to the receptor building considered.

Meteorological Data

The meteorological data used by the AERSCREEN model are generated by the MAKEMET program, which uses 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 to determine worst-case hourly impacts. The default minimum and maximum air temperatures of 250 K and 310 K, a minimum wind speed of 0.5 m/s, and an anemometer height of 10 m were used in the model. Surface characteristics from the LaGuardia meteorological station were also used.

Receptor Locations

Receptor information provides the distance from the source, terrain height, and height above ground for selected locations. The screening analysis considered the effect of the proposed development's stationary source emissions on an office building located at 16 Court Street, which is the nearest building of a similar or greater height, approximately 604 feet away from the development site.

Impacts were also evaluated on the adjacent 19-story commercial building (One Pierrepont Plaza). This is conservative since the proposed heating and hot water systems were assumed to vent to the roof of the 36-story proposed building, which would be considerably taller.

Background Concentrations

To estimate the maximum expected pollutant concentration at a given receptor, the predicted impact must be added to a background value that accounts for existing pollutant concentrations from other sources that are not directly accounted for in the model. The background concentrations for the area of the development site are presented in **Table J-3**.

Table J-3
Maximum Background Pollutant Concentrations ($\mu\text{g}/\text{m}^3$)

Pollutant	Average Period	Location	Concentration	NAAQS
NO ₂	Annual	Queens College, Queens	40.7	100
	1-Hour	Queens College, Queens	114	188
SO ₂	3-Hour	Queens College, Queens	64.0	1,300
	1-Hour	Queens College, Queens	52.7	196
PM ₁₀	24-hour	Division Street, NY	48.0	150
PM _{2.5}	24-hour	Division Street, NY	25.3	35
Notes: 1. Consistent with the NAAQS, the PM ₁₀ concentration is the 2nd highest of the latest 3 years. 2. The 1-Hour NO ₂ background concentration is the annual 98th percentile of daily maximum 1-hour average concentration, averaged over the recent 3-years (2011-2013). 3. The 1-Hour SO ₂ background concentration is the annual 99th percentile of daily maximum 1-hour average concentration, averaged over the recent 3-years (2011-2013). Sources: New York State Air Quality Report Ambient Air Monitoring System, NY State Department of Environmental Conservation (NYSDEC), 2009–2013.				

PM_{2.5} annual average impacts are assessed on an incremental basis and compared with the PM_{2.5} *de minimis* criteria, without considering the annual background. Therefore the annual PM_{2.5} background is not presented in the table.

A PM_{2.5} 24-hour average background concentration of 25.3 $\mu\text{g}/\text{m}^3$ (based on the 2011 to 2013 average of 98th percentile concentrations measured at the Queens College monitoring station) was used to establish the *de minimis* value for the 24-hour increment, consistent with the guidance provided in the *CEQR Technical Manual*.

AERMOD ANALYSIS

Since the Brooklyn Supreme Court is classified as a large emission source as per the 2014 *CEQR Technical Manual* (see “Additional Sources” for a description of this source), its potential contribution to PM_{2.5} levels in the ambient air was determined to estimate the total PM_{2.5} background for the purpose of evaluating the proposed project’s 24-hour PM_{2.5} impacts under the *de minimis* criteria. This analysis was performed using the EPA/AMS AERMOD dispersion model, which is described in more detail below.

ADDITIONAL SOURCES

The *CEQR Technical Manual* requires an analysis of projects that may result in a significant adverse impact due to certain types of new uses located near a “large” or “major” emissions source. Major sources are defined as those located at facilities that have a Title V or Prevention of Significant Deterioration air permit, while large sources are defined as those located at facilities that require a State Facility Permit.

To assess the potential effects of these types of existing sources on the proposed mixed-use development, a review of existing permitted facilities was conducted. Within a 1,000-foot study area boundary (the distance referenced in the *CEQR Technical Manual*), sources permitted under

New York State Department of Environmental Conservation (NYSDEC)'s Title V and State Facility Permit programs were considered. One facility with a State Facility permit was identified: the Brooklyn Supreme Court, located at 360 Adam Street, which is approximately 615 feet from the development site. The facility has two 41.6 mmBtu/hr boilers and one 27 mmBtu/hr boiler, each capable of burning natural gas or No. 2 fuel oil. All three boilers exhaust through a common stack. The facility NO_x emissions are capped at 24.9 tons per year as per the State Facility Permit.

Pollutant concentrations were estimated on the proposed mixed-use development site from this facility. In addition, 24-hour average PM_{2.5} concentrations were estimated to determine the Brooklyn Supreme Court's contribution to ambient background concentrations at nearby buildings affected by the proposed project for the purpose of evaluating the proposed project's 24-hour average PM_{2.5} de minimis criteria impacts on these nearby buildings.

The facility emissions were estimated using the information developed for the State Facility Permit application, and applying the EPA's *Compilations of Air Pollutant Emission Factors (AP-42)*⁵ emission factors for No. 2 fuel oil-fired boilers. **Table J-4** presents the emission rates and stack parameters used in the AERMOD analysis.

Table J-4
Stack Parameters and Emission Rates
from the Existing Emission Source

Parameter	Value
Stack Height (ft) ⁽³⁾	180
Stack Diameter (ft) ⁽³⁾	6
Exhaust flow Rate (acfm) ⁽¹⁾⁽²⁾	18,954
Exhaust Temperature (°F)	300
Notes:	
(1) ACFM = actual cubic feet per minute.	
(2) The stack exhaust flow rate is estimated based on the type of fuel and heat input rates.	
(3) The stack exhaust diameter and height is from the State Facility Permit.	
NO ₂ Emission Rate (1-hour) (g/s)	1.23
NO ₂ Emission Rate (Annual) (g/s)	0.68
SO ₂ Emission Rate (1-hour) (g/s)	0.013
SO ₂ Emission Rate (3-hour) (g/s)	0.013
PM ₁₀ Emission Rate (24-hour) (g/s)	0.147
PM _{2.5} Emission Rate (24-hour) (g/s)	0.132
PM _{2.5} Emission Rate (Annual) (g/s)	0.052

Concentrations of NO₂, SO₂, PM₁₀ and PM_{2.5} were estimated using the EPA/AMS AERMOD dispersion model.⁶ 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

⁵ EPA, *Compilations of Air Pollutant Emission Factors AP-42*, Fifth Edition, Volume I: Stationary Point and Area Sources, <http://www.epa.gov/ttn/chief/ap42>

⁶ EPA, *AERMOD: Description Of Model Formulation*, 454/R-03-004, September 2004; and

EPA, *User's Guide for the AMS/EPA Regulatory Model AERMOD*, 454/B-03-001, September 2004 and Addendum December 2006.

(including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatment of the boundary layer theory, understanding of turbulence and dispersion, and includes handling of the interaction 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 has the capability to calculate pollutant concentrations at locations when 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 were made 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 PRIME model, which is designed to predict impacts 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) program for the PRIME model (BPIPRM) was used to determine the projected building dimensions for modeling with the building downwash algorithm enabled. The modeling of plume downwash 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 the worst-case impacts at elevated receptors close to the height of the existing building, which would occur without downwash, as well as the worst-case impacts at lower elevations and ground level, which would occur with downwash, consistent with the recommendations in the *CEQR Technical Manual*.

Annual NO₂ concentrations from the existing emission source were estimated using a NO₂ to NO_x ratio of 0.75, as described in EPA’s *Guideline on Air Quality Models* at 40 CFR part 51 Appendix W, Section 5.2.4.⁷ EPA has recently prepared guidance for assessing 1-hour average NO₂ concentrations for compliance with NAAQS.⁸ Background concentrations are currently monitored at several sites within New York City, which are used for reporting concentrations on a “community” scale. Because this data is compiled on a 1-hour average format, it can be used for comparison with the new 1-hour standards. Therefore, background 1-hour NO₂ concentrations currently measured at the community-scale monitors can be considered representative of background concentrations for purposes of assessing the potential impacts of heating and hot water systems.

EPA’s preferred regulatory stationary source model, AERMOD, is capable of producing detailed output data that can be analyzed at the hourly level required for the form of the 1-hour standards. EPA has also developed guidance to estimate the transformation ratio of NO₂ to NO_x, applicable to combustion sources, as discussed further below. Therefore, an analysis was prepared.

1-Hour average NO₂ concentration increments from the existing boilers were estimated using 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 taken from the nearest available NYSDEC ozone monitoring stations, i.e., the Queens

⁷ http://www.epa.gov/scram001/guidance/guide/appw_05.pdf

⁸ EPA, Memorandum, “Clarification on the use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO₂ National Ambient Air Quality Standard”, September 30, 2014.

College monitoring station in Queens for the years 2009-2013. An initial NO₂ to NO_x ratio of 10 percent at the source exhaust stack was assumed for the boilers, which is considered representative for these source types.

Total 1-hour NO₂ concentrations were determined following methodologies that are accepted by the EPA as appropriate and conservative. The methodology used to determine the total 1-hour NO₂ 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 NO₂ concentration was determined at each receptor 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 five years. This refined approach is recognized as being conservative by EPA and the City and is referenced in EPA modeling guidance.

Five years of surface meteorological data collected from LaGuardia Airport (2009 – 2013) and concurrent upper air data collected at Brookhaven, New York were utilized in the analysis.

Discrete receptors (i.e., locations at which concentrations are calculated) were modeled along the facade of the proposed building to represent operable window locations, intake vents, and otherwise accessible locations such as terraces. In addition, receptors were modeled on the existing buildings at 16 Court Street and One Pierrepont Plaza to determine the additional contribution to PM_{2.5} background concentrations from the Brooklyn Supreme Court's emission sources since these buildings are affected by the Brooklyn Supreme Court. Receptors were placed on the upper portions of these buildings since these represent the locations where the impacts from emissions associated with the proposed project's HVAC systems would be greatest. See **Figure J-1** for the modeled receptors and stack locations.

E. THE FUTURE WITHOUT THE PROPOSED PROJECT

Absent the proposed actions, the existing branch library would remain on the development site. Stationary sources of emissions are lower than they would be with the proposed actions; however, the height of the exhaust stack(s) on the library is much lower than the exhaust stack assumed with the proposed project.

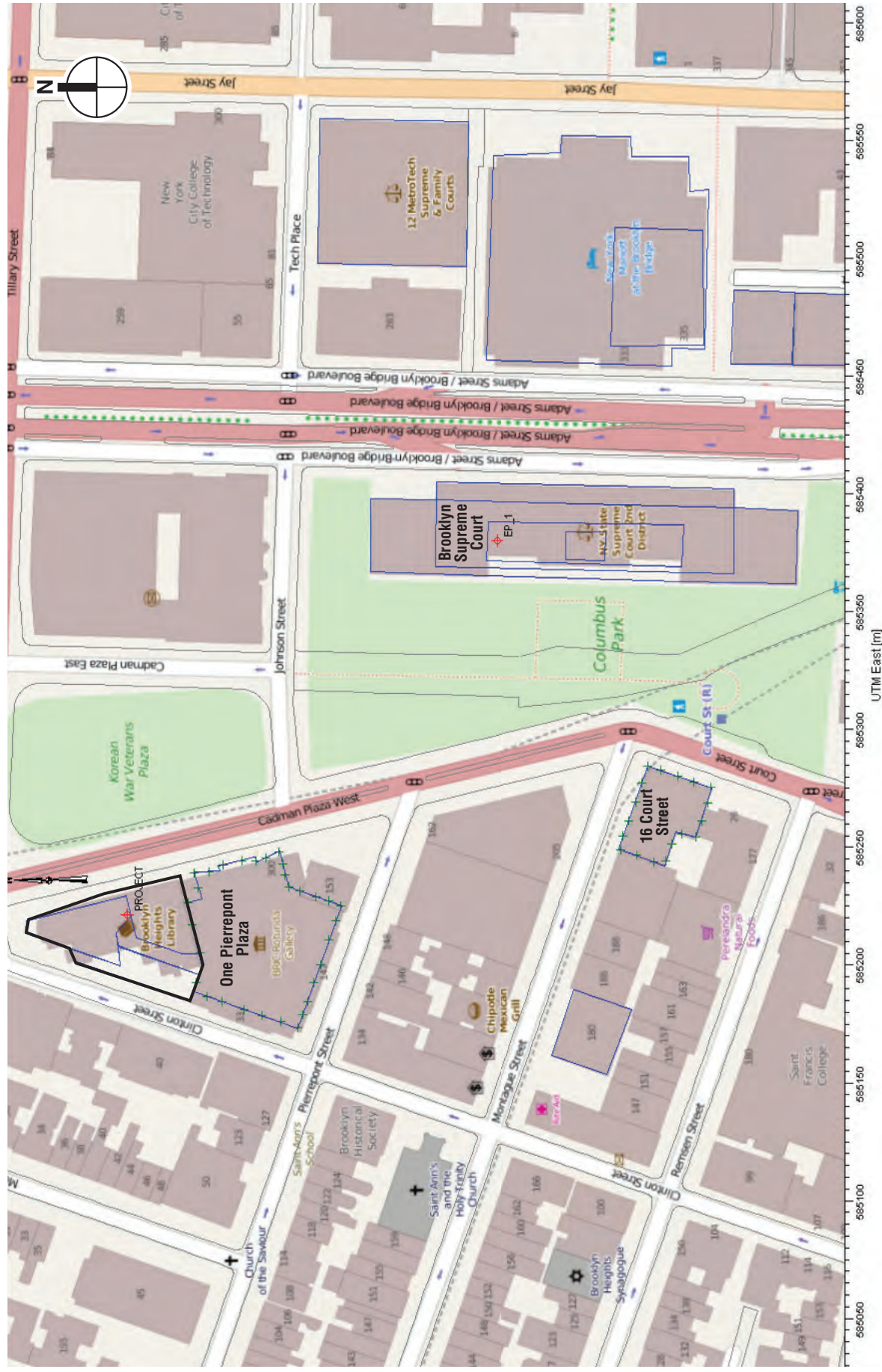
F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

PROPOSED PROJECT'S HEATING AND HOT WATER SYSTEMS

AERSCREEN ANALYSIS

An analysis was performed using the AERSCREEN model to evaluate the NO₂, SO₂, PM₁₀ and PM_{2.5} annual concentrations with the operation of the proposed mixed-use development's heating and hot water systems. The exhaust stack(s) for the heating and hot water systems were modeled at a height of 443.7 feet, which is 3 feet above the top of the building, as per the proposed design.

The maximum predicted NO₂, SO₂, and PM₁₀ concentrations were added to the maximum ambient background concentration and compared with the NAAQS, while PM_{2.5} annual concentrations were compared with the PM_{2.5} *de minimis* criteria. The results of this analysis are presented in **Table J-5**.



Modeled Receptors and Stack Locations
Figure J-1

Table J-5
Maximum Modeled Pollutant Concentrations from
the Proposed Project's Heating and Hot Water Systems ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	NAAQS / De Minimis
NO ₂	Annual	1.2	40.7	41.9	100
	1-hour	42.4	114	156.4	188
SO ₂	3-Hour	0.6	64	64.6	1,300
	1-Hour	0.6	52.7	53.3	196
PM ₁₀	24-hour	3.8	48	51.8	150
PM _{2.5}	Annual	0.15	N/A	0.15	0.3 ²
	Neighborhood	0.04	N/A	0.04	0.1 ²

Notes:
 For the 1-hour NO₂ averaging period, the 3-year average of the annual 98th percentile daily maximum 1-hour average concentration was taken from DEC's *New York State Ambient Air Quality Report for 2013*.
<http://www.dec.ny.gov/chemical/8536.html>
¹ The NO₂ background data was taken from Queens College 2 monitoring station.
² PM_{2.5} *de minimis* criteria—annual (discrete receptor), 0.3 $\mu\text{g}/\text{m}^3$ and (neighborhood scale), 0.1 $\mu\text{g}/\text{m}^3$.

As shown in **Table J-5**, the maximum predicted concentration does not exceed the NAAQS standard or annual PM_{2.5} *de minimis* criteria. Therefore, there would be no potential for a significant adverse impact on air quality from the proposed project's heating and hot water systems.

AERMOD ANALYSIS

The maximum predicted 24-hour PM_{2.5} concentrations from the proposed project's heating and hot water systems were determined using the AERMOD model. The results are presented in **Table J-6**. As shown in the table, the predicted concentration does not exceed the PM_{2.5} *de minimis* criteria.

Table J-6
Maximum Modeled PM_{2.5} 24-Hour Concentrations from
the Proposed Project's Heating and Hot Water Systems ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	De Minimis
PM _{2.5}	24-hour	1.38	N/A ²	1.38	3.6 ¹

Notes:
¹ 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 $\mu\text{g}/\text{m}^3$.
² A total background concentration of 27.9 $\mu\text{g}/\text{m}^3$ was used to determine the 24-hour average *de minimis* threshold, and includes the Brooklyn Supreme Court boiler facility's modeled contribution to the ambient background concentration.

ADDITIONAL SOURCES

Potential stationary source impacts on the development site from the Brooklyn Supreme Court building's boilers were determined using the AERMOD model. The maximum estimated concentrations of NO₂, SO₂ and PM₁₀ 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. The results of the AERMOD model analysis are presented in **Table J-7**.

Table J-7
Maximum Modeled Pollutant Concentrations
on the Proposed Project ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Modeled Impact	Background	Total Concentration	NAAQS / De Minimis
NO ₂	Annual ⁽²⁾	1.0	40.7	41.7	100
	1-hour ⁽¹⁾	-	-	168.6	188
SO ₂	3-Hour	1.4	64	65.4	1,300
	1-Hour	1.9	52.7	54.6	196
PM ₁₀	24-hour	4.0	48	52	150
PM _{2.5}	24-hour	3.58	N/A	3.58	4.9 ³
	Annual	0.10	N/A	0.10	0.3 ⁴

Notes:
For the 1-hour NO₂ averaging period, the 3-year average of the annual 98th percentile daily maximum 1-hour average concentration was taken from DEC's *New York State Ambient Air Quality Report for 2013*.
<http://www.dec.ny.gov/chemical/8536.html>
¹ Reported concentration is the maximum total 98th percentile concentration at any receptor using seasonal-hourly background concentrations..
² Annual NO₂ impacts were estimated using a NO₂/NO_x ratio of 0.75
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 $\mu\text{g}/\text{m}^3$.
⁴ PM_{2.5} *de minimis* criteria—annual (discrete receptor), 0.3 $\mu\text{g}/\text{m}^3$.

As shown in the table, 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 existing sources are predicted. *

A. INTRODUCTION

The proposed mixed-use building on the development site located at 280 Cadman Plaza West in the Brooklyn Heights neighborhood of Brooklyn would not generate sufficient traffic to have the potential to cause a significant noise impact (i.e., it would not result in a doubling of noise passenger car equivalents [Noise PCEs] which would be necessary to cause a 3 dBA increase in noise levels). However, the effect of ambient noise (i.e., noise from vehicular traffic) is addressed in this attachment. The analysis determines the level of building attenuation necessary to ensure that the proposed building's interior noise levels satisfy applicable CEQR interior noise criteria.

PRINCIPAL CONCLUSIONS

Based upon the $L_{10(1)}$ values measured at the development site, the proposed building's design measures would be expected to provide sufficient attenuation to achieve the CEQR interior noise level requirements. In addition, the building mechanical system (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.

B. ACOUSTICAL 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 (a whistle compared with a French horn, for example) 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 of the lower 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 K-1**, the threshold of human hearing is defined as 0 dBA; very quiet conditions (as in a library, for example) are approximately 40 dBA; levels between 50 dBA and 70 dBA define the range of

noise levels generated by normal daily activity; levels above 70 dBA would be considered noisy, and then loud, intrusive, and deafening as the scale approaches 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 K-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. <i>Handbook of Environmental Acoustics</i> , Van Nostrand Reinhold, New York, 1994. Egan, M. David, <i>Architectural Acoustics</i> . McGraw-Hill Book Company, 1988.	

SOUND LEVEL DESCRIPTORS

Because the sound pressure level unit of dBA describes a noise level at just one moment and very 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 very little, L_{eq} will approximate L_{50} or the median level. 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 mixed-use building on the development site, the L_{10} descriptor has been selected as the noise descriptor to be used in this noise impact evaluation. The 1-hour L_{10} is the noise descriptor used in the 2014 *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* defines attenuation requirements for buildings based on exterior noise level (see **Table K-2**). Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential, school and library uses and interior noise levels of 50 dBA or lower for commercial uses and are determined based on exterior $L_{10(1)}$ noise levels.

Table K-2
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level With Proposed Action	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Attenuation ^A	(I) 28 dB(A)	(II) 31 dB(A)	(III) 33 dB(A)	(IV) 35 dB(A)	$36 + (L_{10} - 80)^B$ dB(A)
Notes: ^A The above composite window-wall attenuation values are for residential dwellings and community facility development. Commercial uses would be 5 dB(A) 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 dB(A) increments for L_{10} values greater than 80 dBA. Source: New York City Department of Environmental Protection.					

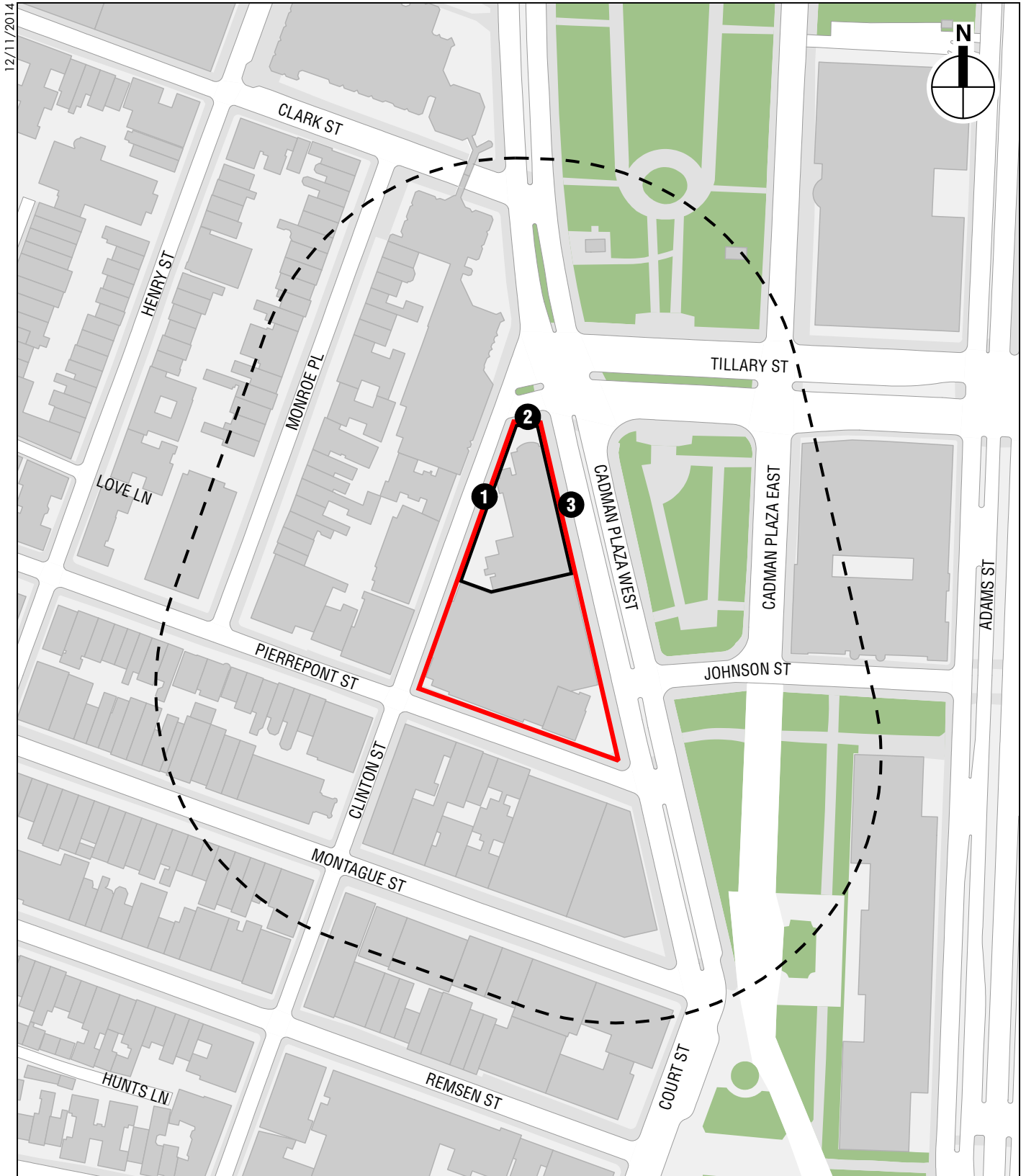
D. EXISTING NOISE LEVELS

Existing noise levels at the development site were measured at three (3) locations. Site 1 was located at Clinton Street between Cadman Plaza West and Pierrepont Street, Site 2 was located at corner of Clinton Street and Cadman Plaza West, and Site 3 was located at Cadman Plaza West between Clinton and Pierrepont Streets (see **Figure K-1**).

At all sites, existing noise levels were measured for 20-minute periods during the three weekday peak periods—AM (7:15 AM to 8:30 AM), midday (MD) (12:00 PM to 1:30 PM), and PM (4:30 PM to 6:00 PM). Measurements were taken on November 18 and 25, 2014.

EQUIPMENT USED DURING NOISE MONITORING

Measurements were performed using a Brüel & Kjær Sound Level Meters (SLMs) Type 2250 and 2260, Brüel & Kjær ½-inch microphones Type 4189, and Brüel & Kjær Sound Level Calibrators Type 4231. The SLMs have a laboratory calibration date within one year of use, as is standard practice. The Brüel & Kjær SLMs are Type 1 instruments according to ANSI Standard S1.4-1983 (R2006). The microphones were mounted on a tripod at a height of approximately 5 feet above the ground and mounted approximately 5 feet or more away from any large reflecting



- Project Area
- Development Site
- Study Area (400-foot boundary)

280 CADMAN PLAZA WEST

Noise Receptor Locations
Figure K-1

surfaces. The SLMs' calibration was field checked before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter 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 1/3 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.

The results of the existing noise level measurements are summarized in **Table K-3**.

Table K-3
Existing Noise Levels (in dBA)

Site	Measurement Location	Time	L _{eq}	L ₁	L ₁₀	L ₅₀	L ₉₀
1	Clinton Street between Cadman Plaza West and Pierrepont Street	AM	63.3	72.5	66.0	60.3	56.8
		MD	65.1	72.0	68.0	63.7	59.8
		PM	62.8	70.8	65.2	60.8	57.6
2	Corner of Clinton Street and Cadman Plaza West	AM	69.6	80.1	72.5	66.1	60.9
		MD	66.0	75.4	68.2	63.6	59.7
		PM	65.0	72.2	67.5	63.7	59.9
3	Cadman Plaza West between Clinton and Pierrepont Street	AM	70.5	79.2	73.2	68.7	62.6
		MD	66.3	72.2	69.1	65.2	61.1
		PM	69.6	76.1	71.7	68.5	66.4
Note: Measurements were conducted by AKRF Acoustics Department on November 18 and 25, 2014.							

At all receptor sites, vehicular traffic was the dominant noise source. Measured levels are moderate and reflect the level of vehicular activity on the adjacent roadways. In terms of the CEQR criteria, the existing noise levels at Site 1 are in the “marginally acceptable” category, and the existing noise levels at Sites 2 and 3 are in the “marginally unacceptable” category.

E. NOISE ATTENUATION MEASURES

As shown in **Table K-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, library and school uses and interior noise levels of 50 dBA or lower for commercial uses. The results of the building attenuation analysis are summarized in **Table K-4**.

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 design for the building includes acoustically rated windows and central air conditioning (a means of alternate ventilation). The proposed building's façades, including these elements, would be designed to provide a composite Outdoor-Indoor Transmission Class (OITC) rating¹ greater than or equal to those listed in above in **Table K-4**, along with an alternative means of ventilation in all habitable rooms of the residential units.

¹ The OITC classification is defined by ASTM International (ASTM E1332) and provides a single-number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise.

The New York City Economic Development Corporation (NYCEDC) will require, through the terms incorporated into the Contract of Sale/lease provisions or other legally binding document, that the applicant/project sponsor comply with and implement all measures outlined above into the proposed project. With the implementation of the measures outlined above, no significant adverse impacts related to noise are anticipated.

Table K-4
CEQR Building Attenuation Requirements

Associated Receptor Site	Façade Location	Elevation ³	Maximum L ₁₀ (in dBA)	Attenuation Required (in dBA) ¹
1	Clinton Street and the Southern Façade	All	68.0	N/A ²
3	Cadman Plaza West/Tillary Street	0' to 100'	73.2	31
		101' to 200'	70.2	28
		201' to top	67.2	N/A ²

Notes:

⁽¹⁾ The composite window-wall attenuation values are for residential, library and school uses. Commercial uses would require 5 dB(A) less.

⁽²⁾ “N/A” indicates that the L₁₀ value is less than 70 dB(A). The *CEQR Technical Manual* does not address noise levels this low, therefore there is no minimum attenuation guidance.

⁽³⁾ In accordance with accepted NYCDCP and NYCOER procedures, the L₁₀ noise levels were reduced by 3 dBA for elevations between 101’ to 200’ above street level and reduced by 6 dBA for elevations between 201’ above street level and the top of the building. The required attenuation value was determined based on the calculated L₁₀ noise levels at those elevations. Noise levels were not reduced from street level to 100’ above street level.

Based upon the L₁₀₍₁₎ values measured at the development site, the proposed building's design measures would be expected to provide sufficient attenuation to achieve the CEQR interior noise level requirements.

In addition, the building mechanical system (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. *

A. INTRODUCTION

The proposed actions would result in the redevelopment of the site of the Brooklyn Heights branch of the Brooklyn Public Library (BPL), located at 280 Cadman Plaza West (“the development site”) in the Brooklyn Heights neighborhood of Brooklyn. The development site is located at the northern end of the block bounded by Clinton Street to the west, Tillary Street to the north, Cadman Plaza West to the east, and Pierrepont Street to the south. As described in Attachment A, “Projection Description,” the proposed actions would result in replacement of the existing two-story building on the development site by an approximately 441-foot-tall (including mechanical bulkhead), 36-story mixed-use building containing residential, library, community facility, retail, and accessory parking uses.

With commencement of construction projected in 2016 and an approximately 40-month construction period for the proposed building, the proposed building is expected to be complete and occupied by 2019. The existing branch library use would be relocated to an interim site at ~~443~~ 95 Remsen Street in 2016, before the first stage of construction (demolition) commences. While the construction period would involve a temporary change in the site’s use from social hall to library branch, it is not expected to result in any alterations to the building’s exterior. The library use would return to the site during the last stage of construction (finishing), in late 2018 or early 2019.

This attachment summarizes the construction program for the proposed mixed-use building at the development site and assesses the potential for significant adverse impacts during construction. The city, state, and federal regulations and policies that govern construction are described, followed by the anticipated construction schedule and the types of activities likely to occur during the construction of the proposed building. The types of equipment to be used during construction are discussed, along with the expected number of workers and truck deliveries. Based on this information, an assessment is provided of the potential impacts from construction activities.

PRINCIPAL CONCLUSIONS

As described in detail below, construction activities associated with the proposed project would not result in any significant adverse impacts; additional information for key technical areas is summarized below.

TRANSPORTATION

Construction worker and truck trips associated with the proposed project would not result in any significant adverse traffic, parking, transit, or pedestrian impacts. Coordination with the New York City Department of Transportation (DOT)’s Office of Construction Mitigation and

Coordination (OCMC) would be undertaken to ensure proper implementation of Maintenance and Protection of Traffic (MPT) plans and requirements.

AIR QUALITY

Construction activities associated with the proposed project would not result in any significant adverse stationary or mobile source air quality impacts. The proposed project would implement an emissions reduction program to minimize the effects of the proposed project's construction activities on the surrounding community. The proposed project would also adhere to *New York City Air Pollution Control Code* regulations regarding construction-related dust emissions, and to *New York City Administrative Code* limitations on construction-vehicle idling time.

NOISE AND VIBRATION

Construction activities associated with the proposed project would not result in any significant adverse stationary or mobile source noise impacts. Construction of the proposed project would adhere to the requirements of the *New York City Noise Control Code*. In addition, some project-specific noise control measures would be used to reduce the amount of construction noise at nearby noise receptors resulting from construction of the proposed building. Finally, construction of the proposed project would not result in any significant adverse vibration impacts.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several city, state, and federal agencies. **Table L-1** lists the primary involved agencies and their areas of responsibility. For projects in New York City, primary construction oversight lies with the New York City Department of Buildings (DOB), which oversees compliance with the New York City Building Code. In addition, DOB enforces safety regulations to protect workers and the general public during construction. The areas of oversight include installation and operation of equipment such as cranes, sidewalk bridges, safety netting, and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the *New York City Noise Code*, reviews and approves any needed Remedial Action Plans (RAPs) and associated Construction Health and Safety Plans (CHASPs), and regulates water disposal into the sewer system as well as removal of fuel tanks 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. The Landmarks Preservation Commission (LPC) approves the historic and cultural resources analysis, the CPP, and monitoring measures established to prevent damage to historic structures, as needed.

At the state level, the New York State Department of Labor (DOL) 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, hazardous materials, and the use of poisons, much of its responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

Table L-1

Summary of Primary Agency Construction Oversight

Agency	Areas of Responsibility
New York City	
Department of Buildings	Building Code and site safety
Department of Environmental Protection	Noise Code, RAPs/CHASPs, dewatering, fuel tank removal, hazardous materials abatement
Fire Department	Compliance with Fire Code, fuel tank installation
Department of Transportation	Lane and sidewalk closures
Landmarks Preservation Commission	Archaeological and architectural protection
New York State	
Department of Labor	Asbestos Workers
Department of Environmental Conservation	Hazardous materials and fuel/chemical storage tanks
United States	
Environmental Protection Agency	Air emissions, noise, hazardous materials, poisons
Occupational Safety and Health Administration	Worker safety

C. CONSTRUCTION PHASING AND SCHEDULE

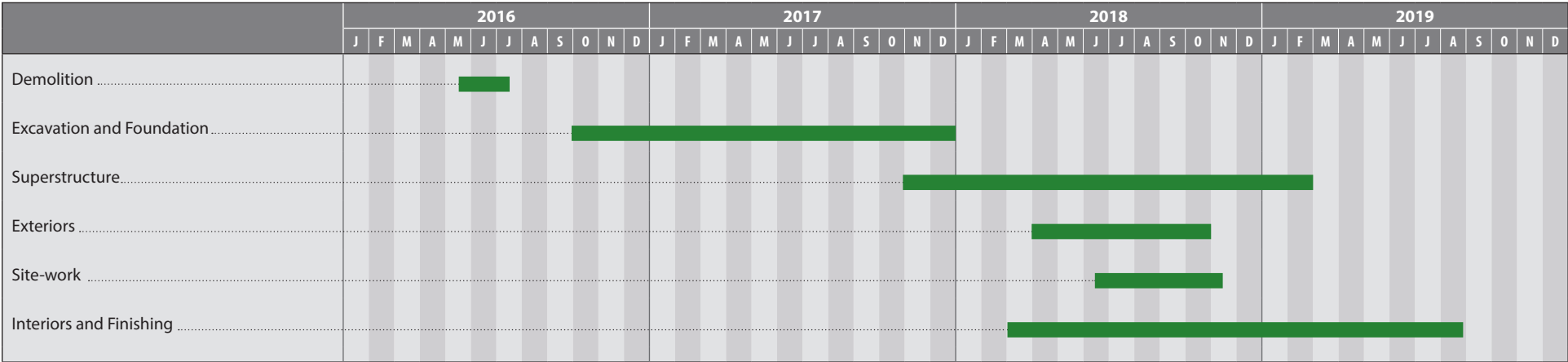
The anticipated construction schedule for the proposed mixed-use building at the development site is presented in **Table L-2** and **Figure L-1**, and reflects the sequencing of construction events as currently contemplated. Construction of the proposed building is expected to begin in April 2016 and is expected to be complete and occupied by 2019 (a 40-month construction duration). Construction of the building would consist of the following primary construction stages, which may overlap at certain times: demolition; excavation and foundation; superstructure; exteriors; site-work; and interiors and finishing. These construction stages are described in greater detail below in “General Construction Tasks.”

The existing Brooklyn Heights branch of the BPL would be relocated to the interim site at ~~443~~ 95 Remsen Street in 2016, before the first stage of construction (demolition) commences. While the construction period would involve a temporary change in the site’s use from social hall to library branch, it is not expected to result in any alterations to the building’s exterior. The library use would return to the site during the last stage of construction (finishing), in late 2018 or early 2019.

Table L-2

Anticipated Construction Schedule

Construction Task	Approximate Start Month	Approximate Finish Month	Approximate Duration (months)
Demolition ¹	May 2016	July 2016	2
Excavation and Foundation	October 2016	December 2017	15
Superstructure	November 2017	February 2019	15
Exteriors	April 2018	October 2018	7
Site-work	July 2018	November 2018	4
Interiors and Finishing	March 2018	August 2019	18
Note: ¹ It is anticipated that there would be a two-and-a-half month break between the end of demolition and the start of excavation and foundation.			
Source: Cadman Associates, LLC			



Source: Cadman Associates, LLC

D. CONSTRUCTION DESCRIPTION

This section describes construction activities for the proposed mixed-use building at the development site, including the types of equipment to be used and the estimated number of construction-related workers and truck deliveries throughout the construction period. The approach and procedures for constructing the proposed building would be typical of the methods utilized in other building construction projects throughout New York City.

GENERAL CONSTRUCTION PRACTICES

HOURS OF WORK

Construction for the proposed building would be carried out in accordance with New York City laws and regulations, which allow construction activities between 7:00AM and 6:00PM on weekdays. Construction work would occur on weekdays and typically begin at 7:00AM, with most workers arriving between 6:00AM and 7:00AM. Normally work would end at 4:00PM, but it can be expected that, in order to complete certain critical tasks (i.e., 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 6PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

Weekend work may also be required for certain construction activities such as the erection of the tower crane and to make up for weather delays or other unforeseen circumstances. Weekend work requires a permit from DOB and, in certain instances, approval of a noise mitigation plan from the DEP under the City's Noise Code. The New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007, limits construction (other than special circumstances as described below) to weekdays between the hours of 7 AM and 6 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be permitted only to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. Appropriate work permits from DOB would be obtained for any necessary work outside of normal construction hours (i.e., weekend work) and no work outside of normal construction hours could be performed until such permits are obtained. The numbers of workers and pieces of equipment in operation for weekend work would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. If it were to become necessary, the weekend workday would typically be on a Saturday.

LANE AND WALKWAY CLOSURES

As is typical with construction projects in New York City, temporary curb-lane and sidewalk closures would be required adjacent to the development site. Based on current logistics, temporary curb lane closure is expected to be required along Cadman Plaza West immediately adjacent to the development site to allow for deliveries and laydown of construction materials. MPT plans would be developed for any temporary curb-lane and sidewalk closures as required by DOT. Approval of these plans and implementation of the closures would be coordinated with DOT's OCMC.

ACCESS, DELIVERIES, AND STAGING AREAS

Access to the development site during construction would be controlled. The work areas would be fenced off and limited access points for workers and construction-related trucks would be provided. Typically, worker vehicles would not be allowed into the construction area. Workers or trucks without a need to be on the site would not be allowed entry. After work hours, the gates would be closed and locked. Based on current logistics, construction staging would primarily take place on the eastern portion of the development site. Trucks delivering materials are anticipated to enter or exit the construction site primarily via Cadman Plaza West. In addition, some of the site deliveries may also occur along Cadman Plaza West within delineated closed-off areas for concrete pour or steel delivery.

PUBLIC SAFETY

A variety of measures would be employed to ensure public safety during the construction of the proposed project. For example, sidewalk bridges would be erected along Cadman Plaza West and Clinton Street when necessary (e.g., during demolition and above-grade construction activities) to provide overhead protection for pedestrians passing by the construction site. Flaggers would be posted as necessary to control trucks entering and exiting the construction site, to provide guidance to pedestrians, and/or to alert or slow down the traffic. The installation and operation of tower cranes would follow stringent DOB requirements to ensure safe operation of the equipment. Safety nettings would be installed on the sides of the proposed project as the superstructure advances upward to prevent debris from falling to the ground. All DOB safety requirements would be followed and construction of the proposed building would be conducted with care so as to minimize the disruption to the community.

RODENT CONTROL

Construction contracts may include provisions for a rodent (i.e., mouse and rat) control program. Before the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation. During construction, the contractor would carry out a maintenance program, as necessary. Signage would be posted, and coordination would be conducted with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides would be permitted, and the contractor would be required to implement the rodent control program in a manner that is not hazardous to the general public, domestic animals, and non-target wildlife.

GENERAL CONSTRUCTION TASKS

Prior to the commencement of construction, the work area would first be prepared for construction and would involve the installation of public safety measures such as fencing, netting, and signs. The construction areas would be fenced off, typically with solid fencing to minimize interference between the persons passing by the site and the construction work. Access points to the development site would be established. Field office trailers for the construction engineers and managers, portable toilets, and dumpsters for trash would be hauled to the site and installed. During site set-up, permanent utility connections may be made, but utility connections may be made almost any time during the construction period. Site set-up activities would be completed within a few weeks.

DEMOLITION

The existing building on the development site would first be abated of asbestos and any other hazardous materials before the start of demolition. A New York City-certified asbestos investigator would inspect the building for asbestos-containing materials (ACM), and those materials must be removed by a DOL-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by DEP, DOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents and workers. Depending on the extent and type of ACMs, these agencies would be notified of the asbestos removal project and may inspect the abatement site to ensure that work is being performed in accordance with applicable 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 PCB-containing equipment (such as fluorescent light ballasts) that would be disturbed would be evaluated prior to disturbance. Unless labeling or test data indicate that the suspected PCB-containing equipment does not contain PCBs, 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.

General demolition is the next step, and first any economically salvageable materials are removed. Then the interior of the building is deconstructed to the floor plates and structural columns. Netting around the exterior of the building would be used to prevent materials from falling into public areas. Hand tools and excavators with hoe ram attachment would mainly be used in the demolition of the existing structure and bobcats and front-end loaders would be used to load the debris into dump trucks. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities. The demolition stage of construction is anticipated to take approximately two months to complete.

EXCAVATION AND FOUNDATION

First, sheet piles would be installed as necessary along the perimeter of the construction site to hold back soil around the excavation area. Next, excavators would be used for the task of excavation. The soil would be loaded onto dump trucks for transport to a licensed disposal facility or for reuse on a construction site that needs fill. As the excavation becomes deeper, a temporary ramp would be built to provide access for the dump trucks to the work site. Underpinning may be required along the northern edge of the commercial building immediately south of the development site. This stage of construction would also include the construction of the proposed project's foundation and below-grade elements. Columns and concrete walls would be built to the grade level. Concrete trucks would be used to pour the foundation and the below-grade structures. These trucks would stage on the closest curb lane on Cadman Plaza West where they would pump the concrete. Excavation and foundation activities would also involve the use of pile drivers, bulldozers, bobcats, loaders, compactors, generators, and compressors. This stage of construction is anticipated to take approximately 15 months to complete.

Below-Grade Hazardous Materials

As described in greater details below under "Hazardous Materials," to reduce the potential for public exposure to contaminants during excavation activities, construction activities would be performed in accordance with all applicable regulatory requirements. All construction subsurface soil disturbances would be performed in accordance with a DEP-approved RAP and

CHASP. The RAP and CHASP would address requirements for items such as: petroleum tank removal, dust control, and contingency measures should unforeseen petroleum tanks or soil contamination be encountered. The RAP would also include any necessary measures required to be incorporated into the new project, e.g., a vapor barrier beneath/outside of the foundations and a clean soil cap in any landscaped/unpaved areas.

Dewatering

During construction, rain and snow may collect in the excavation area, and that water would have to be removed. If dewatering is required, it would be performed in accordance with DEP sewer use requirements. These requirements require testing to ensure any potentially contaminated groundwater is treated before it can be discharged to the sewer system.

SUPERSTRUCTURE

The superstructure of the proposed building would include the building's framework (beams and columns) and floor decks. Construction of the interior structure, or core, of the building would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. The tower crane would first be brought onto the construction site during the superstructure task and would be used to lift structural components, façade elements, and other large materials. The tower crane would be on-site for both the superstructure and exterior façade stages of construction. Superstructure activities would also require the use of mobile cranes, concrete pumps, and variety of trucks. In addition, temporary construction elevators (hoists) would be used for the delivery of materials and vertical movement of workers during superstructure activities. This stage of construction is anticipated to take approximately 15 months to complete.

EXTERIORS

During this stage of construction, the exterior façades of the proposed building would be installed. The precast façades would arrive on trucks and be lifted into place for attachment by the tower crane. This stage of construction is anticipated to take approximately seven months to complete.

SITE-WORK

The site-work task would include replacement of the sidewalks and curbs at the development site. For sidewalk replacement work, a reinforcing mesh would first be laid down followed by the pouring of concrete. For curb replacement work, forms would first be placed followed by the installation of prefabricated concrete curbs. Site work would include equipment such as bobcats and loaders. This stage of construction is anticipated to take approximately four months to complete.

INTERIORS AND FINISHING

Interiors and finishing activities would include the construction of interior partitions, installation of lighting fixtures, and interior finishes (i.e., flooring, painting, etc.), and mechanical and electrical work, such as the installation of elevators, and lobby finishes. In addition, final cleanup and touchup of the development site and final building system (i.e., 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, compressors,

delivery trucks, and a variety of small hand-held tools. Interiors and finishing would be the quietest because most of the construction activities would occur within the buildings with the façades substantially complete. This stage of construction is anticipated to take approximately 18 months to complete.

NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

Based on information provided by the developer, the estimated number of daily construction workers on site would vary depending on the stage of construction and would be as follows:

- Demolition: approximately 30 workers
- Excavation and Foundation: approximately 50 to 60 workers
- Superstructure: approximately 30 to 50 workers
- Exteriors: approximately 10 to 20 workers
- Site-Work: approximately 10 workers
- Interiors and Finishing: approximately 50 workers
- Superstructure / Exteriors / Site-Work / Interiors and Finishing Activities Overlap: approximately 100 workers

The estimated trucks per day would be as follows:

- Demolition: approximately 15 trucks
- Excavation and Foundation: approximately 25 to 35 trucks
- Superstructure: approximately 10 to 35 trucks
- Exteriors: approximately 5 trucks
- Site-Work: approximately 5 trucks
- Interiors and Finishing: approximately 15 to 25 trucks
- Superstructure / Exteriors / Site-Work / Interiors and Finishing Activities Overlap: approximately 35 trucks

Table L-3 shows the estimated average daily numbers of workers and deliveries for the proposed project by calendar quarter for the duration of the construction period. The average number of workers throughout the entire construction period would be approximately 67 per day. The peak number of workers by calendar quarter would be approximately 100 per day, and would occur from the second quarter of 2018 to the fourth quarter of 2018 during superstructure, exteriors, site-work, and interiors and finishing stages of construction. Note that the estimated 100 workers per day is not the maximum number of construction workers anticipated for each individual construction stage but rather the anticipated cumulative total number of construction workers when different construction stages occur simultaneously during the peak construction period. For truck trips, the average number of trucks throughout the entire construction period would be approximately 30 per day, and the peak number of deliveries by calendar quarter would occur from the fourth quarter of 2016 to the fourth quarter of 2018, with approximately 35 trucks per day during excavation and foundation, superstructure, exteriors, site-work, and interiors and finishing stages of construction. Note that the estimated 35 trucks per day is not the maximum number of construction trucks anticipated for each individual construction stage but rather the anticipated cumulative total number of construction trucks when different construction stages occur simultaneously during the peak construction period.

Table L-3

Average Number of Daily Workers and Trucks by Year and Quarter

Year	2016				2017				2018			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	-	30	30	50	60	60	60	60	67	100	100	100
Trucks	-	15	15	35	35	35	35	35	35	35	35	35
Year	2019				Average				Peak			
Quarter	1st	2nd	3rd	4th								
Workers	83	50	50	-	67				100			
Trucks	25	25	15	-	30				35			
Source: Cadman Associates, LLC												

E. FUTURE WITHOUT THE PROPOSED PROJECT

Absent the proposed project, no new development is anticipated to occur on the development site.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Construction of the proposed project—as is the case with any construction project—may result in some temporary disruptions in the surrounding area. The following analysis describes the overall temporary effects on transportation, air quality, noise and vibration, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

TRANSPORTATION

The construction transportation analysis assesses the potential for construction activities to result in significant adverse impacts to traffic, parking conditions, and transit and pedestrian facilities. The analysis is based on the peak worker and truck trips during construction of the proposed project, 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. For the proposed project, the combined peak-construction, worker-vehicle and truck-trip generation would occur during superstructure and exteriors construction activities; the greatest construction-related parking, transit, and pedestrian demand would occur during exteriors and interiors construction activities.

The following sections evaluate the potential for the proposed project's peak construction worker and truck trips to result in significant adverse impacts to traffic, parking, transit facilities, and pedestrian facilities.

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 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 daily workforce and truck trip projections in the peak quarter were used as the basis for estimating peak-hour construction trips. It is expected that construction activities would generate the highest amount of daily traffic during superstructure, exteriors, site-work, and interiors and finishing activities, with a peak of approximately 100 workers and 30 truck deliveries per day. These estimates of construction activities are discussed further below.

Construction Worker Modal Splits and Vehicle Occupancy

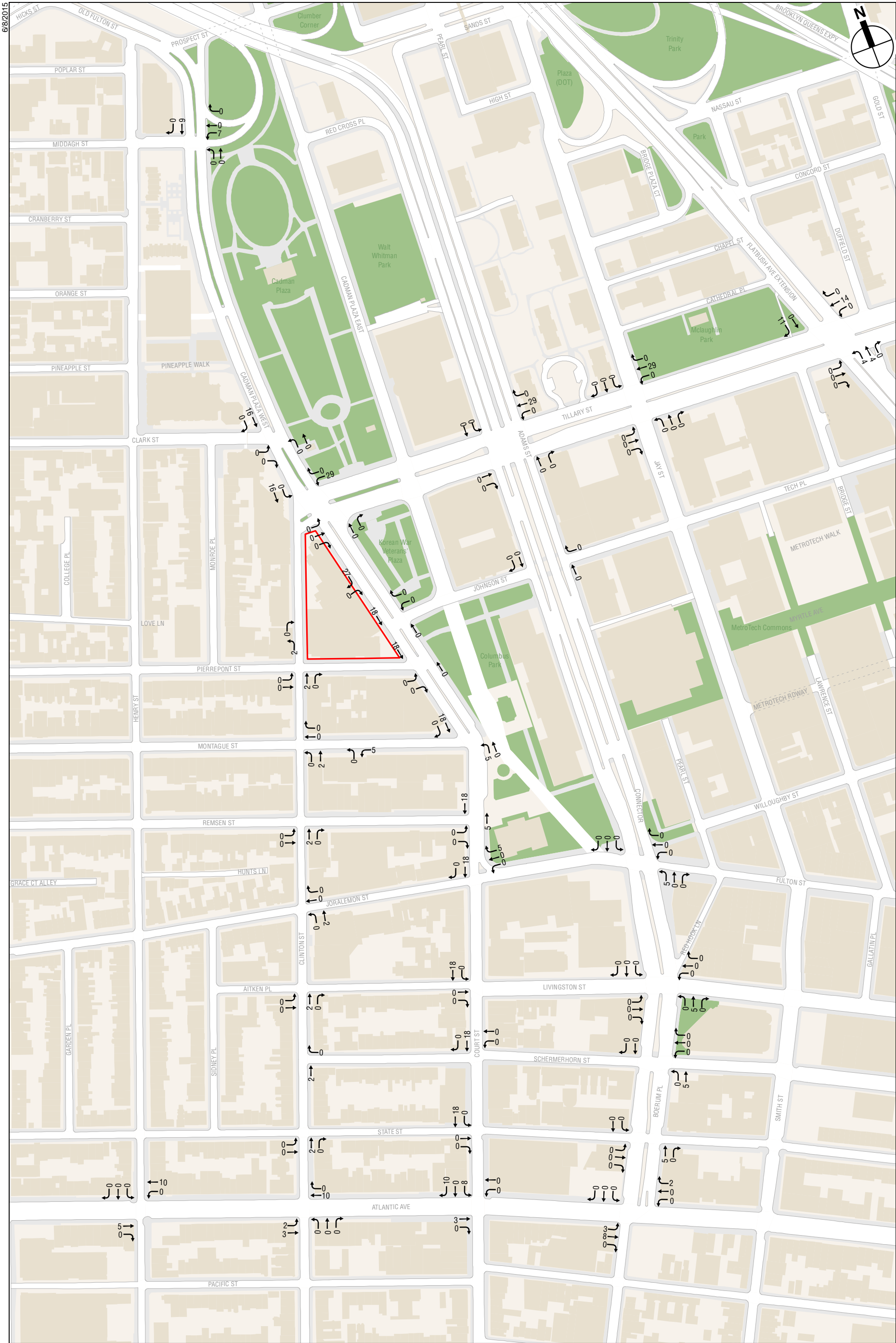
Based on the latest available U.S. Census data (2000 Census data) for workers in the construction and excavation industry, it is anticipated that 50 percent of construction workers would commute to the development site by private autos at an average occupancy of approximately 1.16 persons per vehicle.

Peak-Hour, Construction-Worker Vehicle and Truck Trips

Similar to other construction projects in New York City, most of the construction activities at the development site are expected to take place from 7:00 AM to 4:00 PM. While construction truck trips would occur throughout the day (with more trips during the early 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 2014 *CEQR Technical Manual*, the traffic analysis assumed that each truck has a PCE of 2.

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional 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 to 7:00 AM for arrival and 4:00 to 5:00 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. As shown in **Table L-4**, based on these projections, the maximum construction-related traffic increments would be approximately 70 PCEs between 6:00 AM and 7:00 AM and 34 PCEs between 3:00 PM and 4:00 PM.

Since the construction-related traffic increment of 70 PCEs between 6:00 AM and 7:00 AM exceeds the *CEQR Technical Manual's* 50 peak hour vehicle trip-ends threshold, a Level 2 screening assessment was conducted to determine the need for additional quantified traffic analyses. As shown in **Figure L-2**, the construction generated vehicle trips were distributed to various roadways near the development site. Specifically, construction worker vehicle trips were distributed to parking facilities near the development site, including to garages along Cadman Plaza West, Clinton Street, and Montague Street. Construction truck trips were assigned to the development site via New York City Department of Transportation (NYCDOT) designated truck routes. As shown in **Figure L-2**, these incremental construction vehicle trips, including both construction worker vehicles and construction trucks, would not result in more than 50 vehicle-trips at any intersection, which is the *CEQR Technical Manual's* threshold for a detailed analysis). Therefore, the traffic increase due to construction activities for the proposed project would not result in significant adverse impacts.



Project Area

280 CADMAN PLAZA WEST

Construction Generated Traffic Volumes
Weekday 6-7 AM
Figure L-2

Table L-4
Peak Construction Vehicle Trip Projections

Hour	Auto Trips			Truck Trips			Total					
	Regular Shift			Regular Shift			Vehicle Trips			PCE Trips		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6 AM - 7 AM	34	0	34	9	9	18	43	9	52	52	18	70
7 AM - 8 AM	9	0	9	4	4	8	13	4	17	17	8	25
8 AM - 9 AM	0	0	0	4	4	8	4	4	8	8	8	16
9 AM -10 AM	0	0	0	4	4	8	4	4	8	8	8	16
10 AM -11 AM	0	0	0	4	4	8	4	4	8	8	8	16
11 AM - 12 PM	0	0	0	4	4	8	4	4	8	8	8	16
12 PM - 1 PM	0	0	0	4	4	8	4	4	8	8	8	16
1 PM - 2 PM	0	0	0	2	2	4	2	2	4	4	4	8
2 PM - 3 PM	0	0	0	2	2	4	2	2	4	4	4	8
3 PM - 4 PM	0	9	9	2	2	4	2	11	13	4	13	17
4 PM - 5 PM	0	34	34	0	0	0	0	34	34	0	34	34
Daily Total	43	43	86	39	39	78	82	82	164	121	121	242
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 peak number of workers would be 63 per day, and would occur during exteriors and interiors construction activities. And based on the latest available U.S. Census data (2000 Census data) for workers in the construction and excavation industry, it is anticipated that 50 percent of construction workers would commute to the development site by private autos at an average occupancy of approximately 1.16 persons per vehicle. The anticipated construction activities are therefore projected to generate a maximum parking demand of 27 parking spaces. Construction workers are expected to park in off-street spaces or nearby parking facilities and the demand of 43 parking spaces could be fully accommodated by the off-street spaces and parking facilities available within a ¼-mile radius of the development site. Therefore, the proposed project would not result in any significant adverse parking impacts during construction.

TRANSIT

Based on the latest available 2000 U.S. Census data for workers in the construction and excavation industry, it is anticipated that approximately 50 percent of construction workers would commute to the development site via transit. The study area is well served by several mass transit lines, including eight subway lines (the A, C, N, R, 2, 3, 4, and 5) and six bus routes (B25, B26, B38, B41, B52, B103). During the peak-construction worker shift (63 average daily construction workers in the 7:00 AM to 4:00 PM shift during exteriors and interiors construction activities), approximately 50 workers would travel by transit. With 80 percent of these workers arriving or departing during the construction peak hours, the estimated number of peak-hour transit trips would be 40, well below the *CEQR Technical Manual* 200-transit-trip analysis threshold. Therefore, construction of the proposed building would not result in any significant adverse construction transit impacts, and no further analysis is required.

PEDESTRIANS

As summarized above, 100 average daily construction workers are projected in the 7:00 AM to 4:00 PM shift during peak construction. With 80 percent of these workers arriving or departing

during the construction peak hours (6:00 AM to 7:00 AM and 4:00 PM to 5:00 PM), the corresponding numbers of peak-hour pedestrian trips traversing the area's sidewalks, corners, and crosswalks would be approximately 80. This number is well below the *CEQR Technical Manual* 200-pedestrian-trip analysis threshold for detailed analysis. Therefore, construction of the proposed building would not result in any significant adverse pedestrian impacts, and no further analysis is required.

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 has diesel-powered engines and produces relatively high levels of nitrogen oxides (NO_x) and particulate matter (PM). Fugitive dust generated by construction activities also contains particulate matter. Finally, gasoline engines produce relatively high levels of carbon monoxide (CO). As a result, the primary air pollutants of concern for construction activities include nitrogen dioxide (NO₂), particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM₁₀), particulate matter with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}), and CO.

The *CEQR Technical Manual* lists several factors for consideration in determining whether a quantified on-site and/or off-site construction impact assessment for air quality is appropriate. These factors include the duration and intensity of construction activities, the location of nearby sensitive receptors, the use of emission control measures, and project generated construction-related vehicle trips.

DURATION AND INTENSITY OF CONSTRUCTION ACTIVITIES

Construction of the proposed building, as is the case with any construction project, may be disruptive to the surrounding area. While the overall construction duration for the proposed project is anticipated to be approximately 40 months, the construction duration for the most intense construction activities in terms of air pollutant emissions (demolition, excavation, and foundation stages, where the largest number of large non-road diesel engines would be employed) is anticipated to occur for only a portion of the duration—17 months.

The other stages of construction, including superstructure, exteriors, site-work, and interiors and finishing, would result in much lower air emissions since they would require few pieces of heavy duty diesel equipment. The equipment required for the latter stages of construction would generally have small engines and would be dispersed vertically throughout the building, resulting in very low concentration increments in adjacent areas. In addition, the latter stages of construction would not involve soil disturbance activities and therefore would result in significantly lower dust emissions. Further, most of the interiors and finishing activities would be shielded from nearby sensitive receptors by the proposed structure itself.

Furthermore, the large non-road diesel engines (i.e., excavators and loaders) utilized during the construction would generally move throughout the site, although a concrete pump would be located in one location during concrete pours. Based on the nature of the construction work for the proposed building, construction activities would not be considered out of the ordinary in terms of intensity; the air pollutant emission levels associated with construction of the proposed project are typical of high-rise building construction in New York City that would require demolition, excavation and foundation construction (where large equipment such as excavators and loaders would be employed).

LOCATION OF NEARBY SENSITIVE RECEPTORS

The area surrounding the development site is mixed-use—including parks, residential buildings and, different types of commercial activity—and built to varying scales. Generally, the development site is located at some distance away from residential uses, with the nearest residence at 10 Clinton Street, approximately 60 feet west of the development site. The construction areas would be fenced off, typically with solid fencing which would serve as a buffer between the emission sources and this sensitive residential receptor location. Therefore, potential concentration increments from on-site sources at this location would be reduced. In addition, St. Ann's School at 129 Pierrepont Street is located approximately 150 feet southwest of the development site and the Korean War Veterans' Plaza is located approximately 100 feet east of the development site. Such distances between the sources and the receptors would result in enhanced dispersion of pollutants; therefore, potential concentration increments from on-site construction sources at such locations would be reduced.

EMISSION CONTROL MEASURES

Construction activity in general has the potential to adversely affect air quality as a result of diesel emissions. To ensure that construction of the proposed building would result in the lowest practicable diesel particulate matter emissions, an emissions reduction program would be implemented for all construction activities, consisting of the following components:

- *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 grid power in lieu of diesel engines includes, but may not be limited to, hoists and small equipment such as welders.
- *Clean Fuel.* ULSD fuel will be used exclusively for all diesel engines throughout the construction sites.
- *Best Available Tailpipe Reduction Technologies.* Non-road diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing 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 nonroad 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.
- *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 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 also be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.

Overall, this emissions control program is expected to significantly reduce DPM emissions by a similar reduction level that would be achieved by applying the currently defined best available control technologies under New York City Local Law 77, which are required only for publically funded City projects.

OFF-SITE SOURCES

As discussed above in “Transportation,” the traffic increments during construction would be below the *CEQR Technical Manual* 50 vehicle-trip analysis threshold for a detailed traffic analysis. In addition, construction worker commuting trips and construction truck deliveries would generally occur during off-peak hours. Furthermore, when distributed over the transportation network, the construction trip increments would not concentrate at any single location. Therefore, construction of the proposed building would not result in significant adverse air quality impacts related to vehicular traffic, and further mobile-source analysis is not required.

CONCLUSIONS

Based on the analyses provided above, construction of the proposed building would not result in any significant adverse construction air quality impacts, and no further analysis is required.

NOISE

Impacts on community noise levels during construction of the proposed building could result from noise from construction equipment operation and from construction and delivery vehicles traveling to and from the construction site. Noise levels caused by construction activities vary widely and depend on the stage of construction and the location of the construction relative to sensitive receptor locations. The most significant construction noise sources are expected to be the operation of impact equipment such as hydraulic break rams as well as movements of trucks to and from the development site. Noise from construction activities and some construction equipment is regulated by the *New York City Noise Control Code* and by EPA. The *New York City Noise Control Code* requires the adoption and implementation of a noise mitigation plan for each construction site, limits construction (absent special approvals) to weekdays between the hours of 7:00 AM and 6:00 PM, and sets noise limits for certain specific pieces of construction equipment.

CONSTRUCTION NOISE IMPACT CRITERIA

The *CEQR Technical Manual* breaks construction duration into “short-term” and “long-term”, and states that assessment of construction noise is not likely to result in an impact unless it “affects a sensitive receptor over a long period of time.” Consequently, the construction noise analysis considers both the potential for construction of the proposed project to create high noise levels (the “intensity”), and whether construction noise would occur for an extended period of time (the “duration”) in evaluating potential construction noise impacts.

The *CEQR Technical Manual* states that the impact criteria for vehicular sources, using the No-Action noise level as the baseline, should be used for assessing construction impacts. As recommended in the *CEQR Technical Manual*, this study uses the following criteria to define a significant adverse noise impact from mobile and on-site construction activities:

- 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 10:00 PM and 7:00 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$.

NOISE ANALYSIS FUNDAMENTALS

Construction activities for the proposed building would be expected to 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.

Noise from the operation of construction equipment on-site at a specific receptor location near a construction site is generally calculated by computing the sum of the noise produced by all pieces of equipment operating at the construction site. For each piece of equipment, the noise level at a receptor site is a function of the following:

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

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.

LOCATION OF NEARBY SENSITIVE RECEPTORS

As discussed above in “Air Quality,” the area immediately surrounding the development site consists predominantly of residential and commercial uses. Three residential buildings (i.e., 12-story 10 Clinton Street, 6-story 24 Clinton Street, and 11-story 40 Clinton Street) are located immediately to its west, the nearest of which is approximately 60 feet from the development site.

The next nearest residential buildings are located at Monroe Place approximately 200 feet west of the development site, shielded by buildings at Clinton Street. A 7-story school building (i.e., St Ann's School) at 129 Pierrepont Street is approximately 150 feet from the development site and is mostly shielded from the development site by the 19-story 135 Pierrepont Street commercial building located immediately to south of the development site and the 11-story 40 Clinton Street residential building located west of the development site. In addition, a publicly accessible open space (i.e., Korean War Veterans Plaza) is located approximately 100 feet east of the development site, across Cadman Plaza West.

NOISE REDUCTION MEASURES

Construction of the proposed building would follow the requirements of the *New York City Noise Control Code* (*New York City Noise Code*) for construction noise control measures. Additionally, project-specific noise control measures would be used to reduce the amount of construction noise at nearby noise receptors resulting from construction of the proposed building. Specific noise control measures would be described in a noise mitigation plan required under the *New York City Noise Code*. These measures would include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the New York City Noise Code:

- Equipment that meets the sound level standards specified in Subchapter 5 of the *New York City Noise Control Code* would be used from the start of construction. **Table L-5** shows the noise levels for typical construction equipment and project-specific noise levels for those pieces of equipment committed to meeting a lower noise level for construction of the proposed project.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as pumps, compressors, and hoists (i.e., early electrification) to the extent feasible and practicable.
- Hydraulic pile drivers would be used for on-site pile driving.
- Where feasible and practical, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon New York City Local Law.
- 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 practical:

- 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. Once building foundations are completed, delivery trucks would operate behind a construction fence, where possible;
- Noise barriers would be utilized to provide shielding (i.e., the construction sites would have a 8-foot site perimeter barrier and a 16-foot cantilever site barrier along Clinton Street and adjacent to the 19-story 135 Pierrepont Street commercial building to its south);

- Control measures (e.g., a muffler, silencer, enclosure, or acoustical tent) would be used to reduce noise emissions from the tower crane used in construction of the proposed project. These measures are conservatively assumed to offer only a 10 dBA reduction in noise levels such that the tower crane noise emission is no greater than 75 dBA at a distance of 50 feet, as shown in **Table L-4**; and
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) would be used for some other dominant noise equipment to the extent feasible and practical (e.g., hydraulic break ram, concrete pump). These barriers are conservatively assumed to offer only a 10 dBA reduction in noise levels for each piece of equipment to which they are applied. The details for construction of portable noise barriers, enclosures, etc. are based upon DEP Citywide Construction Noise Mitigation.

Table L-5

Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	NYCDEP Mandated Noise Level at 50 feet ¹	Project-Specific Noise Emission Level at 50 feet ³
Backhoe/Loader	80	
Bobcat	85	
Bulldozer	85	
Compactor	80	
Compressor	80	
Concrete Pump	82	
Concrete Truck	85	
Cranes (Mobile)	85	
Cranes (Tower)	85	75
Delivery Truck	84	
Dump Truck	84	
Excavator	85	
Generator	82	
Hydraulic Break Ram	90	
Hoist	75	
Hydraulic Pile Driver	95	91 ²
Impact Wrench	85	
Jack Hammer	85	
Pump	77	
Notes: ¹ Citywide Construction Noise Mitigation, Chapter 28, Department of Environmental Protection of New York City, 2007. Sources: Table 22-1, Noise Emission Reference Levels (A-weighted decibels with RMS "slow" time constant), Chapter 22, 2014 CEQR Technical Manual. Transit Noise and Vibration Impact Assessment, Federal Transportation Administration (FTA), May 2006. ² Source: Field measurements by AKRF. ³ Path controls include portable noise barriers, enclosures, acoustical panels, and curtains, whichever feasible and practical.		

CONSTRUCTION NOISE ANALYSIS

The construction noise analysis considers the noise generated by construction-related traffic, including delivery trucks and worker vehicles, traveling to and from the development site as well as by on-site construction equipment and activity. The analysis looks first at the intensity of noise levels during construction, then assesses the potential duration of those noise levels, and finally makes a determination of the potential for impact. The most noise-sensitive construction activities would be demolition, excavation and foundation work, which would last approximately 17 months, as well as superstructure and exterior activities, which would last approximately 15 (6 months for superstructure).

Mobile Construction Noise Sources

Throughout the construction period, vehicles including construction-related trucks and vehicles driven by workers at the construction would travel near the development site. Most of these vehicles would be expected to use Cadman Plaza West where there already is heavily trafficked. As described above in “Transportation,” the amount of traffic generated by the construction of the proposed building would be low compared with the traffic volumes generated by the existing condition on Cadman Plaza West. In addition, the construction-related vehicles would be distributed amongst the different routes to and from the development site. Accordingly, the construction of the proposed building would not result in significant adverse construction noise impacts due to mobile sources, and no further analysis is required.

Intensity of Construction Noise from On-Site Sources

The nearest three residential buildings (i.e., 10, 24, and 40 Clinton Street) represent the sensitive receptor locations most likely to experience increased noise levels resulting from the operation of stationary construction equipment. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels at these buildings would be expected to be approximately in the mid to high 70s dBA during the loudest periods of demolition, excavation, and foundation work. These noise levels are typical or lower-than-typical for high-rise building construction in New York City, because of the additional noise control included in the proposed project. The maximum noise levels during these stages of construction would occur during demolition using a hydraulic break ram or pile driving using a hydraulic pile driver. These pieces of equipment would not be used continuously throughout the duration of these stages of construction, nor would they be used continuously throughout each day that they would be used. During times when these dominant pieces of equipment would not be operating, construction noise levels would be substantially lower at these adjacent residential buildings. Measured existing noise levels near these locations were in the low to mid-60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. Consequently, at these three residential buildings, the maximum noise levels predicted to be generated by on-site construction activities would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria during certain portions of the construction period. These receptors are discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

At the next nearest residential buildings at Monroe Place, located approximately 200 feet from the development site and shielded by buildings at Clinton Street, maximum $L_{eq(1)}$ noise levels would be expected to be approximately in the low to mid-60s dBA during the demolition, excavation, and foundation work. Measured existing noise levels near these locations were in the low to mid-60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. Consequently, noise generated by on-site construction activities wouldn't be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. This receptor is not discussed further.

At St Ann's School building at 129 Pierepont Street, located approximately 150 feet from the development site and mostly shielded by the 19-story 135 Pierrepont Street commercial building and the 11-story 40 Clinton Street residential building, maximum $L_{eq(1)}$ noise levels would be expected to be approximately in the low to mid-60s dBA during the demolition, excavation, and foundation work. Measured existing noise levels near these locations were in the low to mid-60s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. Consequently, noise generated by on-site construction activities wouldn't be expected to

result in exceedances of the *CEQR Technical Manual* noise impact criteria. This receptor is not discussed further.

At Korean War Veterans' Plaza open space east of the development site, maximum $L_{eq(1)}$ noise levels at would be expected to be approximately in the mid to high-70s dBA during the demolition, excavation, and foundation work. Measured existing noise levels near these locations were in the high-60s to low-70s dBA, and would be expected to remain relatively unchanged in the future without the proposed project. Construction activities would be expected to result in noise level increases of 6-8 dBA. Consequently, at locations in Korean War Veterans' Plaza noise generated by on-site construction activities would be expected to result in exceedances of the *CEQR Technical Manual* noise impact criteria. However, noise level increases of this magnitude would be readily noticeable but are typical of high-rise building construction in New York City. Nevertheless, this receptor is discussed further in the *Duration of Construction Noise from On-Site Sources* section below.

Duration of Construction Noise from On-Site Sources

The noisiest construction activities would include the demolition, excavation, and foundation work; this work is expected to last approximately 17 months. The dominant noise sources would include hydraulic break ram, pile driver, excavator, jackhammer, etc. With the construction noise control measures described above, maximum $L_{eq(1)}$ noise levels during construction would be expected to be approximately in the mid to high-70s dBA at 50 to 100 feet from the construction site boundary¹. The maximum high-70s dBA noise levels would be experienced when dominant noise equipment such as hydraulic break rams or hydraulic pile drivers are used on the project site. The use of such equipment is anticipated to last for approximately 4 to 6 months but would not occur continuously throughout the demolition and foundation stages of work. The noise levels of high-70s dBA would represent an increase of approximately 8 dBA which is typical of high-rise building construction in New York City. During times when these dominant pieces of equipment would not be operating, construction noise levels would be lower. Noise levels from construction activities typically fluctuate throughout the day and from day to day, and would not be sustained at the maximum noise levels during the entire 17 month demolition, excavation, and foundation period. As described above, at various times during the 17 months of these stages of work, maximum noise levels at the three residential buildings (i.e., 10, 24, and 40 Clinton Street) adjacent to the development site as well as at Korean War Veterans Plaza open space east of the development site would be in the mid to high 70s dBA, resulting in exceedances of *CEQR Technical Manual* noise impact criteria. However, as discussed above, these noise levels would represent an increase of 6-8 dBA which is typical of high-rise building construction in New York City. Noise level increases of this magnitude and this duration would not generally be considered a significant adverse construction noise impact.

Superstructure and exteriors work, which would be expected last up to 15 months including some overlap with site-work/interiors and finishing work, would require less heavy construction equipment as compared to the demolition, excavation and foundation work. Construction equipment with higher noise levels such as pile drivers, hydraulic break ram, excavators, etc. would not be used during the superstructure and exteriors stages of construction. In addition, fewer

¹ Based on detailed noise analyses prepared for several other large-scale construction projects with comparable noise-control measure commitments, including Seward Park (*CEQR* No. 11DME012M) and Halletts Point (*CEQR* No. 09DCP084Q)

dump trucks would travel to and from the site during the superstructure and exteriors stages of construction than during demolition, excavation, and foundation activities. In this way, the superstructure and exteriors activities would be expected to result in noise levels less than those during demolition/excavation/foundation work. During the 15 months of these stages of construction, maximum noise levels at the three residential buildings (i.e., 10, 24, and 40 Clinton Street) adjacent to the development site would be in the low 60s to mid-60s dBA, and maximum noise levels at as well as at Korean War Veterans Plaza open space east of the development site would be in the mid to high 60s dBA. Consequently, neither of these receptors would experience exceedances of *CEQR Technical Manual* noise impact criteria during the superstructure and exteriors stages of construction.

Interiors and finishing activities only, which would last approximately 6 months, would require much less heavy construction equipment, and would be better shielded from the nearby sensitive receptors by the buildings being constructed. Equipment used during interiors and finishing would mainly include a variety of small hand-held tools, along with a construction hoist. In addition, most of the construction activities would occur within the building so these stages of construction are usually the quietest. In this way, the interior and finishing activities would be expected to result in noise levels much less than those during demolition/excavation/foundation work. During the 6 months of this stage of construction, maximum noise levels at the three residential buildings (i.e., 10, 24, and 40 Clinton Street) adjacent to the development site would be in the high 50s to low 60s dBA, and maximum noise levels at as well as at Korean War Veterans' Plaza open space east of the development site would be in the low to mid 60s dBA. Consequently, neither of these receptors would experience exceedances of *CEQR Technical Manual* noise impact criteria during the interiors and finishing stage of construction.

Construction Noise Impact

As described above, noise resulting from construction of the proposed building would result in exceedances of *CEQR Technical Manual* noise impact criteria only at the three residential buildings (i.e., 10, 24 and 40 Clinton Street) adjacent to the development site as well as at Korean War Veterans Plaza open space east of the development site, and the exceedances at those receptors would occur at times only during the demolition, excavation, and foundation stages of construction, which would last approximately 17 months.

Since the exceedances of CEQR noise impact criteria would occur for a limited duration and the magnitude of the construction noise increments is typical of high-rise building construction in New York City, they would consequently not be considered significant adverse construction noise impacts.

VIBRATION

INTRODUCTION

Construction activities have the potential to result in vibration levels that may in turn result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. In general, vibratory levels at a receiver are a function of the source strength (which in turn is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the receiver building construction. Construction equipment operation causes ground vibrations 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, generally construction activities 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. For non-fragile buildings, vibration levels below 0.60 inches/second would not be expected to result in any structural or architectural damage.

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

ANALYSIS METHODOLOGY

For purposes of assessing potential structural or architectural damage, the following formula was used:

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

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment at the receiver location;
 PPV_{ref} is the reference vibration level in in/sec at 25 feet; and
 D is the distance from the equipment to the received location in feet.

For purposes of assessing potential annoyance or interference with vibration sensitive activities, the following formula was used:

$$L_v(D) = L_v(\text{ref}) - 30\log(D/25)$$

where: $L_v(D)$ is the vibration level in VdB of the equipment at the receiver location;
 $L_v(\text{ref})$ is the reference vibration level in VdB at 25 feet; and
 D is the distance from the equipment to the receiver location in feet.

Table L-6 shows vibration source levels for typical construction equipment.

Table L-6

Vibration Source Levels for Construction Equipment

Equipment	PPVref (in/sec)	Approximate L_v (ref) (VdB)
Pile Driver (Impact)*	0.644-1.518	104-112
Vibratory Roller	0.210	94
Hydraulic Break Ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
Note: * Hydraulic impact pile drivers will be utilized.		
Source: <i>Transit Noise and Vibration Impact Assessment</i> , FTA-VA-90-1003-06, May 2006.		

Construction Vibration Analysis Results

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration are the 19-story 135 Pierrepont Street commercial building located immediately to south of the development site and the three residential buildings (i.e., 12-story 10 Clinton Street, 6-story 24 Clinton Street, and 11-story 40 Clinton Street) located approximately 60 feet west of the development site. The CPP would include a monitoring component to ensure that if vibration levels approach the 0.5 inches per second peak particle velocity (PPV) criterion, corrective action would be taken to reduce vibration levels, thereby avoiding architectural damage and significant vibration impacts. Therefore, construction of the proposed project is not expected to result in significant adverse construction impacts with respect to vibration.

In terms of potential vibration levels that would be perceptible and annoying, the equipment that would have the most potential for producing levels which exceed the 65 VdB limit is the pile driver. It would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 900 feet, including all sensitive buildings mentioned above. However, the operation would only occur for limited periods of time at a particular location and therefore, while it may result in vibration that is noticeable and perhaps annoying, it would not result in any significant adverse impacts. In no case are significant adverse impacts from vibrations expected to occur.

OTHER TECHNICAL AERAS

LAND USE AND NEIGHBORHOOD CHARACTER

Construction activities would affect land use on the development site, but would not alter surrounding land uses. As is typical with construction projects, during periods of peak construction activity there would be some disruption to the nearby area. There would be construction trucks and construction workers coming to the development site. There would also be noise, sometimes intrusive, from demolition, excavation, and foundation activities 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 within the study area, particularly as most construction activities would take place within the development site or within portions of sidewalk and curb lane on Cadman Plaza West immediately adjacent to the construction site. In addition, throughout the construction period, measures would be implemented to control noise, vibration, and dust on the development site, including the erection of construction fencing and barriers. The fencing would reduce potentially undesirable views of construction site and buffer noise emitted from construction activities. Barriers would be used to protect the safety of pedestrians and to reduce noise from particularly disruptive activities where practicable.

Overall, while construction activities at the development site would be evident to the local community, the limited duration 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

Construction activities associated with the proposed building would not result in any significant adverse impacts on socioeconomic conditions. Construction activities would not block or restrict access to any facilities in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares used by customers or businesses. Construction would create direct benefits

resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction also would contribute to increased tax revenues for the City and State, including those from personal income taxes.

COMMUNITY FACILITIES

The existing Brooklyn Heights branch of the BPL would be relocated to the interim site at ~~413~~ 95 Remsen Street in 2016, before the first stage of construction (demolition) commences. While the construction period would involve a temporary change in the site's use from social hall to library branch, it is not expected to result in any alterations to the building's exterior. The library use would return to the site during the last stage of construction (finishing), in late 2018 or early 2019. No other community facilities would be directly affected by construction activities. The construction site would be surrounded by construction fencing and barriers that would limit the effects of construction on nearby facilities. Measures outlined in the MPT Plan would ensure that lane closures and sidewalk closures are kept to a minimum and that adequate pedestrian access is maintained. Construction workers would not place any burden on most community facilities and services. New York City Police Department (NYPD), and FDNY emergency services and response times would not be materially affected by construction significantly due to the geographic distribution of the police and fire facilities and their respective coverage areas.

OPEN SPACE

There are no publicly accessible open spaces within the development site, and no open space resources would be used for staging or other construction activities. The nearest open space resources are the Korean War Veterans' Plaza located across Cadman Plaza West to the east of the development site and the Cadman Plaza Park located across Cadman Plaza West and Tillary Street to the northeast of the development site. At limited times, activities such as demolition, excavation, and foundation construction may generate noise that could impair the enjoyment of nearby open space users, but such noise effects would be temporary. As discussed above in "Noise," most of the construction-related vehicles would be expected to use Cadman Plaza West where there already is heavily trafficked. The amount of traffic generated by the construction of the proposed building would be low compared with the traffic volumes generated by the existing condition on Cadman Plaza West. Accordingly, the construction of the proposed building would not result in substantially increased noise at these open space locations. Construction of the proposed building would not limit access to any open space resources in the vicinity of the development site. Therefore, the proposed building would not result in significant adverse impacts on open space during construction.

HISTORIC AND CULTURAL RESOURCES

A detailed assessment of potential impacts on historic and cultural resources is described in Attachment G, "Historic and Cultural Resources." The analysis in Attachment G concludes that the proposed mixed-use building on the development site would not result in any significant adverse impacts to historic and cultural resources during construction. To avoid inadvertent demolition and/or construction-related damage to St. Ann's School building at 129 Pierrepont Street, this building would be included in a CPP for historic structures that would be prepared in coordination with LPC and implemented in consultation with a licensed professional engineer. The CPP would be prepared as set forth in Section 523 of the *CEQR Technical Manual* and in compliance with the procedures included in the DOB's TPPN #10/88 and LPC's *Guidelines for Construction Adjacent*

to a Historic Landmark and Protection Programs for Landmark Buildings. The CPP would be prepared and implemented prior to demolition and construction activities on the development site and project-related demolition and construction activities would be monitored as specified in the CPP.

HAZARDOUS MATERIALS

The proposed development would entail demolition of the existing structure and excavation (as the new building's foundations would extend below the depth of and beyond the horizontal extent of the existing two-level basement). A detailed assessment of the potential risks related to the construction of the proposed project with respect to any hazardous materials is described in Attachment H, "Hazardous Materials." The analysis in Attachment H concludes that the construction of the proposed project would not result in any significant adverse impacts related to hazardous materials. *

Attachment M:	Analysis of the Proposed Off-Site Affordable Housing
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A. INTRODUCTION

Cadman Associates LLC, the developer, intends to utilize the inclusionary housing bonus available in C6-4 zoning districts for the proposed project. The Inclusionary Housing Program requires a percentage of the dwelling units (DUs) within a building to be set aside, or new or rehabilitated affordable housing units to be provided off-site within the same community district or within one-half mile of the bonused development. The developer proposes to construct 115 affordable DUs at two locations within the Clinton Hill neighborhood of Brooklyn within the same community district as the 280 Cadman Plaza West mixed-use development site (Community District 2, or CD 2).

This attachment considers the potential environmental effects of this proposed off-site affordable housing. It considers the likely environmental effects of development at the affordable housing sites, as well as the potential for cumulative environmental effects with those of the proposed mixed-use development at 280 Cadman Plaza West.

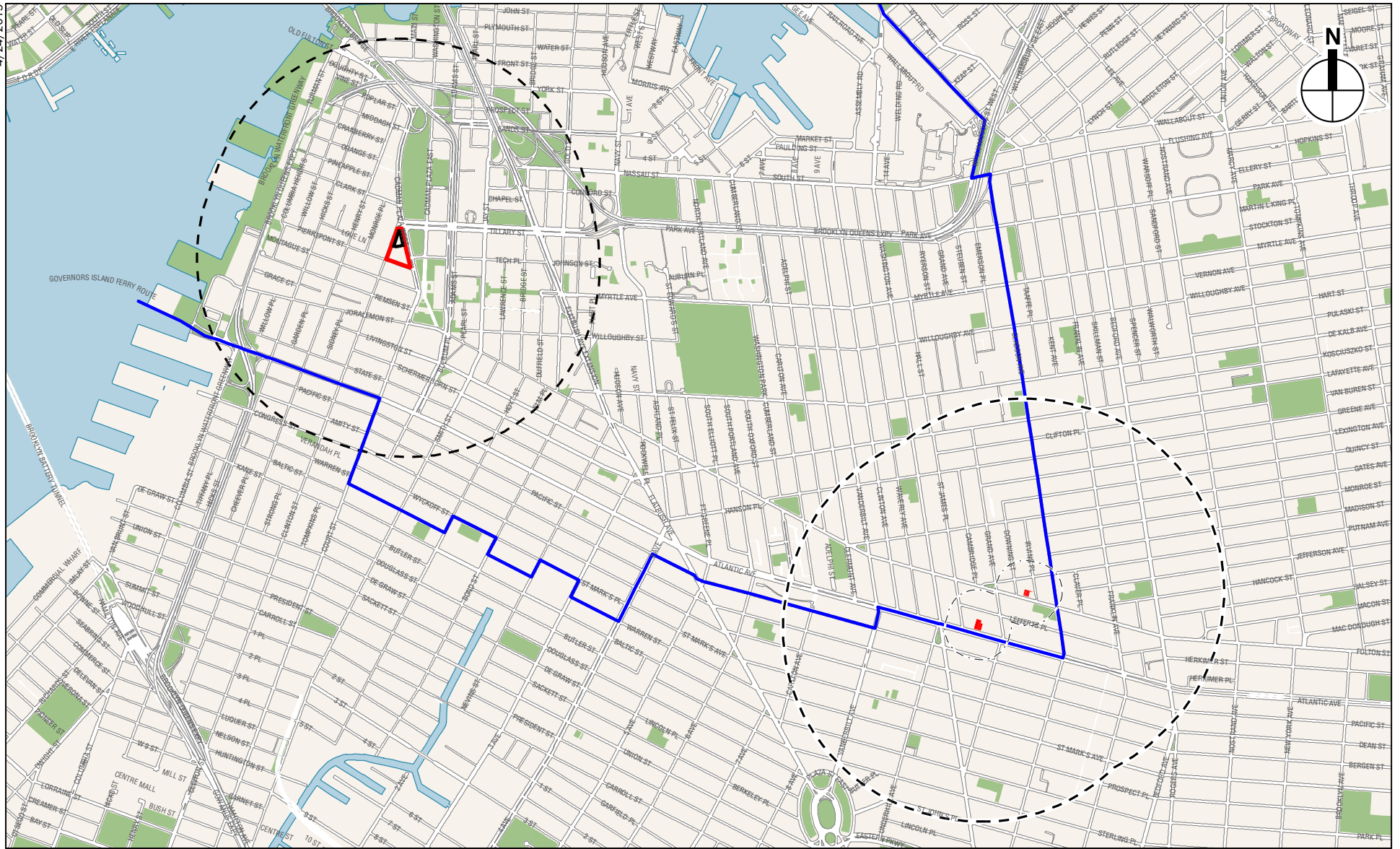
PRINCIPAL CONCLUSIONS

The analysis finds that the proposed development of off-site housing associated with the proposed project would not result in any significant adverse environmental impacts. The analysis also finds that there is no potential for cumulative significant adverse impacts between the proposed mixed-use development at 280 Cadman Plaza West and the proposed off-site housing associated with the proposed project.

B. ASSESSMENT OF THE POTENTIAL EFFECTS OF THE PROPOSED OFF-SITE AFFORDABLE HOUSING

The proposed off-site affordable housing would be located within two newly-constructed residential buildings at the following locations: 911-917 Atlantic Avenue (Block 2018, Lots 62-64) and 1041-1047 Fulton Street (Block 1992, Lots 5-9) (see **Figure M-1**).

- The 911-917 Atlantic Avenue site currently is occupied by five structures: a 4-story multi-family residential building with ground-floor retail (Lot 63); a 3-story building housing an electrical supply company, with two rear yard structures on the lot (Lot 64); and a 2-story building containing industrial and commercial uses (Lot 62). In the future with the proposed actions this site would be redeveloped with a 9-story, 65,817-gross-square-foot (gsf) building containing 76 affordable DUs.
- The 1041-1047 Fulton Street site currently is vacant. This site would be developed with an 8-story, 34,937-gsf building containing 39 affordable DUs and 1,125 gsf of ground-floor retail use.



- 280 Cadman Plaza West Project Area
- 280 Cadman Plaza West Development Site
- 280 Cadman Plaza West Study Area Boundary Half-Mile Perimeter

- Off-Site Housing Sites
- Off-Site Housing Site 400-Foot Perimeter
- Off-Site Housing Site Half-Mile Perimeter

Community District 2 Boundary

0 2,000 FEET

Of the proposed 115 off-site affordable housing units, 114 units would be available to the following range of household incomes: 20 percent of the units (23 units) would be targeted for incomes that are 60 percent of Area Median Income (AMI); 54 percent (61 units) would be targeted for incomes of 80 percent AMI; 5 percent (6 units) would be targeted for incomes of 100 percent AMI; and 21 percent (24 units) would be targeted for incomes of 165 percent AMI or below. In addition, one unit would be made available to the buildings' superintendent free of rent. The 84 units that would be targeted for incomes that are 60 percent and 80 percent of AMI are necessary in order to provide the bonus floor area at the development site and to maximize the development floor area at these off-site locations, which are within an Inclusionary Housing designated area. The balance of the affordable housing at these locations would be committed to by the developer as part of the sales contract with the City of New York.

The proposed off-site affordable housing is expected to have a total construction period of less than 24 months. As part of the Inclusionary Housing Program the proposed off-site affordable housing would be required to be complete before the proposed mixed-use building at 280 Cadman Plaza West is occupied. Therefore construction of the off-site housing would commence in 2017 and would be complete by 2019.

LAND USE, ZONING AND PUBLIC POLICY

The proposed off-site affordable housing would not result in significant adverse impacts to land use, zoning and public policy. The proposed off-site housing locations at 911-117 Atlantic Avenue and 1041-1047 Fulton Street are located in R7A zoning districts (with a small, rear portion of Lot 64 [911-917 Atlantic Avenue] located within an R6B zoning district), which allow for the proposed residential use. The proposed off-site affordable housing development would be constructed in accordance with the existing zoning of the site, and the proposed residential and commercial uses would be compatible with existing land uses and zoning in the surrounding area (see **Figures M-2** and **M-3**). The proposed off-site housing would not adversely affect any regulations or policies governing land use. Neither of the proposed off-site housing locations is within the City's Coastal Zone Boundary, and therefore an analysis of the development's consistency with the City's Waterfront Revitalization Program is not warranted. The provision of affordable housing would be consistent with the City's recently-released *Housing New York* plan, which sets a goal of building or preserving 200,000 units of high-quality affordable housing in all five boroughs over the next 10 years.

Given that the land use study areas for the mixed-use development at 280 Cadman Plaza West and the off-site affordable housing do not overlap, there is no potential for significant adverse cumulative impacts from these two elements of the proposed project.

SOCIOECONOMIC CONDITIONS

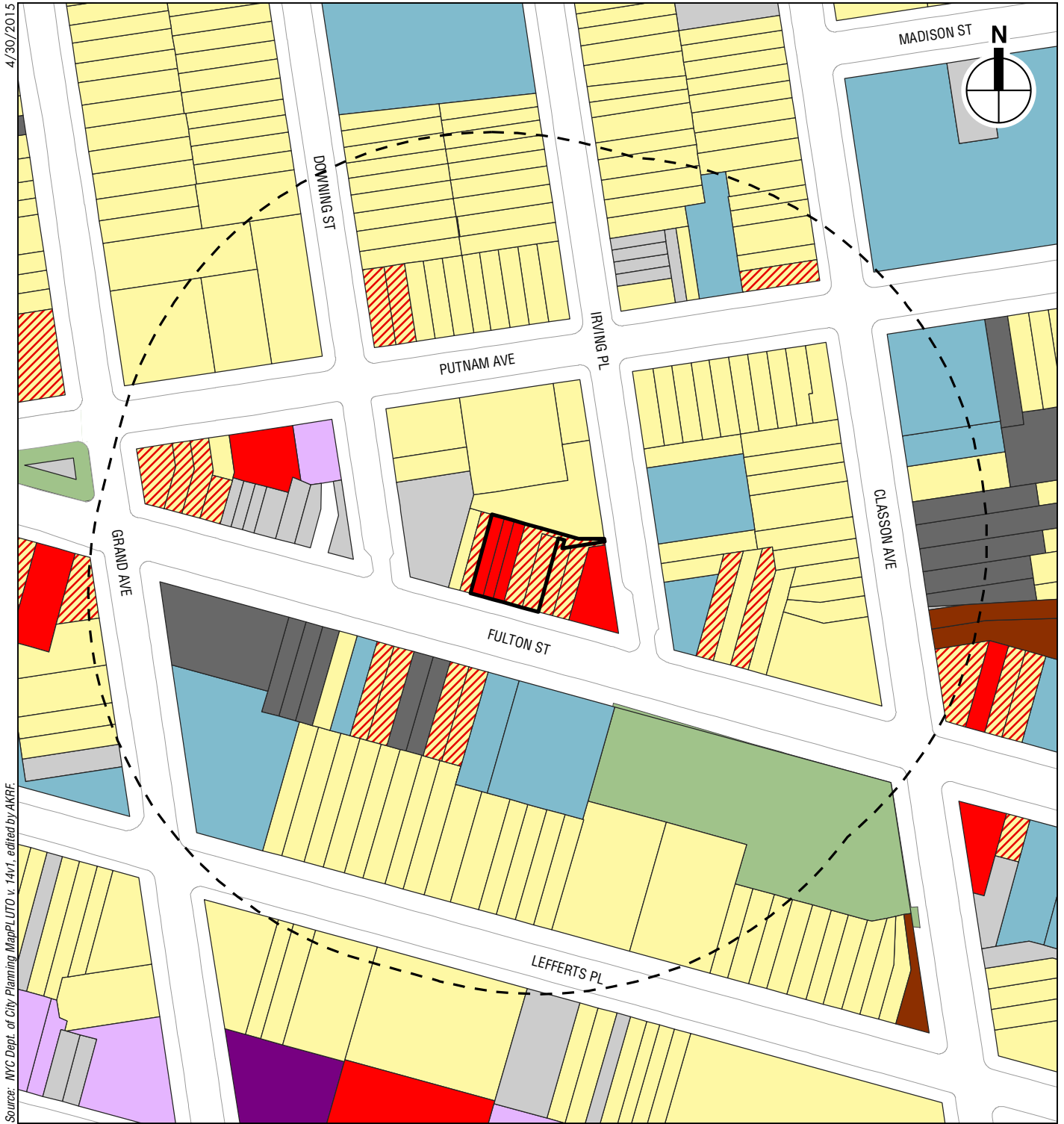
The proposed off-site housing would not result in significant adverse impacts to socioeconomic conditions. The proposed development would not directly displace 500 or more residents or 100 or more employees, which are the thresholds for analysis of direct residential and business displacement, respectively. The site located at 911-917 Atlantic Avenue is currently occupied by five structures containing: an approximately 11,120-sf wholesale electrical supply store; 3,500 sf of other industrial uses; 1,000 sf of office space; and 3 residential units.¹ Based on standard

¹ These estimates are based on the Department of City Planning's MapPLUTO 14v2 dataset.



- | | |
|-----------------------------------|------------------------------------|
| 911-917 Atlantic Avenue | Public Facilities and Institutions |
| Study Area (400-foot boundary) | Residential |
| Commercial and Office Buildings | Residential with Commercial Below |
| Industrial and Manufacturing | Transportation and Utility |
| Open Space and Outdoor Recreation | Vacant Land |
| Parking Facilities | Under Construction |

0 200 FEET



employment multipliers and the average household size for CD 2,² these uses represent approximately 19 workers and 6 residents, well below the thresholds described above. The 1041-1047 Fulton Street site is currently vacant.

With respect to potential indirect effects, the proposed off-site housing would not generate more than 200 residential units or commercial development of more than 200,000 square feet, which are the thresholds for analysis of indirect residential and business displacements, respectively. Therefore, the proposed off-site affordable housing development would not result in significant adverse impacts due to changes in socioeconomic conditions, and no further assessment is warranted.

Given that the socioeconomic conditions study areas for the mixed-use development at 280 Cadman Plaza West and the off-site housing do not overlap (see **Figure M-1**), there is no potential for significant adverse cumulative socioeconomic impacts.

COMMUNITY FACILITIES AND SERVICES

The proposed off-site affordable housing would not result in significant adverse impacts on community facilities and services. Redevelopment of the affordable housing sites would not directly displace any existing community facilities (police and fire services, public schools, libraries, and publicly-funded child care facilities). The proposed off-site housing also would not result in the introduction of a sizeable new neighborhood, and thus would not meet the threshold for analysis of potential impacts to police and fire services or health care facilities.

The threshold for an analysis of potential indirect impacts to libraries in Brooklyn is the creation of at least 734 residential units. Therefore, the proposed project—including both the mixed-use development at 280 Cadman Plaza West (308 DUs) and the off-site housing (115 DUs)—would not warrant an analysis of potential impacts to libraries, and no such impacts would be expected.³

The threshold for an analysis of publicly-funded child care facilities is 110 low or low/moderate income residential units. As defined in the 2014 *CEQR Technical Manual*, only housing units targeted for incomes of 80 percent of AMI or below should be counted as low/moderate income residential units. Of these proposed 115 affordable units, 84 would be made available to households with incomes at or below 80 percent AMI. Therefore, the proposed project does not warrant an analysis of potential impacts to publicly-funded child care facilities, and no such impacts would be expected.

While the 280 Cadman Plaza West mixed-use development site is located in Sub-district 2 of Community School District (CSD) 13, the proposed off-site housing—both at 911-917 Atlantic Avenue and at 1041-1047 Fulton Street—would be located in Sub-district 3 of CSD 13. Therefore, the effects of the proposed mixed-use development and the proposed affordable housing development would not affect the same public school sub-district. Given that there is no potential for cumulative effects from the two elements of the proposed project, the proposed off-

² These multipliers are 1,000 sf per worker for industrial uses and 250 sf per worker for commercial uses; the average household size for CD 2 is 2.01 persons per household.

³ The Co-Applicants have been advised by the New York City Department of City Planning (NYCDP) that the proposed project is not subject to the City's Fair Share Criteria. Nevertheless, a Fair Share assessment has been provided as part of the project's ULURP application. That analysis evaluates the proposed project as both an increase in the amount of usable branch library space at the BPL Facility, and as a decrease in the gross size of the BPL Facility.

site housing must be considered separately in terms of potential impacts on public schools. The threshold for an analysis of public schools in Brooklyn is the development of at least 121 residential units (for an analysis of elementary/middle schools) and 1,068 residential units (for an analysis of high schools). Therefore, the proposed 115 off-site affordable units would not exceed the *CEQR Technical Manual* threshold warranting an analysis of potential effects on public schools.

OPEN SPACE

The proposed off-site affordable housing, to be located at 911-917 Atlantic Avenue and 1041-1047 Fulton Street, would not directly displace or affect any existing open space resources, as neither of the sites contain publicly accessible open space. However, the new residents introduced by the proposed off-site housing would increase demand for open spaces in the surrounding areas. According to the 2014 *CEQR Technical Manual*, a preliminary assessment of indirect effects on open space should be conducted when a project would introduce 200 or more residents or 500 or more workers to an area. The proposed off-site housing would not introduce 500 or more workers; however, the proposed off-site housing would introduce more than 200 residents to the area, warranting an assessment of indirect impacts on open space due to residential demand. The proposed off-site housing would introduce approximately 247 new residents to the study area, based on the average household size of 2.01 persons per household for CD 2.⁴

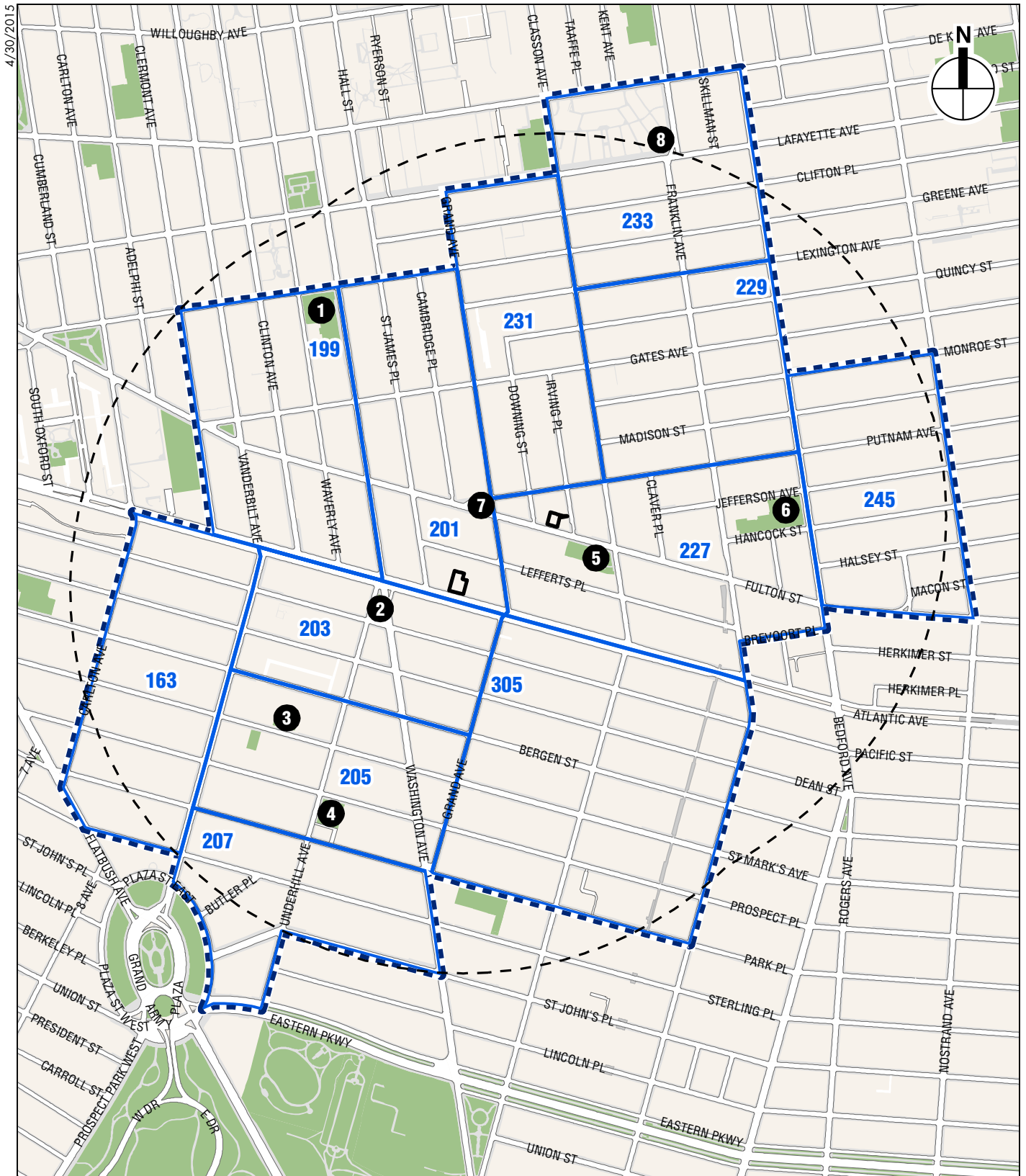
According to the *CEQR Technical Manual*, a preliminary open space assessment involves calculating total population and open space acreage in a study area, and comparing the existing ratio of total acres of open space per 1,000 residents with the anticipated open space ratio in the future with the proposed project.

The study area for an analysis of potential residential impacts on open space includes all census tracts that are located at least 50 percent within a ½-mile radius of the proposed off-site housing sites. As shown in **Figure M-4** and summarized in **Table M-1**, the study area for the proposed off-site housing is comprised of 12 Census Tracts with a total population of 42,247.

Table M-1
Open Space Study Area Census Tracts

Census Tract Number	Population
163	2,991
199	2,929
201	3,421
203	1,697
205	2,469
207	4,310
227	3,454
229	3,395
231	3,025
233	5,061
245	3,946
305	5,549
Total	42,247
Notes: See Figure M-4 census tract locations.	
Sources: US Census, 2010	

⁴ http://www.nyc.gov/html/dcp/pdf/neigh_info/socio_demo/bk02_socio_demo.pdf



- Affordable Housing Site
- Affordable Housing Site (Half-mile perimeter)
- Residential Study Area Boundary
- Census Tracts
- Open Space Resources

280 CADMAN PLAZA WEST

0 800 FEET

Off-Site Housing Sites
Open Space Study Area
Figure M-4

Attachment M: Analysis of the Off-Site Affordable Housing Development

Within the open space study area, there are eight publicly accessible open space resources, as shown on **Figure M-4** and summarized in **Table M-2**. Most resources are operated by the New York City Department of Parks and Recreation (DPR); however, P.S. 9 Playground is operated by DOE and Putnam Plaza is operated by New York City Department of Transportation (NYCDOT). For the purposes of a conservative analysis, community gardens with limited hours, destination open space resources just outside of the study area, and recreational resources that are part of school grounds that are not generally open to the public have not been included. The omission of these resources is conservative for this analysis because it understates the availability of open space resources.

Table M-2
Open Space Resources

Map No. ¹	Name	Size (Acres)
1	Greene Playground	1.26
2	Lowry Triangle	0.11
3	P.S. 9 Playground	0.97
4	Underhill Playground	0.59
5	Crispus Attucks Playground	0.93
6	John Hancock Playground	1.55
7	Putnam Plaza	0.24
8	Lafayette Gardens Playground	0.70
Total		6.35
Note: ¹ See Figure M-4.		
Sources: New York City Department of Parks and Recreation; ArcGIS		

Table M-3 compares the existing study area open space ratio with the corresponding ratio in the future with the proposed off-site housing. With the additional 247 residents that would be introduced to the study area by the proposed off-site housing, the open space ratio would decrease from 0.150 to 0.149 acres per 1,000 residents. According to the *CEQR Technical Manual*, if a potential decrease in the open space ratio exceeds 5 percent, it is generally considered to be a substantial change warranting a detailed analysis. However, in areas that are extremely lacking in open space, a reduction as small as 1 percent may be considered significant, depending on the area of the City.

Table M-3
Preliminary Assessment:
Adequacy of Public Open Space Resources in the Study Area

	Existing Conditions	With-Action Condition
Study Area Population¹		
Residents	42,247	42,494
Open Space Acreage²		
Total	6.35	6.35
Open Space Ratios (acres per 1,000 residents)		
Total/Residents	0.150	0.149
Percent Change, Existing-to-With Action		-0.667%
Notes: Ratios in acres per 1,000 people. ¹ See Table M-3 ² See Table M-4 and Figure M-4		

As shown in Table M-3, under the preliminary assessment, the open space ratio in the future with the proposed off-site housing would decrease by 0.667 percent and would not exceed a 5 percent or even a 1 percent reduction. Therefore, a detailed open space assessment is not warranted, and the proposed off-site housing would not result in any significant adverse impacts on open space resources.

Overall, the new residents introduced by the proposed off-site housing would not overburden existing open space resources in the study area.

Given that the open space study areas for the mixed-use development at 280 Cadman Plaza West and the off-site housing do not overlap (see **Figure M-1**, which indicates ½-mile perimeter around each that are roughly equivalent to the ½-mile residential study areas for open space), there is no potential for significant adverse cumulative impacts on open space resources.

SHADOWS

The development at 911-917 Atlantic Avenue is anticipated to be a maximum of 92 feet high including rooftop mechanical space, and the development at 1041-1047 Fulton Street is anticipated to be 87 feet high including rooftop mechanical space. The 2014 *CEQR Technical Manual* requires a shadows assessment for any new structures over 50 feet high, and therefore an assessment was performed for each of the two off-site locations. A shadows assessment examines whether proposed structures would cast new shadows on any nearby publicly-accessible sunlight-sensitive resources of concern, including public open space, sunlight-dependent features of historic architectural resources, and natural resources that depend on sunlight. The assessments were prepared in accordance with CEQR procedures and follow the guidelines of the *CEQR Technical Manual*.

911-917 ATLANTIC AVENUE

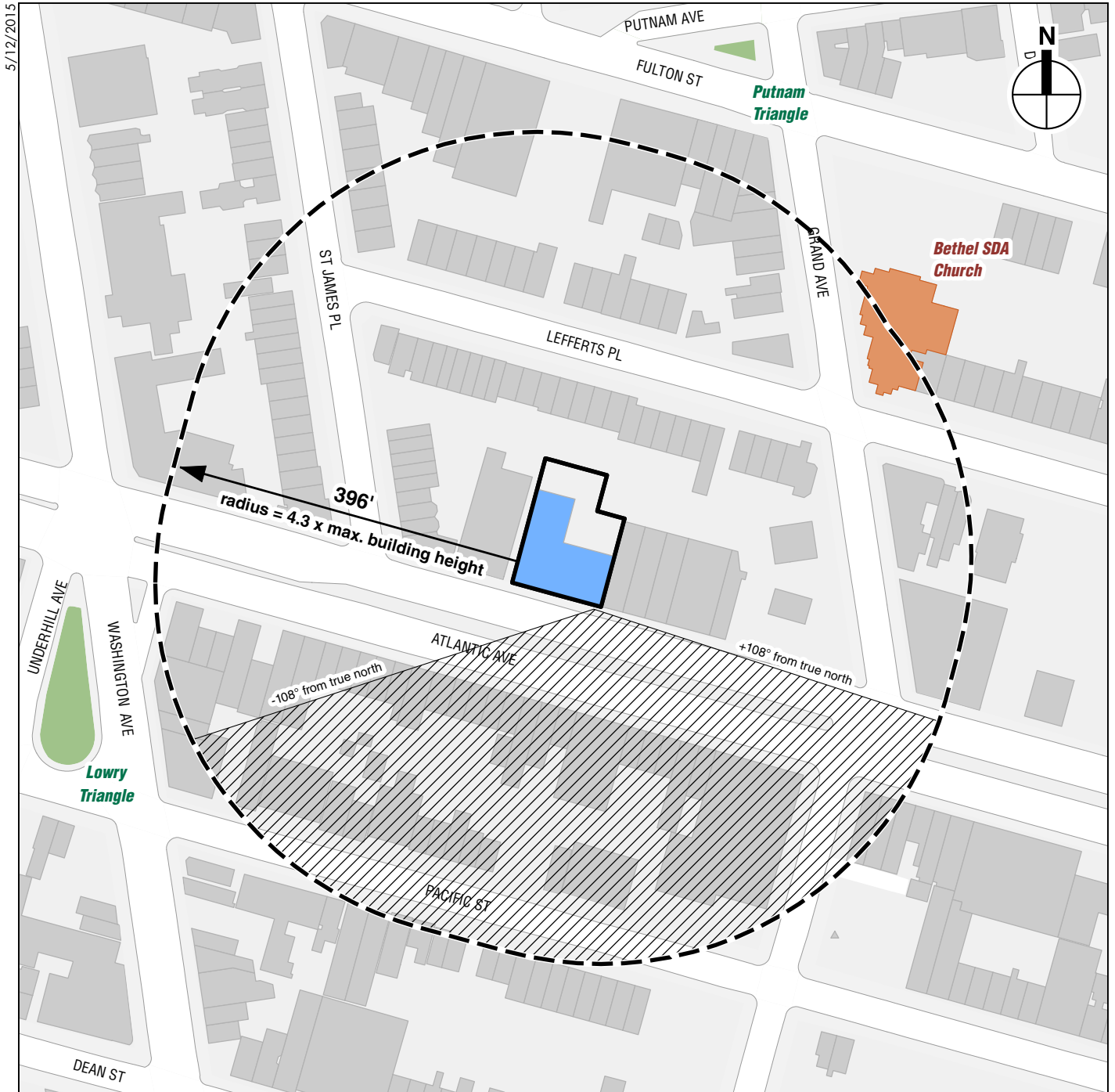
A base map was developed using Geographic Information Systems (GIS)⁵ showing the location of the proposed project and the surrounding street layout (see **Figure M-5**). In coordination with the open space, historic and cultural resources, and natural resources assessments presented in other sections of this attachment, potential sunlight-sensitive resources were identified and shown on the map.

For the Tier 1 assessment, the longest shadow that the proposed structure could cast is calculated, and, using this length as the radius, a perimeter is drawn around the project site. Anything outside this perimeter representing the longest possible shadow could never be affected by project generated shadow, while anything inside the perimeter needs additional assessment.

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, at the start of the analysis day at 8:51 AM, and is equal to 4.3 times the height of the structure.

Therefore, at a maximum height of 92 feet above curb level, including rooftop mechanical structures, the proposed off-site housing at 911-917 Atlantic Avenue could cast a shadow up to 396 feet in length (92 x 4.3). Using this length as the radius, a perimeter was drawn around the project site (see **Figure M-5**). One sunlight-sensitive resource of concern is located partially

⁵ Software: Esri ArcGIS 10.2; Data: New York City Department of Information Technology and Telecommunications (DoITT) and other City agencies, and AKRF site visits.



- Project Site
- Proposed Building
- Tier 1: Longest shadow study area boundary
- Tier 2: Area south of site that could never be shaded by proposed building
- Publicly-Accessible Open Space
- Historic Resources with Sunlight-Sensitive Features

0 400 FEET

Tier 1 and Tier 2 Assessments
911-917 Atlantic Avenue
Figure M-5

within the longest shadow study area: the Bethel Seventh Day Adventist (SDA) Church building at 457 Grand Avenue. This building is within the Clinton Hill South Historic District, which is listed on the State and National Registers, and has stained-glass windows, which are sensitive to sunlight and shadows. Therefore the next tier of assessment was conducted.

The Tier 2 assessment accounts for the fact that, 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 M-5** illustrates this triangular area south of the 911-917 Atlantic Avenue site. The complementing area to the north within the longest shadow study area represents the remaining area that could potentially experience new project generated shadow. The Bethel SDA Church is located partially in the remaining longest shadow study area. Therefore the next tier of assessment was conducted.

The direction and length of shadows vary throughout the course of the day and also differ depending on the season. In order to determine whether project-generated shadow could fall on a sunlight-sensitive resource, three-dimensional (3D) computer modeling software⁶ is used in the Tier 3 assessment to calculate and display the proposed project's shadows on individual representative days of the year. 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 a reasonable worst-case three-dimensional representation of the proposed building at 911-917 Atlantic Avenue.

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, generally the day halfway between the summer solstice and the equinoxes, i.e. May 6 or August 6, which have approximately the same shadow patterns.

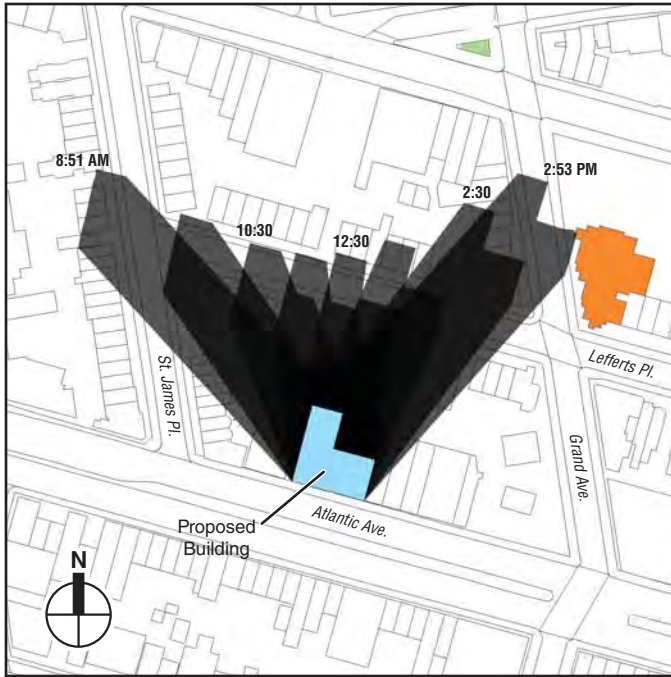
The shadow assessment considers shadows occurring between one and a half hours after sunrise and one and a half hours before sunset. At times earlier or later than this timeframe window of analysis, the sun is down near the horizon and the sun's rays reach the Earth at very tangential angles, diminishing the amount of solar energy and 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 outside the timeframe window of analysis are not considered significant under *CEQR*, and their assessment is not required.

Figure M-6 illustrates the range of shadows that would occur, in the absence of intervening buildings, from the proposed building at 911-917 Atlantic Avenue on the four representative days for analysis. As they move east and clockwise over the landscape, the shadows are shown occurring approximately every 60 minutes 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).

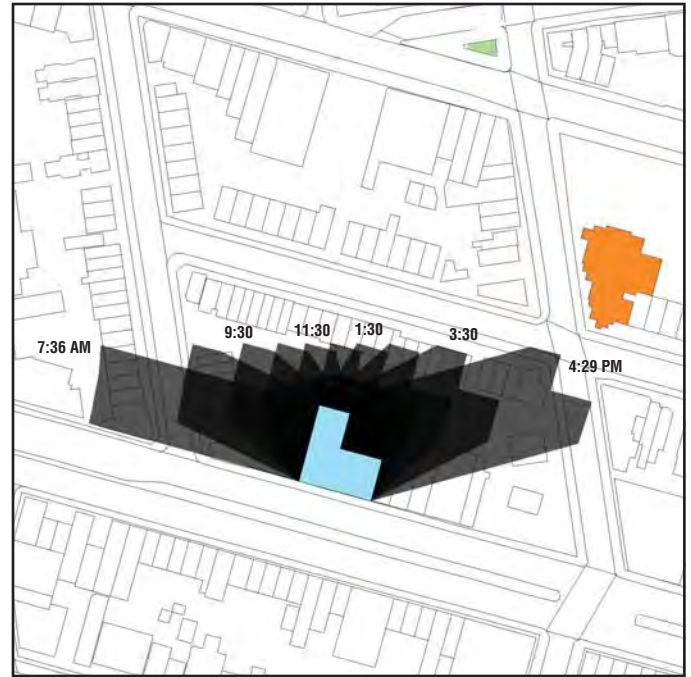
The Tier 3 assessment showed that the proposed building's shadow would not be long enough to reach the Bethel SDA Church on any of the four analysis days. Therefore, no shadow impacts would occur and no further analysis is necessary.

⁶ MicroStation V8i (SELECTSeries 3)

5.12.15



December 21



March 21/Sept. 21



May 6/August 6



June 21

0 200 500 FEET

- Proposed Addition*
- Publicly-Accessible Open Space*
- Historic Resource with Sun-Sensitive Features*
- Shadow*

Notes:
 1. Daylight Saving Time not used per CEQR guidelines.
 2. Shadows are shown occurring approximately every hour 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.

1041-1047 FULTON STREET

A base map was developed using GIS showing the location of the proposed building at 1041-1047 Fulton Street and the surrounding street layout (see **Figure M-7**). In coordination with the open space, historic and cultural resources, and natural resources assessments presented in other sections of this attachment, potential sunlight-sensitive resources were identified and shown on the map.

A Tier 1 assessment was conducted following CEQR guidelines. At a maximum height of 87 feet above curb level, including rooftop mechanical structures, the proposed building at 1041-1047 Fulton Street could cast a shadow up to 374 feet in length (87×4.3). Using this length as the radius, a perimeter was drawn around the project site (see **Figure M-7**). Two sunlight-sensitive resources of concern are located partially within the longest shadow study area: the Bethel Seventh Day Adventist (SDA) Church building at 457 Grand Avenue, and Crispus Attucks Playground. Therefore the next tier of assessment was conducted.

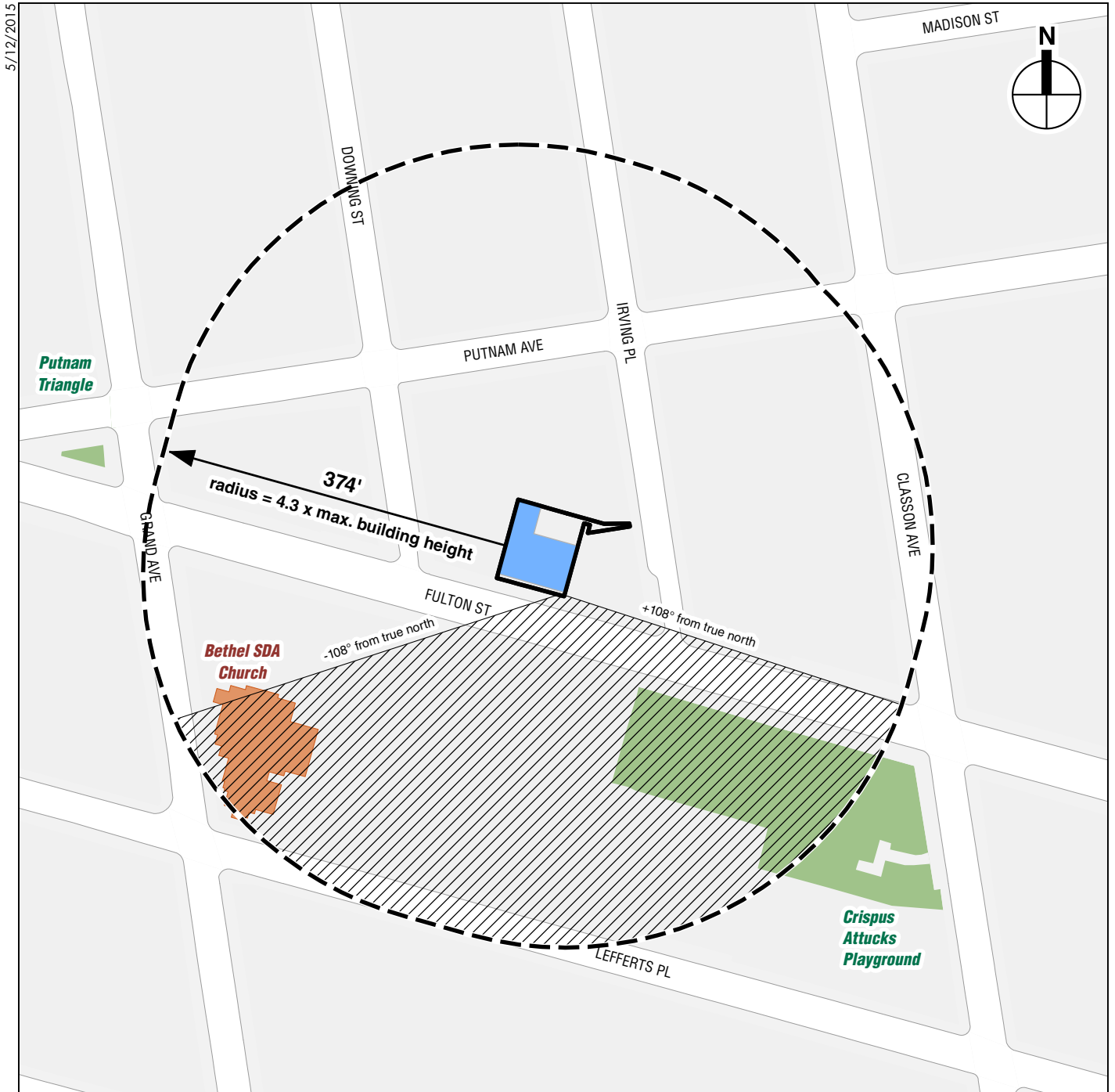
The Tier 2 assessment accounts for the fact that, because of the path that the sun travels across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given project site. In New York City this area lies between -108 and +108 degrees from true north. **Figure M-7** illustrates this triangular area south of the 1041-1047 Fulton Street site. The complementing area to the north within the longest shadow study area represents the remaining area that could potentially experience new project generated shadow. A very small portion of the Bethel SDA Church is located partially in the remaining longest shadow study area, and therefore the next tier of assessment was conducted. The Crispus Attucks Playground is located too far south to be within the remaining longest shadow study area.

The direction and length of shadows vary throughout the course of the day and also differ depending on the season. In order to determine whether project-generated shadow could fall on a sunlight-sensitive resource, 3D computer modeling software is used in the Tier 3 assessment to calculate and display the proposed project's shadows on individual representative days of the year. 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 a reasonable worst-case three-dimensional representation of the proposed residential building.

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, generally the day halfway between the summer solstice and the equinoxes, i.e. May 6 or August 6, which have approximately the same shadow patterns.

The shadow assessment considers shadows occurring between one and a half hours after sunrise and one and a half hours before sunset. At times earlier or later than this timeframe window of analysis, the sun is down near the horizon and the sun's rays reach the Earth at very tangential angles, diminishing the amount of solar energy and 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 outside the timeframe window of analysis are not considered significant under *CEQR*, and their assessment is not required.

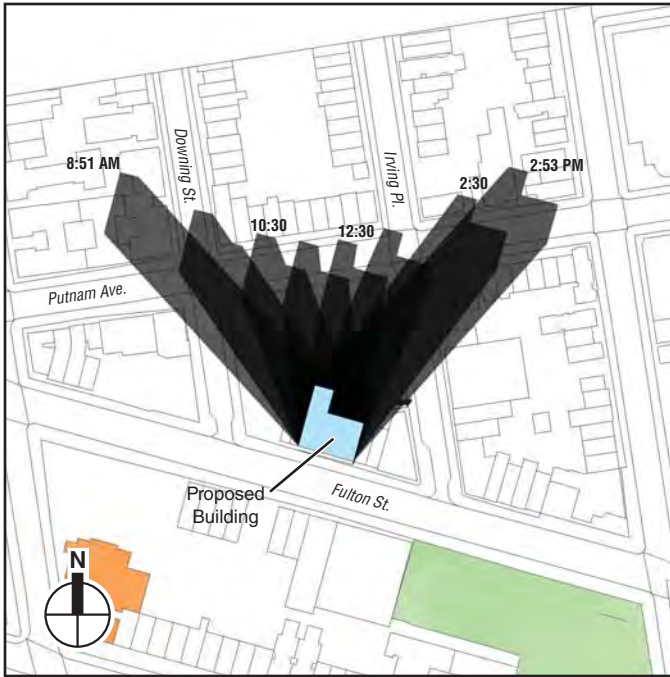
Figure M-8 illustrates the range of shadows that would occur, in the absence of intervening buildings, from the proposed 1041-1047 Fulton Street building on the four representative days



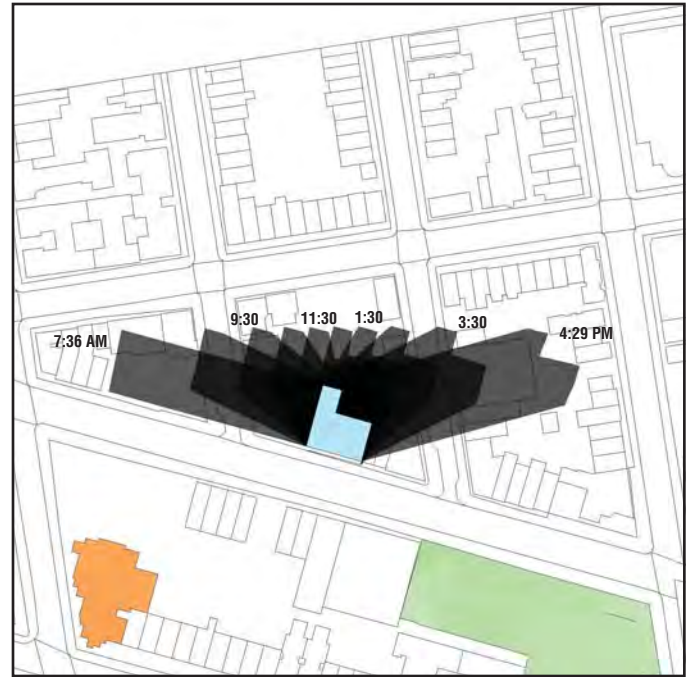
- Project Site
- Proposed Building
- Tier 1: Longest shadow study area boundary
- Tier 2: Area south of site that could never be shaded by proposed building
- Publicly-Accessible Open Space
- Historic Resources with Sunlight-Sensitive Features

0 400 FEET

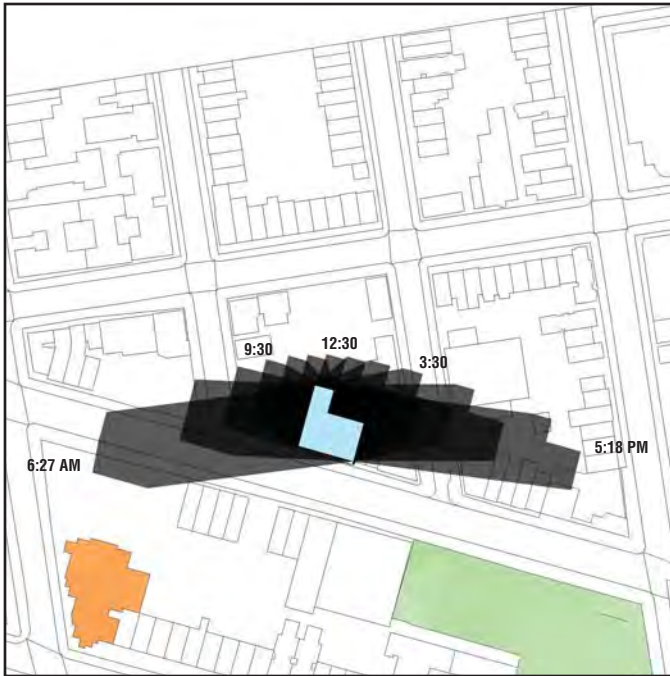
Tier 1 and Tier 2 Assessments
1041-1047 Fulton Street
Figure M-7



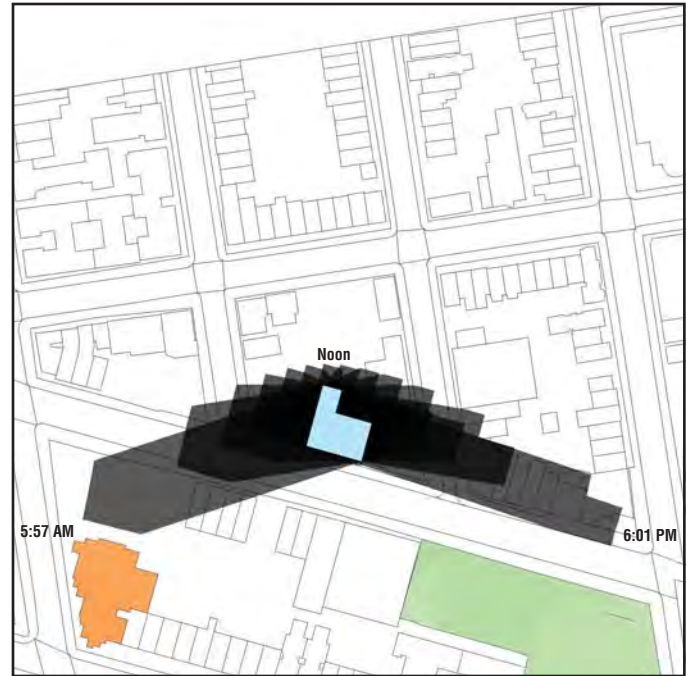
December 21



March 21/Sept. 21



May 6/August 6



June 21

0 200 500 FEET

- Proposed Addition*
- Publicly-Accessible Open Space*
- Historic Resource with Sun-Sensitive Features*
- Shadow*

- Notes:
1. Daylight Saving Time not used per CEQR guidelines.
 2. Shadows are shown occurring approximately every hour 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.

for analysis. As they move east and clockwise over the landscape, the shadows are shown occurring approximately every 60 minutes 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 showed that the proposed 1041-1047 Fulton Street building's shadow would not be long enough to reach the Bethel SDA Church or Crispus Attucks Playground on any of the four analysis days. Therefore, no shadow impacts would occur and no further analysis is necessary.

HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

Archaeological impacts are site specific and dependent upon not only the areas of subsurface disturbance but on the presence or absence of archaeological resources on or in proximity to a development site. The study area for archaeological resources is defined as the area where subsurface disturbance would occur. In a letter dated January 9, 2015, the New York City Landmarks Preservation Commission (LPC) determined that the 911-917 Atlantic Avenue site is not archaeologically sensitive (see **Appendix 1**). The same finding was made for the 1041-1047 Fulton Street site as part of the *Fort Greene / Clinton Hill Rezoning and Text Amendment Environmental Assessment Statement* (2007).⁷ In a letter dated April 8, 2015, LPC confirmed the archaeology determination for both sites (see **Appendix 1**).

ARCHITECTURAL RESOURCES

To evaluate potential effects due to on-site construction activities, and also to account for visual or contextual impacts, the study area for architectural resources is defined as extending 400 feet from the proposed off-site housing locations. As defined in the New York City Department of Building's (DOB) *Technical Policy and Procedure Notice (TPPN) #10/88*, adjacent construction is defined as any construction activity that would occur within 90 feet of an architectural resource.⁸ Consistent with the guidance of the 2014 *CEQR Technical Manual*, designated architectural resources ("known architectural resources") that were analyzed include: New York City Landmarks (NYCL), Interior Landmarks, Scenic Landmarks, New York City Historic Districts (NYCHD); resources calendared for consideration as one of the above by LPC; resources listed on or formally determined eligible for inclusion on the State and National Registers of Historic Places (S/NR), or contained within a district listed on or formally determined eligible for listing on the Registers; resources recommended by the New York State Board for listing on the Registers; and National Historic Landmarks (NHL). Additionally, a survey was conducted to identify any previously undesignated properties in the study area that appear to be potentially eligible for NYCL designation or S/NR listing ("potential architectural resources").

⁷ The lots associated with the 1041-1047 Fulton Street site were evaluated in the 2007 EAS, for which LPC was asked to evaluate the possibility that archaeological resources may exist. LPC determined at that time that preexisting archaeological resources were unlikely to remain on the site.

⁸ 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.

Consistent with the guidance of the *CEQR Technical Manual*, in order to determine whether the proposed affordable housing development could potentially affect architectural resources, this analysis considers whether the proposed affordable housing would result in a physical change to any resource, a physical change to the setting of any resource (such as context or visual prominence), and, if so, whether the change is likely to alter or eliminate the significant characteristics of the resource that make it important.

There are no known or potential architectural resources located on the two affordable housing sites. In a comment letter dated April 8, 2015, LPC confirmed this finding (see Appendix 1). Within 400 feet of the 911-917 Atlantic Avenue site, there are two known architectural resources: the Clinton Hill South Historic District (S/NR-listed), and the James W. and Lucy S. Elwell House at 70 Lefferts Place (NYCL). Within 400 feet of the 1041-1047 Fulton Street site, there are three known architectural resources: the Lincoln Club (now Mechanics Temple) at 65 Putnam Avenue (NYCL, S/NR-listed); the Clinton Hill Historic District (NYCL, S/NR-listed), and the Clinton Hill South Historic District (S/NR-listed). No potential architectural resources were located in the study area.

The Clinton Hill South Historic District is located within 90 feet of construction activities for the proposed development at 911-917 Atlantic Avenue. Therefore, to avoid inadvertent construction-period damage to this resource, a construction protection plan (CPP) would be prepared and implemented, in consultation with LPC. The James W. and Lucy S. Elwell House is located more than 90 feet from proposed construction activities on the 911-917 Atlantic Avenue site, and thus the proposed housing development would not be anticipated to have any direct, physical impacts on that resource. There are no architectural resources within 90 feet from proposed construction activities on the 1041-1047 Fulton Street site, and thus the proposed housing development would not be anticipated to have any direct, physical impacts on such resources. It is not anticipated that the proposed project would have any significant adverse visual or contextual impacts on the architectural resources in the study area, as the proposed affordable housing development would be consistent with the existing zoning of the height, would contain the same residential uses that are prevalent in the study area, and would not introduce any incompatible visual, audible, or atmospheric elements to the setting of the architectural resources in the surrounding area. Therefore, the proposed affordable housing development would not result in any significant adverse direct or indirect effects to architectural resources.

URBAN DESIGN AND VISUAL RESOURCES

Since the proposed off-site housing would be constructed in compliance with existing zoning regulations, it would not meet the 2014 *CEQR Technical Manual* threshold for an analysis of potential significant adverse impacts to urban design and visual resources, and no such impacts would be expected.

NATURAL RESOURCES

The proposed off-site housing locations are located within a fully developed urban area. Therefore, the proposed off-site housing development would not meet the 2014 *CEQR Technical Manual* threshold for an analysis of potential significant adverse impacts to natural resources, and no such impacts would be expected.

HAZARDOUS MATERIALS

The proposed off-site housing locations were assessed as projected and potential development sites as part of the *Fort Greene / Clinton Hill Rezoning and Text Amendment Environmental Assessment Statement* (2007). To avoid any potential significant adverse impacts associated with hazardous materials, as part of that rezoning, an (E) designation for hazardous materials was placed on all of the lots that comprise the affordable housing sites. The (E) designation requires that the fee owner of the site conduct a testing and sampling protocol and remediation where appropriate, to the satisfaction of the New York City Office of Environmental Remediation (OER) before the issuance of a building permit by the New York City Department of Buildings. The text of the (E) designation is provided in **Appendix 2**.

Testing and remediation of the 911-917 Atlantic Avenue site has not yet commenced. On the 1041-1047 Fulton Street site, a remedial investigation consisting of soil, groundwater and soil vapor sampling was performed in 2013 and 2014 with OER approval under the New York City Voluntary Cleanup Program (NYC VCP). Soil analytical results indicated concentrations were greater than the New York State Department of Environmental Conservation (NYSDEC) Part 375 Soil Cleanup Objectives (SCOs) Unrestricted Use for SVOCs, metals and/or pesticides in 6 of the 12 soil samples. Soil concentrations were greater than the NYSDEC SCOs for Restricted Residential Use for several SVOCs, lead and mercury in two of the 12 soil samples. There were no concentrations greater than the Restricted Residential SCOs in the remaining 12 soil samples. Groundwater analytical results indicated only one VOC (tetrachloroethene) was detected at a concentration above the NYSDEC Class GA drinking water standard in one of the two groundwater samples collected. No SVOCs, PCBs or pesticides were detected in groundwater at concentrations greater than the Class GA standard. Soil vapor analytical results indicated VOCs associated with petroleum and solvents were detected. However, the parameters with guidance values all had sub-slab vapor concentrations under the NYSDOH 2006 Soil Vapor Intrusion matrix guidance values established to determine if mitigation was appropriate.

A Remedial Action Work Plan (RAWP) dated September 2013 was approved by OER with issuance of a Notice to Proceed on May 13, 2014. The RAWP includes provisions for soil/fill handling, reuse and disposal requirements; health and safety and community air monitoring during soil disturbance activities; and long-term engineering controls in the form of a vapor barrier, a sub-slab depressurization system and site cover.

WATER AND SEWER INFRASTRUCTURE

According to the 2014 *CEQR Technical Manual*, an analysis of an action's impact on the water supply system should be conducted only for actions that would have exceptionally large demand for water, such as power plants, very large cooling systems, or large developments (e.g., those that use more than 1 million gallons per day [gpd]). In addition, actions located in areas of low water pressure at the extremities of the water distribution system should be analyzed. The proposed project, including both the proposed mixed-use development at 280 Cadman Plaza West and the off-site affordable housing developments at 911-917 Atlantic Avenue and 1041-1047 Fulton Street, would not meet any of these criteria. None of these sites are located at the extremities of the water distribution system, and, based on water usage rates in Table 13-2 of the *CEQR Technical Manual*, the proposed project would have a total water demand of 166,190 gpd (see **Table M-4**). Therefore, an analysis of water supply is not warranted, and no significant adverse water supply impacts would be expected.

According to the guidelines of the *CEQR Technical Manual*, a preliminary analysis of wastewater and stormwater conveyance and treatment is warranted if a project: is located in a combined sewer area and would have an incremental increase above the No Action condition of 400 residential units or 150,000 square feet of commercial, public facility and institution and/or community facility space in Brooklyn; is located in a separately sewer area and would exceed certain incremental development thresholds; is located in an area that is partially sewer or currently unsewered; involves development on a site five acres or larger where the amount of impervious surface would increase; would involve development on a site one acre or larger where the amount of impervious surface would increase and other criteria are met; or would involve construction of a new stormwater outfall that requires federal and/or state permits.

The proposed project includes a total of 423 residential units (308 units on the 280 Cadman Plaza West mixed-use development site, and 115 units on the proposed off-site housing locations). The 280 Cadman Plaza West development site and the proposed off-site housing locations are served by different portions of the combined sewer system that connects to the Red Hook Wastewater Treatment Plant (WWTP). Based on system-wide drainage maps for the Red Hook WWTP obtained from the New York City Department of Environmental Protection (DEP), the 280 Cadman Plaza West development site is located in the drainage area of regulator R17, while the proposed off-site housing locations are located in the drainage area of regulator R20. Therefore, while the proposed project is above the 400 unit threshold for a wastewater and stormwater conveyance analysis, the proposed project would not result in development increments above the screening threshold of 400 units in an area directing flow to a single regulator and outfall. Existing wastewater and stormwater conveyance infrastructure is expected to be sufficient to carry the incremental increase in wastewater flow, described below, and no further analysis of conveyance infrastructure is warranted. However, as noted above, the proposed project would result in development above the 400 unit in an area served by one wastewater treatment plant (the Red Hook WWTP); therefore, a preliminary analysis of the proposed project's potential impacts on the WWTP is provided below.

The Red Hook WWTP is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by NYSDEC, which also establishes a maximum permitted capacity: for the Red Hook WWTP, the maximum permitted capacity is 60 million gallons per day (mgd). The average monthly flow to the Red Hook WWTP over the past 12 months is 28 mgd,⁹ well below the maximum permitted capacity. As shown in **Table M-4**, the proposed project is expected to result in a total incremental increase in sanitary sewage flows to the WWTP of 83,641 gpd.¹⁰ This amount would represent approximately 0.3 percent of the Red Hook WWTP's average daily flow, and would not result in an exceedance of the WWTP's permitted capacity of 60 mgd. Therefore, the proposed project is not anticipated to result in a significant adverse impact on the City's sanitary sewage conveyance and treatment system.

⁹ 12-month period through January 2015.

¹⁰ For purposes of a conservative analysis, this estimate does not account for any existing sanitary sewage generated on the proposed off-site housing locations.

Table M-4
Water Consumption and Sewage Generation

Use ¹	Size (gsf/residents)	Rate	Consumption (gpd)
No Action Condition²			
Commercial/Office—Domestic	59,146 gsf	0.10 gpd/sf	5,915
Commercial/Office—Air Conditioning	59,146 gsf	0.17 gpd/sf	10,055
Total Water Demand			15,969
Total Sewer Demand³			5,915
With Action Condition			
Residential—Domestic	850 residents ⁴	100 gpd/person	85,000
Residential—Air Conditioning	407,711 gsf	0.17 gpd/sf	69,311
Retail Stores—Domestic	1,775 gsf	0.24 gpd/sf	426
Retail Stores—Air Conditioning	1,775 gsf	0.17 gpd/sf	302
Commercial/Office—Domestic	41,300 gsf	0.10 gpd/sf	4,130
Commercial/Office—Air Conditioning	41,300 gsf	0.17 gpd/sf	7,021
Total Water Demand			166,190
Total Sewer Demand³			89,556
Incremental Water Demand			150,221
Incremental Sewer Demand			83,641
Notes: 1. For purposes of analysis, community facility space (library and/or school recreation/community center) are estimated to consume water and generate sewage at the rates for commercial/office space. 2. Does not include any water demand or sewage generation on the proposed off-site housing locations. 3. Does not include water used by air conditioning, which is typically not discharged to the sewer system. 4. 423 total units multiplied by Brooklyn Community District 2 average household size of 2.01 (2010 Census).			
Sources: Rates from Table 13-2 , 2014 <i>CEQR Technical Manual</i>			

SOLID WASTE AND SANITATION SERVICES

According to the 2014 *CEQR Technical Manual*, a solid waste assessment is appropriate if a project generates 50 tons per week or more. Based on Citywide solid waste generation rates identified in Table 14-1 of the *CEQR Technical Manual*, the proposed project, including the mixed-use building at 280 Cadman Plaza West and the off-site housing, would generate a total of approximately 18,977 pounds (9.49 tons) per week of solid waste (see **Table M-5**). Therefore, an analysis of solid waste is not warranted, and the proposed off-site affordable housing would not have any potential significant adverse impacts to solid waste and sanitation services.

Table M-5
Proposed Project Solid Waste Generation

Use	Floor Area	Employees/Units	Solid Waste Generation Rate (per week) ¹	Solid Waste Generation (pounds per week)
Development Site				
Residential	308,082 gsf	308 units	41 pounds per unit	12,628
Retail	736 gsf	2 ²	79 pounds per employee	158
Community Facility ³	41,300 gsf	N/A	0.03 pounds per square foot	1,239
Off-site Housing Locations				
Residential	99,324 gsf ⁴	115 units	41 pounds per unit	4,715
Retail	1,125 gsf	3 ²	79 pounds per employee	237
Total				18,977
Notes: 1. See Table 14-1 of the <i>CEQR Technical Manual</i> 2. Based on estimate of one employee per 333 gsf of retail space. 3. For purposes of analysis, community facility space (library and/or school recreation/community center) is assumed to generate solid waste at the government office rate. 4. Total of 65,817 residential gsf at 911-917 Atlantic Avenue and 34,937 residential gsf at 1041-1047 Fulton Street.				

ENERGY

As recommended by the 2014 *CEQR Technical Manual*, this section projects the amount of energy consumption required by the proposed off-site affordable housing development. The energy consumption for the proposed project, including the mixed-use building at 280 Cadman Plaza West and the off-site housing, would generate a total demand of approximately 62,356 million BTUs per year (see **Table M-6**). This increase in energy consumption is a negligible change that would not overburden the electrical generation and transmission system. Therefore, the proposed off-site affordable housing would not have any potential significant adverse impacts to energy.

Table M-6
Proposed Project Energy Consumption

Use	Floor Area	Energy Consumption (Million BTU per year) ¹
Development Site		
Residential	308,082 gsf	39,034
Retail	650 gsf	141
Community Facility	41,300 gsf	10,354
Off-site Housing Locations		
Residential	99,324 gsf ²	12,584
Retail	1,125 gsf	243
Total		62,356
Notes: 1. Energy consumption based on rates presented in Table 15-1 of the <i>CEQR Technical Manual</i> : 126.7 Thousand BTUs (MBtu) per square foot of residential space, 216.3 MBtu per square foot of commercial space, and 250.7 MBtu per square foot of institutional (community facility) space. 2. Total of 65,817 gsf at 911-917 Atlantic Avenue and 34,937 gsf at 1041-1047 Fulton Street.		

TRANSPORTATION

The number of DUs to be developed at the proposed off-site housing locations (115 units) would be below the 2014 *CEQR Technical Manual*'s minimum residential development density threshold for this part of Brooklyn (Zone 1), which is 240 DUs. Therefore, transportation analysis of the proposed off-site affordable housing site is not warranted, and no significant adverse transportation-related impacts would be expected.

The proposed off-site affordable housing is located approximately 2 miles away from the proposed mixed-use building at 280 Cadman Plaza West, and therefore there is no potential for cumulative significant adverse transportation-related impacts from these two elements of the proposed project. As detailed in Attachment I, "Transportation," the transportation study area for the development site consists of one corner and one sidewalk at the intersection of Pierrepont Street and Clinton Street in Brooklyn Heights. The primary generator of pedestrian traffic on these elements is residential subway trips to and from the nearby subway stations: Court Street Station (R train); the Clark Street Station (No. 2 and 3 trains); the High Street Station (A and C trains); the Borough Hall Station (No. 2, 3, 4, and 5 trains); and the Jay Street/MetroTech Station (A, C, F, and R trains). The residents of the off-site housing locations would not likely use these stations coming to and from the off-site location during the analyzed AM and PM peaks (they would most likely use the Clinton-Washington [A,C] station or the Franklin Avenue [C] station). Therefore, residential trips generated by the off-site housing locations are not expected to traverse the transportation study area pedestrian elements.

AIR QUALITY

MOBILE SOURCES

The maximum hourly traffic generated by the proposed off-site housing would not exceed the 2014 *CEQR Technical Manual* carbon monoxide screening threshold of 170 peak hour vehicle trips at an intersection in the study area or the particulate matter emission screening threshold discussed in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*. In addition, as detailed in Attachment I, "Transportation," the incremental vehicle trips generated by the 280 Cadman Plaza West mixed-use development would be below the CEQR Level-1 traffic screening threshold of 50 peak hour vehicles requiring further detailed analysis (there would be a maximum of approximately 30 vehicle trips). As the proposed off-site housing development is substantially smaller than the 280 Cadman Plaza West mixed-use development, it would yield substantially fewer project-generated peak hour vehicle trips such that even when the project-generated peak hour vehicle trips for both components of the proposed project are aggregated, the cumulative number of project-generated vehicles would still be substantially less than the *CEQR Technical Manual* carbon monoxide screening threshold of 170 peak hour vehicle trips at any intersection or the particulate matter emission screening threshold. Therefore, there would be no potential for significant adverse impacts from project-generated traffic on air quality, and a quantified assessment is not warranted.

STATIONARY SOURCES

Heating and Hot Water System Screening Analysis

To assess air quality impacts associated with emissions from the proposed off-site housing's heating and hot water systems, a screening analysis was performed using the methodology described in the *CEQR Technical Manual*. This methodology determines the threshold of development size below which a proposed action would not have a significant impact. The screening procedure utilizes information on the type of fuel to be burned, the maximum development size, the type of development, and the stack exhaust height. 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 and no further study is required.

The analysis was performed for the proposed off-site housing developments at 911-917 Atlantic Avenue and 1041-1047 Fulton Street. The analysis was performed conservatively assuming No. 2 fuel oil, which has a greater potential for impacts on air quality. As per the *CEQR Technical Manual* screening procedure, the primary pollutant of concern is sulfur dioxide (SO₂) when burning No. 2 fuel oil.

911-917 Atlantic Ave (proposed 9-story building)

The proposed floor area of 65,817 gsf and stack height of 83 feet (based on an 80-foot building height) was analyzed for this development. The nearest building of similar or greater height is beyond 400 feet; therefore, this distance was used in the analysis, as per the *CEQR Technical Manual* guidance.

The analysis showed that burning fuel oil would not result in any significant adverse stationary source air quality impacts 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 shown in Figure 17-5 of the Air Quality Appendix of the *CEQR Technical Manual*.

1041-1047 Fulton Street (proposed 8-story building)

The proposed floor area of 34,937 gsf and stack height of 78 feet (3 feet above the minimum top roof height) was analyzed. The nearest building of similar or greater height is beyond 400 feet; therefore, this distance was used in the analysis, as per *CEQR Technical Manual* guidance. The analysis showed that burning fuel oil would not result in any significant adverse stationary source air quality impacts 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 shown in Figure 17-5 of the Air Quality Appendix of the *CEQR Technical Manual*. Therefore, there would be no significant adverse air quality impacts.

Industrial Source Analysis

911-917 Atlantic Avenue site is located adjacent to a zoned industrial area; therefore, air quality impacts from nearby industrial sources of air pollution (e.g., from manufacturing or processing facilities) were examined. 1041-1047 Fulton Street is not located near a zoned industrial area, and thus an industrial source analysis was not performed for that site. To assess air quality impacts on the proposed off-site housing at the 911-917 Atlantic Avenue site associated with emissions from nearby industrial sources, an investigation was conducted. Initially, land use and Sanborn maps were reviewed to identify potential sources of emissions from manufacturing/industrial operations.

A search of the New York City Department of Environmental Protection's (DEP) Bureau of Environmental Compliance (BEC) air permits was performed to determine whether manufacturing or industrial emissions occur. In addition, a search of federal and state-permitted facilities within the study area was conducted using the EPA's Envirofacts database.¹¹ No businesses were found to have an NYSDEC permit or DEP certificate of operation within the surveyed area. In addition, a field survey was conducted on June 9, 2015. No active businesses with the potential to emit air pollutants within the study area were identified. A small auto repair shop was identified at 970 Atlantic Avenue. However, no visible emissions or odors were observed from this facility at the time of the field survey. Furthermore, a survey of aerial and photographs did not identify any ventilation systems typically associated with permitted auto body paint shops. Based on these observations, there is no evidence of any activities that would require a quantitative analysis of this establishment as an industrial source of emissions. Therefore, no potential significant adverse air quality impacts from industrial sources would occur on the proposed off-site housing, and no further analysis was warranted.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

According to the 2014 *CEQR Technical Manual*, a greenhouse gas (GHG) consistency assessment is appropriate for projects in New York City being reviewed in an Environmental Impact Statement (EIS) that would result in development of 350,000 square feet or greater. Since the proposed off-site affordable housing would be only approximately 100,000 sf in size, an assessment of the proposed project's consistency with the City's GHG emissions goals is not warranted.

¹¹ http://oaspub.epa.gov/enviro/ef_home2.air

While the proposed mixed-use development at 280 Cadman Plaza West, together with the proposed off-site housing, would result in development of 350,000 square feet or greater, this EAS finds that the proposed actions would not result in significant adverse impacts requiring the preparation of an EIS. Therefore, an assessment of the proposed project's consistency with the City's GHG emissions goals is not warranted.

NOISE

The 2014 *CEQR Technical Manual* requires that a noise study be conducted if the proposed project would result in a significant increase in noise levels (particularly at sensitive land uses such as residences), if building attenuation could result in unacceptable interior noise levels within the proposed buildings, or if building mechanical systems could produce noise levels that would result in significant increases in ambient noise.

The proposed off-site housing would generate vehicular trips; however, the development would not generate sufficient traffic to have the potential to cause a significant mobile source noise impact (i.e., it would not result in a doubling of noise passenger car equivalents [Noise PCEs] which would be necessary to cause a 3 dBA increase in noise levels. In addition, given that outdoor mechanical equipment would be designed to meet applicable regulations, an analysis of potential noise impacts due to building HVAC equipment is not required.

In regard to building attenuation, the *CEQR Technical Manual* has set noise attenuation requirements for buildings based on exterior noise levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential use, and are determined based on exterior $L_{10(1)}$ noise levels.

To avoid any potential impacts associated with noise, as part of the 2007 Fort Greene / Clinton Hill rezoning, an (E) designation for noise was placed on all of the lots analyzed that comprise the off-site housing development. The (E) designation requires that in order to ensure an acceptable interior noise environment, future residential/commercial uses on these lots must provide a closed window condition with a minimum of 30 dB(A) for 1041-1047 Fulton Street (Block 1992, Lots 5-9) and 35 dB(A) for 911-917 Atlantic Avenue (Block 1818, Lots 62-64) window wall attenuation in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. The proposed affordable housing development would comply with the requirements of the (E) designation, and therefore would not result in significant adverse noise impacts. The text of the (E) designation is provided in **Appendix 2**.

PUBLIC HEALTH

This analysis of the proposed off-site affordable housing has not identified the potential for any significant unmitigated adverse impacts in the following CEQR analysis areas: air quality, water quality, hazardous materials, and noise. Therefore, based on the methodologies in the 2014 *CEQR Technical Manual*, an analysis of public health is not warranted.

NEIGHBORHOOD CHARACTER

As described in the 2014 *CEQR Technical Manual*, an assessment of neighborhood character is generally needed when a proposed action has the potential to result in significant adverse impacts in one or more of the following technical areas: land use, zoning and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; and noise. An assessment of neighborhood character is also

needed if an action may have moderate effects on several of the elements that define a neighborhood's character.

This analysis has not identified the potential for the proposed off-site housing to result in significant adverse impacts in the CEQR analysis areas listed above. Therefore, based on the methodologies in the *CEQR Technical Manual*, an analysis of neighborhood character is not warranted.

CONSTRUCTION

As described above, the construction period for the proposed off-site housing is expected to be less than 24 months in total (i.e., including both locations), and no community facilities would be directly displaced or altered by construction.

As recommended in the 2014 *CEQR Technical Manual*, construction-related impacts are typically analyzed to determine if there are any disruptive or noticeable effects resulting from a proposed action. Construction activities associated with the proposed off-site housing could result in temporary disruption to the surrounding community, including occasional noise and dust. However, this would be true of any construction project, and these effects would not be considered significant. The construction of the proposed off-site housing is not subject to New York City Local Law 77. However, all necessary measures would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed. As a result, no significant air quality impacts from dust emissions would be expected as a result of the project.

The DOB regulates the permitted hours of construction, which apply in all areas of the city, and these hours are reflected in the collective bargaining agreements with major construction trade unions. In accordance with those regulations, work would begin at 7 AM on weekdays, although some workers would arrive and begin the prepare work areas between 6 and 7 AM. Normally, work would end by 6 PM. Construction activities associated with the proposed actions would normally take place Monday through Friday, although the delivery or installation of certain critical equipment could occur on weekend days or on an overtime basis; such work would be performed in coordination with conditions imposed by the agencies.

Increased noise levels created by construction activities related to the proposed off-site housing could also occur. Construction noise is regulated by the New York City Noise Control Code and by the United States Environmental Protection Agency (EPA) noise emission standards for construction equipment. These federal and local requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards. Construction materials would be handled and transported in such a manner as to not create any unnecessary noise. Compliance with those noise control measures would be ensured by including them in the contract documents as materials specification and by directives to the construction contractors. No significant noise impacts are expected to occur as a result of the construction associated with the proposed affordable housing development.

The construction would include a rodent control program. Prior to the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation.

The Clinton Hill South Historic District is located within 90 feet of construction activities for the proposed development at 911-917 Atlantic Avenue. Therefore, to avoid inadvertent construction-period damage to this resource, a construction protection plan (CPP) would be prepared and implemented, in consultation with LPC.

The proposed project would comply with the (E) designation requirements in regard to hazardous materials. Therefore, the proposed actions would not result in any hazardous materials impacts during construction of the proposed project.

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 direct activity. Construction also would contribute to increased tax revenues for the City and State, including those from personal income taxes.

The environmental effects of construction activities are typically localized. Given the approximately 2-mile distance between the 280 Cadman Plaza West mixed-use development site and the proposed off-site housing locations, there is no potential for cumulative, significant adverse construction impacts between these project elements. *

Appendix A

LPC Correspondence

ARCHAEOLOGY

Project number: DEPUTY MAYOR FINANCE/ECO DEV / LA-CEQR-K

Project:

Address: 280 CADMAN PLAZA WEST, **BBL:** 3002390016

Date Received: 11/10/2014

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.

☒ **No archaeological significance**

☐ **Designated New York City Landmark or Within Designated Historic District**

☐ **Listed on National Register of Historic Places**

☐ **Appears to be eligible for National Register Listing and/or New York City Landmark Designation**

☐ **May be archaeologically significant; requesting additional materials**



11/21/2014

SIGNATURE

Amanda Sutphin, Director of Archaeology

DATE

File Name: 30028_FSO_GS_11212014.doc

ARCHAEOLOGY

Project number: DEPUTY MAYOR FINANCE/ECO DEV / 15DME005K

Project:

Date received: 1/7/2015

Comments:

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: 917 ATLANTIC AVENUE, BBL: 3020180062
- 2) ADDRESS: 915 ATLANTIC AVENUE, BBL: 3020180063
- 3) ADDRESS: 911 ATLANTIC AVENUE, BBL: 3020180064



1/9/2015

SIGNATURE

Amanda Sutphin, Director of Archaeology

DATE

File Name: 30157_FSO_GS_01092015.doc

ENVIRONMENTAL REVIEW

Project number: DEPUTY MAYOR FINANCE/ECO DEV / 15DME005K
Project: 280 CADMAN PLAZA WEST
Date received: 3/20/2015

Comments:

The LPC is in receipt of the EAS dated 3/4/15. Attachment G, "Historic and Cultural Resources" is acceptable; note the determinations on the potential resources as listed below. Regarding Attachment F, "Shadows", it is noted that there appears to be a significant impact to the Brooklyn General Post Office as a result of this action.

Properties with Architectural significance:

- 1) ADDRESS: 181 MONTAGUE STREET, BBL: 3002440015, PROPERTY NAME: PEOPLE'S TRUST COMPANY BUILDING, LPC FINDINGS: ELIGIBLE NYC LANDMARK EXTERIOR, STATE/NATIONAL REGISTER FINDINGS: ELIGIBLE FOR NATIONAL REGISTER LIST
- 2) ADDRESS: 185 MONTAGUE STREET, BBL: 3002440013, PROPERTY NAME: NATIONAL TITLE GUARANTY BUILDING, LPC FINDINGS: ELIGIBLE NYC LANDMARK EXTERIOR, STATE/NATIONAL REGISTER FINDINGS: ELIGIBLE FOR NATIONAL REGISTER LIST



3/27/2015

SIGNATURE
Gina Santucci, Environmental Review Coordinator

DATE

File Name: 30028_FSO_GS_03272015.doc

ENVIRONMENTAL REVIEW

Project number: DEPUTY MAYOR FINANCE/ECO DEV / 15DME005K
Project: 280 CADMAN PLAZA WEST
Date received: 4/13/2015

Comments: as indicated below. Properties that are individually LPC designated or in LPC historic districts require permits from the LPC Preservation department. Properties that are S/NR listed or S/NR eligible require consultation with SHPO if there are State or Federal permits or funding required as part of the action.

REVISED COMMENTS OF THIS DATE

The LPC is in receipt of "Attachment M, Affordable Off-Site Housing", dated 3/4/15. Comments for this attachment only are below.

Properties with no Architectural or Archaeological significance:

- 1) ADDRESS: 1047 FULTON STREET, BBL: 3019920005
- 2) ADDRESS: 1045 FULTON STREET, BBL: 3019920006
- 3) ADDRESS: 1043 FULTON STREET, BBL: 3019920007
- 4) ADDRESS: 1041A FULTON STREET, BBL: 3019920008
- 5) ADDRESS: 1041 FULTON STREET, BBL: 3019920009
- 6) ADDRESS: 915 ATLANTIC AVENUE, BBL: 3020180063, LPC FINDINGS: NO INTEREST, STATE/NATIONAL REGISTER FINDINGS: ADJACENT NR HISTORIC DISTRICT, COMMENTS: CLINTON HILL SOUTH HD.
- 7) ADDRESS: 917 ATLANTIC AVENUE, BBL: 3020180062, LPC FINDINGS: NO INTEREST, STATE/NATIONAL REGISTER FINDINGS: ADJACENT NR HISTORIC DISTRICT, COMMENTS: CLINTON HILL SOUTH HD.
- 8) ADDRESS: 911 ATLANTIC AVENUE, BBL: 3020180064, LPC FINDINGS: NO INTEREST, STATE/NATIONAL REGISTER FINDINGS: ADJACENT NR HISTORIC DISTRICT, COMMENTS: CLINTON HILL SOUTH HD

No adverse impacts to this district are anticipated as a result of this action.



4/14/2015

SIGNATURE
Gina Santucci, Environmental Review Coordinator

DATE

File Name: 30028_FSO_GS_04142015.doc

ENVIRONMENTAL REVIEW

Project number: DEPUTY MAYOR FINANCE/ECO DEV / 15DME005K
Project: 280 CADMAN PLAZA WEST
Date received: 5/6/2015

Comments

The LPC is in receipt of the revised Shadows Chapter of the EAS dated 5/5/15. The text is acceptable.



5/6/2015

SIGNATURE
Gina Santucci, Environmental Review Coordinator

DATE

File Name: 30028_FSO_GS_05062015.doc

Appendix B
Revised Negative Declaration for
Fort Greene / Clinton Hill Rezoning and
Text Amendment



DEPARTMENT OF CITY PLANNING
CITY OF NEW YORK

OFFICE OF THE CHAIR

June 18, 2007

REVISED NEGATIVE DECLARATION

Supersedes Negative Declaration issued on April 23, 2007

Project Identification

CEQR No. 07DCP066K

ULURP Nos. 070430 ZMK & 070431 ZRY

SEQRA Classification: Type I

Lead Agency

City Planning Commission

22 Reade Street

New York, NY 10007

Contact: Robert Dobruskin

Name, Description, and Location of Proposal:

Fort Greene / Clinton Hill Rezoning and Text Amendment

The Department of City Planning (DCP) is proposing zoning map changes and a zoning text amendment for ninety-nine blocks located within the Fort Greene and Clinton Hill area of Community District 2, Brooklyn. The rezoning area is generally bounded by Park Avenue on the north, Classon Avenue to the east, Atlantic Avenue on the south and Ashland Place, Fort Greene Park and Carlton Avenue on the west.

The amendments to the Zoning Map are as follows:

- A change from an R6 district to an R5B district;
- A change from an R6 district to an R6A district;
- A change from an R6 district to an R6B district;
- A change from an R6 district to an R7A district;
- A change from an R7-2 district to an R7-2 district;
- A change from an M1-1 district to an R6A district;
- A change from an M1-1 district to an R7A district.
- A change from C1-3 commercial overlays to C2-4 commercial overlays and a reduction in depth from 150 feet to 100 feet;
- A change from C2-3 commercial overlays to C2-4 commercial overlays and a reduction in depth from 150 feet to 100 feet and
- Two new C2-4 commercial overlays would be mapped around Myrtle Avenue and Emerson Place; one C2-4 district would be added around Lafayette Avenue and South Elliot Place; four C2-4 overlays would be added along Fulton and along Atlantic Avenue
- Three C1-3 commercial overlays would be removed along Fulton Street and Adelphi Street.

Additionally, the DCP is proposing a zoning text amendment, pursuant to Zoning Resolution Section 23-922, which would allow the use of an Inclusionary Housing bonus to be made applicable in all proposed R7A zoning districts along Myrtle Avenue, Fulton Street and Atlantic Avenue within the Fort Greene and Clinton Hill neighborhoods.

The proposed action would result in a net increase of 546 residential units, 259 of which would be affordable. The proposed action would also result in an increase of 35,278 square feet of commercial space and a decrease of 166,781 square feet of community facility space. A total of 29 projected development sites and 28 potential development sites have been identified in the area.

To avoid the potential for impacts related to hazardous materials, air quality and noise, the proposed rezoning includes (E) designations. This Negative Declaration corrects an error in the Negative Declaration dated April 23, 2007, which inadvertently placed an (E) designation on Block 1991, Lots 2 and 3, which are city-owned.

The (E) designations for hazardous materials would be placed on all of the development sites. These sites are comprised of the following parcels:

Block 1890, Lots 85, 86, 87 & 89

Block 1892, Lots 70, 71, 74 & 75

Block 1893, Lots 10, 11, 13, 14, 15, 37, 38, 39,
40, 41, 42, 43, 47 & 49

Block 1894, Lots 54 & 55

Block 1895, Lot 61, 69, 70, 71 & 72

Block 1905, Lot 19, 30, 40 & 120

Block 1909, Lots 23, 25, 26 & 27

Block 1981, Lot 1

Block 1991, Lots 1, 4, 5, 6, 7, 16, 19 & 106

Block 1992, Lots 5, 6, 7, 8, 9, 12, 13, 15, 16, 20, 21, 24, 26, 28, 29 & 30

Block 2010, Lot 1, 18, 19, 20, 25 & 59

Block 2011, Lot 1, 30

Block 2012, Lots 1, 10, 27, 32, 65, 67, 69, 61, 62, 63, 70 & 71

Block 2018, Lots 1, 2, 3, 4, 5, 6, 46, 54, 55, 56, 57, 59, 60, 61, 62, 63, 64, 67, 101
& 166

Block 2019, Lot 1, 51, 55, 60, 63, 75 & 80

Block 2046, Lot 84

Block 2073, Lots 21 & 22

Block 2075, Lots 27 & 28

Block 2113, Lots 22 & 31

On the sites receiving (E) designation for hazardous materials, the contamination can be classified as petroleum based, non-petroleum based or both. The NYCDEP has developed protocols for both petroleum and non-petroleum based, or both. The NYCDEP has developed protocols for both petroleum and non-petroleum based (E) designated sites that are required to be followed in order to address possible contamination. The placement of the (E) designation on the zoning map would eliminate the potential for significant adverse impacts from hazardous materials and would ensure that appropriate testing and remediation, if needed, would be undertaken. The text of the (E) designation is as follows:

Task 1-Sampling Protocol

A. Petroleum

A soil, soil gas, and groundwater testing protocol (including a description of methods), and a site map with all sampling location represented clearly and precisely, must be submitted to the NYCDEP by the fee owner(s) of the lot which is restricted by this (E) designation, for review and approval.

A site map with the sampling locations clearly identified and a testing protocol with a description of methods, for soil, soil gas, and groundwater, must be submitted by the fee owner(s), of the lot which is restricted by the (E) designation, to the NYCDEP for review and approval.

B. Non-Petroleum

The fee owner(s) of the lot restricted by this (E) designation will be required to prepare a scope of work for any sampling and testing needed to determine if contamination exists and to what extent remediation may be required. The scope of work will include all relevant supporting documentation, including site plans and sampling locations. This scope of work will be submitted to NYCDEP for review and approval prior to implementation. It will be reviewed to ensure that an adequate number of samples will be collected and that appropriate parameters are selected for laboratory analysis. For all non-petroleum (E) designated sites, the three generic NYCDEP soil and ground-water sampling protocols should be followed.

A scope of work for any sampling and testing to be completed, which will determine the extent of on-site contamination and the required remediation, must be prepared

by the fee owner(s) of the lot restricted by this (E) designation. The scope of work will include the following: site plans, sampling locations, and all other relevant supporting documentation. The scope of work must be submitted to the NYCDEP for review and confirmation that an adequate testing protocol (i.e., number of samples collected, appropriate parameters for laboratory analysis) has been prepared. The NYCDEP must approve the scope of work before it can be implemented.

For non-petroleum (E) designated sites, one of the three generic soil and groundwater sampling protocols prepared by the NYCDEP should be followed.

The protocols are based on three types of releases to soil and groundwater sampling protocols prepared by the NYCDEP should be followed.

The protocols are based on three types of releases to soil and groundwater, including: the release of a solid hazardous material to ground surface; the release of a liquid hazardous material to the ground surface; and the release of a hazardous material to the subsurface (i.e., storage tank or piping). The type of release defines the areas of soil to be sampled from surface, near-surface, to subsurface. Additionally, it determines the need for groundwater sampling.

A written approval of the sampling protocol must be received from the NYCDEP before commencement of sampling activities. Sample site quantity and location should be determined so as to adequately characterize the site, the source of contamination, and the condition of the remainder of the site. After review of the sampling data, the characterization should b\have been complete enough to adequately determine what remediation strategy (if any) is necessary. Upon request, NYCDEP will provide guidelines and criteria for choosing sampling sites and performing sampling.

Finally, a Health and Safety Plan must be devised and approved by the NYCDEP before the commencement on any on-site activities.

Task 2-Remediation Determination and Protocol

After sample collection and laboratory analysis have been completed on the soil and/or groundwater samples collected in Task 1, a summary of the data and findings in the form of a written report must be presented to the NYCDEP for review and approval. The NYCDEP will provide a determination as to whether remediation is necessary.

If it is determined that no remediation activities are necessary, a written notice will be released to that effect. However, if it is the NYCDEP's determination that remediation is necessary the fee owner(s) of the lot restricted by the (E) designation must submit a proposed remediation plan to the NYCDEP for review and approval. Once approval has been obtain, and the work completed, the fee owner(s) of the lot

restricted by the (E) designation must provide proof to the NYCDEP that the work has been completed satisfactorily.

With the placement of the (E) designations on the above block and lots, no impacts related to hazardous materials are anticipated.

To avoid any potential impacts associated with noise, the proposed action would place an (E) designation for noise on the following projected development sites:

Block 1893, Lots 10, 11, 13, 14, 15, 37, 38, 39, 40, 41, 42, 43, 47, 49,

Block 1978, Lot 1

Block 1980, Lot 64, 66 & 67

Block 1981, Lot 1

Block 1889, Lot 94

Block 1991, Lots 1, 4, 5, 6, 7, 16, 19 & 106

Block 1992, Lots 5, 6, 7, 8, 9, 12, 13, 15, 16, 26, 28, 29 & 30

Block 2010, Lot 25

Block 2011, Lot 30

Block 2012, Lot 10 & 32

Block 2044, Lots 89 & 90

Block 2115, Lot 8 & 10

Block 2116, Lots 6, 7 & 8

Block 2117, Lots 43, 44 & 67

Block 2012, Lot 27

Block 2014, Lots 30, 31 & 32

Block 2046, Lot 84

Block 2073, Lots 21 & 22

Block 2075, Lots 27 & 28

Block 2113, Lots 22 & 31

The text of the (E) designation for noise for the above properties is as follows:

In order to ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed window condition with a minimum of 30 dB(A) window/wall attenuation in order to maintain an interior noise level of 45 dB(A). In order 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, central air conditioning or air conditioning sleeves containing air conditioners or HUD-approved fans.

To avoid any potential impacts associated with noise, the proposed action would place an (E) designation for noise on the following properties:

Block 1890, Lots 85, 86, 87 & 89
Block 1905, Lot 19, 30, 40 & 120
Block 1909, Lot 23, 25, 26, 27
Block 1892, Lots 70, 71, 74, 75
Block 1893, Lots 54, 57, 58, 59, 60
Block 1894, Lots 54 & 55
Block 1895, Lots 61, 69, 70, 71 & 72
Block 2003, Lots 30, 31 & 32
Block 2010, Lots 1 & 59
Block 2011, Lot 1
Block 2012, Lots 1, 62, 63, 65, 67, 69, 70 & 71
Block 2117, Lots 43, 44 & 45
Block 2018, Lots 1, 2, 3, 4, 5, 6, 46, 54, 55, 56, 57, 59, 60, 61, 62, 63, 64, 67, 101 & 166
Block 2019, Lots 1, 51, 55, 60, 63, 75 & 80

In order to ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed window condition with a minimum of 35 dB(A) window/wall attenuation in order to maintain an interior noise level of 45 dB(A). In order 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, central air conditioning or air conditioning sleeves containing air conditioners or HUD-approved fans.

With the placement of the (E) designations for noise on the above block and lots, no impacts related to noise are expected.

Statement of No Significant Effect:

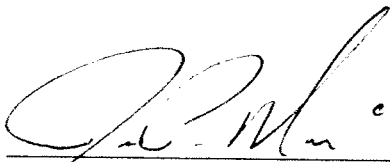
The Environmental Assessment and Review Division of the Department of City Planning, on behalf of the City Planning Commission, has completed its technical review of the Environmental Assessment Statement, dated April 20, 2007, prepared in connection with the ULURP Applications (ULURP Nos. 070430 ZMK & N070431 ZRY). The City Planning Commission has determined that the proposed action will have no significant effect on the quality of the environment.

Supporting Statement:

The above determination is based on an environmental assessment which finds that:

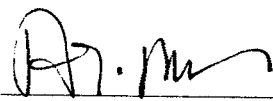
1. The original Negative Declaration issued on April 23, 2007 included an (E) designation that was placed on Block 1991, Lots 2 and 3 in error, as noted in the memo to the CEQR file, dated June 15, 2007. This revised Negative Declaration eliminates the (E) designation that was inadvertently placed on Block 1991, Lots 2 and 3, which are owned by the City;
2. No significant effects on the environment which would require an Environmental Impact Statement are foreseeable; and
3. This revised Negative Declaration has been prepared in accordance with Article 8 of the Environmental Conservation Law 6NYCRR part 617.

Should you have any questions pertaining to this revised Negative Declaration, you may contact Jessica Neilan, at (212) 720-3425.



James Merani, Deputy Director
Environmental Assessment & Review Division
Department of City Planning

Date: 6/15/07



Amanda M. Burden, AICP, Chair
City Planning Commission

Date: 6/18/07