840 Atlantic Avenue Rezoning

Environmental Assessment Statement

CEQR No. 20DCP162K

Prepared for:
Vanderbilt Atlantic Holdings LLC

Prepared by:
Philip Habib & Associates

February 25, 2021

840 Atlantic Avenue Rezoning

Environmental Assessment Statement

Table of Contents

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 840 Atlantic Avenue Rezoning

1. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency)	BSA REFERENCE NUMBER (if applicable)
20DCP162K	
ULURP REFERENCE NUMBER (if applicable)	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA)
210249ZMK, 210250ZRK	

2a. *Lead Agency Information*			**2b. *Applicant Information***		
NAME OF LEAD AGENCY			NAME OF APPLICANT		
New York City Department of City Planning			Vanderbilt Atlantic Holdings LLC		
NAME OF LEAD AGENCY CONTACT PERSON			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON		
Olga Abinader, Director, Environmental Review and Assessment Division			Stefanie Marazzi, Hirschen Singer & Epstein LLP		
ADDRESS 120 Broadway, 31st Floor			ADDRESS 40 Exchange Place, Suite 1502		
CITY New York	STATE NY	ZIP 10271	CITY New York	STATE NY	ZIP 10005
TELEPHONE 212.720.3493	EMAIL oabinad@planning.nyc.gov		TELEPHONE 212.391.8045	EMAIL smarazzi@hseny.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): 6 NYCRR Part 617.4(b)(9): any Unlisted Action occurring wholly or partially within, or substantially contiguous to, any historic building, structure, site or district. The Development Site located at 840 Atlantic Avenue is directly across Pacific Street from the Prospect Heights Historic District which is a desiginated New York City Landmarks Preservation Commission (LPC) historic district as well as listed on the State and National Register of Historic Places (S/NR). The Development Site is also located across the street from the St. Joseph's R.C. Church Complex which is eligible for listing on the S/NR.

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*

Vanderbilt Atlantic Holdings LLC (the "Applicant") is seeking three discretionary zoning actions in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (the "Development SIte") (refer to Figure 1, "Project Location"). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to C6-3X; (ii) a zoning text amendment to ZR Appendix F to designate the Development Site as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall. The Applicant proposes to construct a new 18-story mixed-use building, with approximately 376,432 gross square feet (gsf)). The Proposed Development would contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. The Applicant is proposing to utilize Option 2 of the Mandatory Inclusionary Housing program by providing thirty percent of the residential floor area (equivalent to approximately 95 units) as affordable floor area for households with a weighted average of 80% of the income index.

Project Location

BOROUGH Brooklyn	COMMUNITY DISTRICT(S) 8	STREET ADDRESS 840 Atlantic Avenue
TAX BLOCK(S) AND LOT(S) Block 1122, Lots 1, 9, 10, 68, 69, 70, 71		ZIP CODE 11238
DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Atlantic Avenue, Vanderbilt Avenue, Pacific Street		
EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY M1-1; R6B		ZONING SECTIONAL MAP NUMBER 16c

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

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

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

***Board of Standards and Appeals*:** ☐ YES ☒ NO
☐ VARIANCE (use)
☐ VARIANCE (bulk)
☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:
SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

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

Other City Approvals Subject to CEQR (check all that apply)
☐ LEGISLATION ☐ FUNDING OF CONSTRUCTION, specify:
☐ RULEMAKING ☐ POLICY OR PLAN, specify:
☐ CONSTRUCTION OF PUBLIC FACILITIES ☐ FUNDING OF PROGRAMS, specify:
☐ 384(b)(4) APPROVAL ☐ PERMITS, specify:
☐ OTHER, explain:

Other City Approvals Not Subject to CEQR (check all that apply)
☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL
☐ OTHER, explain:

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

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

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

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

Physical Setting (both developed and undeveloped areas)
Total directly affected area (sq. ft.): Approximately 38,800 sf
Waterbody area (sq. ft.) and type: N/A
Roads, buildings, and other paved surfaces (sq. ft.): Approximately 38,800 sf
Other, describe (sq. ft.): N/A

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): approximately 376,432 sf
NUMBER OF BUILDINGS: 1
GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): Approx. 376,432 sf
HEIGHT OF EACH BUILDING (ft.): 205' (to the bulkhead)
NUMBER OF STORIES OF EACH BUILDING: 18

Does the proposed project involve changes in zoning on one or more sites? ☐ YES ☒ NO
If "yes," specify: The total square feet owned or controlled by the applicant:
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? ☒ YES ☐ NO
If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known):
AREA OF TEMPORARY DISTURBANCE: 38,800 sq. ft. (width x length)
VOLUME OF DISTURBANCE: TBD cubic ft. (width x length x depth)
AREA OF PERMANENT DISTURBANCE: 0 sq. ft. (width x length)

8. *Analysis Year* CEQR Technical Manual Chapter 2

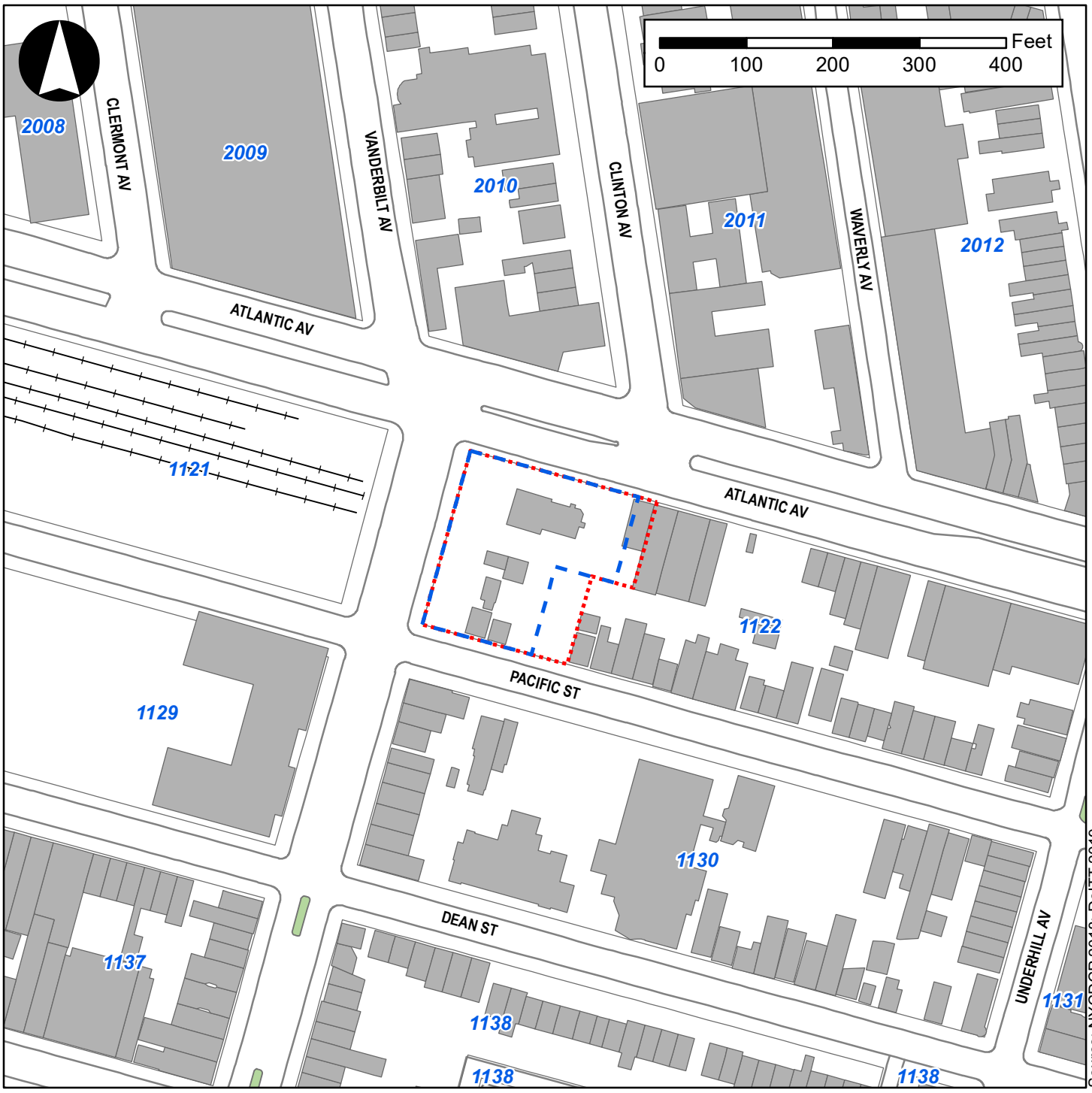
ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2023 (see Appendix C for construction schedule)

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 18 to 22 months

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

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:

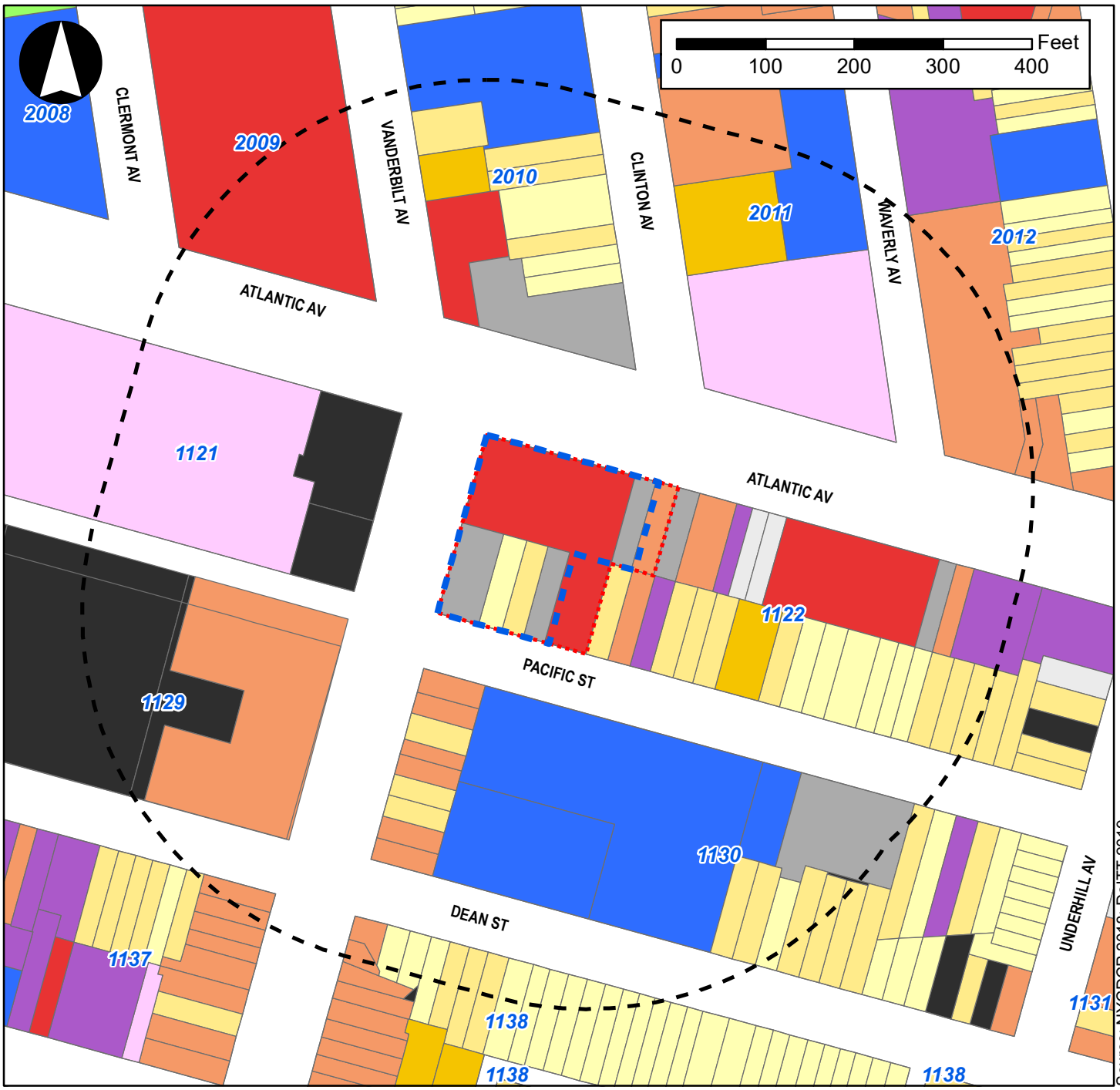
Figure 1
Project Location Map



Legend

- Rezoning Area
- Development Site
- 1130 Tax Blocks
- Existing Building Footprints
- Open Space
- Railroad Tracks

Figure 2
Land Use Map



Source: NYCDCP 2018; DoITT 2019

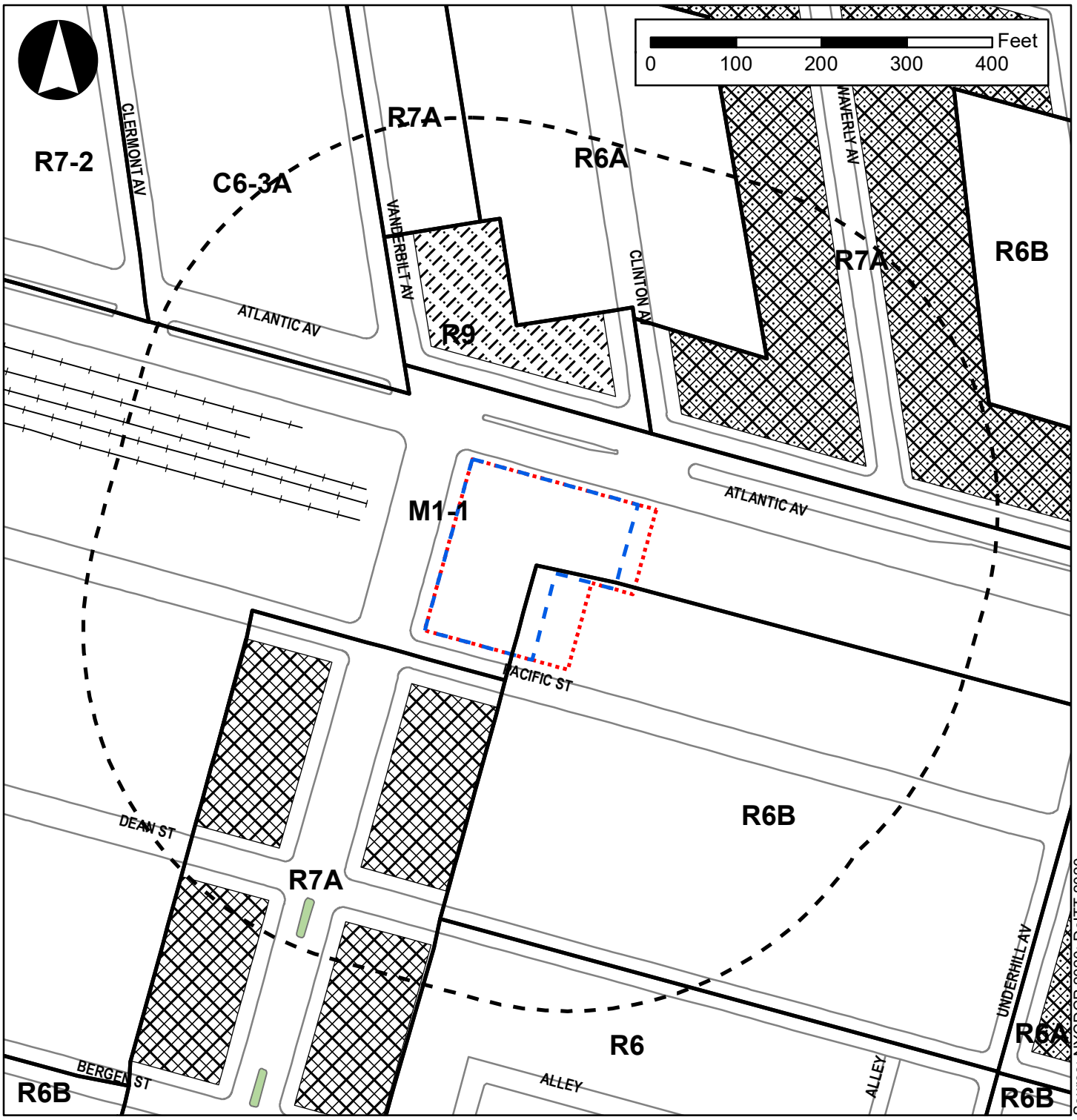
Legend

- Rezoning Area
- 400-Feet Radius
- Development Site

Land Use

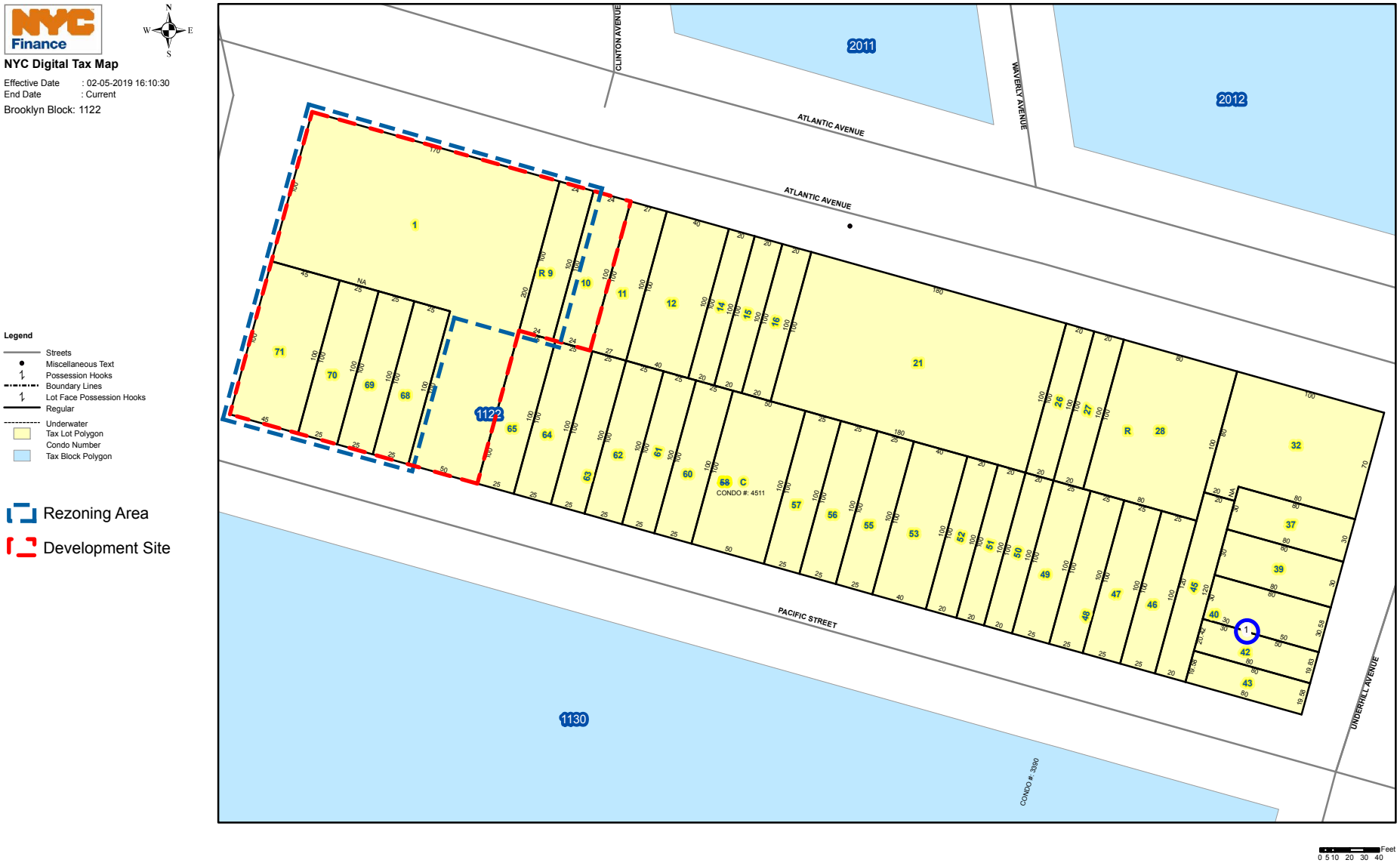
- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Buildings
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land
- All Others or No Data

Figure 3
Zoning Map



Legend

- Rezoning Area
- Development Site
- Railroad Tracks
- C1-4 Overlay
- 400-Feet Radius
- R6A Zoning District Boundaries
- Open Space
- C2-4 Overlay
- C2-5 Overlay



840 Atlantic Avenue Rezoning EAS

Figure 4
Tax Map

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

☒ RESIDENTIAL ☐ MANUFACTURING ☒ COMMERCIAL ☐ PARK/FOREST/OPEN SPACE ☒ OTHER, specify: Mixed-use commercial/residential, Public Facility & Institutional

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	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
Describe type of residential structures	Multi-family Residential	Multi-family Residential	Multi-family elevator	
No. of dwelling units	10	10	316	+306
No. of low- to moderate-income units	0	0	95 (EAS will assume 20% of DUs will be affordable (63 DUs) - see Attachment A for detailed discussion)	+95
Gross floor area (sq. ft.)	7,958	7,958	312,917	+304,959
Commercial	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
Describe type (retail, office, other)	Fast food restaurant/ground floor retail	Fast food restaurant/ground floor retail	Retail	
Gross floor area (sq. ft.)	4,793	4,793	55,715	+50,922
Manufacturing/Industrial	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ 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	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	
If "yes," specify the following:				
Type			Community Center	
Gross floor area (sq. ft.)			7,800	+7,800
Vacant Land	☒ YES ☐ NO	☒ YES ☐ NO	☐ YES ☒ NO	
If "yes," describe:	Open Storage	Open Storage		
Publicly Accessible Open Space	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify type (mapped City, State, or Federal parkland, wetland—mapped or otherwise known, other):				
Other Land Uses	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," describe:				
PARKING				
Garages	☐ YES ☒ NO	☐ YES ☒ NO	☒ YES ☐ NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces			90	+90
Operating hours			24/7	
Attended or non-attended			non-attended	
Lots	☒ YES ☐ NO	☒ YES ☐ NO	☐ YES ☒ NO	
If "yes," specify the following:				
No. of public spaces	0	0	0	
No. of accessory spaces	26	26	0	-26
Operating hours	Business hours	Business hours		

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Other (includes street parking)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," describe:				
POPULATION				
Residents	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify number:	23	23	715	+692
Briefly explain how the number of residents was calculated:	2.27 people per HH based on 2014-2018 ACS			
Businesses	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
No. and type	Fast food restaurant/local retail	Fast food restaurant/local retail	Local retail/community center	
No. and type of workers by business	15	15	190	+175
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated:	Retail: 3 employees/1,000 gsf; Community Center: 4 employees/1,000 gsf			
Other (students, visitors, concert-goers, *etc.*)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If any, specify type and number:				
Briefly explain how the number was calculated:				
ZONING				
Zoning classification	M1-1, R6B	M1-1, R6B	C6-3X; R6B	
Maximum amount of floor area that can be developed	2.0 FAR for Residential 2.4 FAR for Community Facility 1.0 FAR for Manufacturing/Commercial	2.0 FAR for Residential 2.4 FAR for Community Facility 1.0 FAR for Manufacturing/Commercial	9.7 FAR for Residential 9.0 FAR for Community Facility 6.0 FAR for Commercial; 2.0 for Residential 4.8 for Community Facility	
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Land Use: residential, commercial, institutional, and transportation. Zoning: M1-1, R6, R6A, R6B, C1-4, C2-4, C2-5, R7A, R9	Land Use: residential, commercial, institutional, and transportation. Zoning: M1-1, R6, R6A, R6B, C1-4, C2-4, C2-5, R7A, R9	Land Use: residential, commercial, institutional, and transportation. Zoning: M1-1, R6, R6A, R6B, C1-4, C2-4, C2-5, R7A, R9	
Attach any additional information that may be needed to describe the project. If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

Part II: TECHNICAL ANALYSIS

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

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

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

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

	YES	NO
percent?		
○ If "yes," are there qualitative considerations, such as the quality of open space, that need to be considered? Please specify:	☐	☐
5. *SHADOWS*: CEQR Technical Manual Chapter 8		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?	☒	☐
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	☒	☐
(c) If "yes" to either of the above questions, attach supporting information explaining whether the project's shadow would reach any sunlight-sensitive resource at any time of the year.		
6. *HISTORIC AND CULTURAL RESOURCES*: CEQR Technical Manual Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	☒	☐
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	☒	☐
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources. 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?	☒	☐
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	☐	☒
(c) If "yes" to either of the above, please provide the information requested in Chapter 10.		
8. *NATURAL RESOURCES*: CEQR Technical Manual Chapter 11		
(a) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11?	☐	☒
○ 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?	☐	☒
○ If "yes," complete the Jamaica Bay Watershed Form and submit according to its instructions.		
9. *HAZARDOUS MATERIALS*: CEQR Technical Manual Chapter 12		
(a) Would the proposed project allow commercial or residential uses in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?	☒	☐
(b) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?	☐	☒
(c) Would the project require soil disturbance in a manufacturing area or any development on or near a manufacturing area or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	☒	☐
(d) Would the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?	☐	☒
(e) Would the project result in development on or near a site that has or had underground and/or aboveground storage tanks (*e.g.*, gas stations, oil storage facilities, heating oil storage)?	☐	☒
(f) Would the project result in renovation of interior existing space on a site with the potential for compromised air quality; vapor intrusion from either on-site or off-site sources; or the presence of asbestos, PCBs, mercury or lead-based paint?	☐	☒
(g) Would the project result in development on or near a site with potential hazardous materials issues such as government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, coal gasification or gas storage sites, railroad tracks or rights-of-way, or municipal incinerators?	☐	☒
(h) Has a Phase I Environmental Site Assessment been performed for the site?	☒	☐
○ If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: See Attachment I	☐	☐
(i) Based on the Phase I Assessment, is a Phase II Investigation needed?	☒	☐
10. *WATER AND SEWER INFRASTRUCTURE*: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	☐	☒
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	☐	☒

	YES	NO
(c) If the proposed project located in a separately sewered area, would it result in the same or greater development than that listed in Table 13-1 in Chapter 13?	☐	☒
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	☐	☒
(e) If the project is located within the Jamaica Bay Watershed or in certain specific drainage areas, including Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	☐	☒
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	☐	☒
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or contribute contaminated stormwater to a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
(i) If "yes" to any of the above, conduct the appropriate preliminary analyses and attach supporting documentation.		
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): 23,173 lbs/week (net)		
○ Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	☐	☒
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	☐	☒
○ If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	☐	☐
12. *ENERGY*: CEQR Technical Manual Chapter 15		
(a) Using energy modeling or Table 15-1 in Chapter 15, the project's projected energy use is estimated to be (annual BTUs): 51,608,194 BTU (net)		
(b) Would the proposed project affect the transmission or generation of energy?	☐	☒
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☒	☐
(b) If "yes," conduct the appropriate screening analyses, attach back up data as needed for each stage, and answer the following questions:		
○ Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	☒	☐
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.*	☐	☒
○ Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	☐	☒
If "yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway/rail trips per station or line?	☐	☐
○ Would the proposed project result in more than 200 pedestrian trips per project peak hour?	☒	☐
If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	☒	☐
14. *AIR QUALITY*: CEQR Technical Manual Chapter 17		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☒	☐
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☒	☐
○ If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed)	☒	☐
(c) Does the proposed project involve multiple buildings on the project site?	☐	☒
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	☐	☒
(e) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	☐	☒
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. See Attachment K		
15. *GREENHOUSE GAS EMISSIONS*: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	☐	☒
(b) Would the proposed project fundamentally change the City's solid waste management system?	☐	☒
(c) Would the proposed project result in the development of 350,000 square feet or more?	☐	☒
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18?	☐	☐

	YES	NO
○ If "yes," would the project result in inconsistencies with the City's GHG reduction goal? (See Local Law 22 of 2008; § 24-803 of the Administrative Code of the City of New York). Please attach supporting documentation.	☐	☐
16. *NOISE*: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	☒	☐
(b) Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?	☒	☐
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	☐	☒
(d) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	☐	☒
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. See Attachment L		
17. *PUBLIC HEALTH*: CEQR Technical Manual Chapter 20		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☒	☐
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach a preliminary analysis, if necessary. As discussed in the EAS, the Proposed Project would not result in significant adverse Air Quality, Hazardous Materials, or Noise impacts. Therefore, an assessment of public health is not warranted.		
18. *NEIGHBORHOOD CHARACTER*: CEQR Technical Manual Chapter 21		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; Transportation; Noise?	☒	☐
(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary. The Proposed Project does not have the potential to result in significant adverse impacts to land use, zoning, and public policy, socioeconomic conditions, open space, historic and cultural resources, urban design and visual resources, shadows, transportation, or noise. Nor would the Proposed Project result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character. Therefore, an assessment of neighborhood character is not warranted.		
19. *CONSTRUCTION*: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
○ Construction activities lasting longer than two years?	☐	☒
○ Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	☒	☐
○ Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, *etc.*)?	☒	☐
○ Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	☐	☒
○ The operation of several pieces of diesel equipment in a single location at peak construction?	☐	☒
○ Closure of a community facility or disruption in its services?	☐	☒
○ Activities within 400 feet of a historic or cultural resource?	☒	☐
○ Disturbance of a site containing or adjacent to a site containing natural resources?	☐	☒
○ Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	☐	☒
(b) If any boxes are checked "yes," explain why a preliminary construction assessment is or is not warranted based on the guidance in Chapter 22, "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination. Development of the Proposed Project may result in temporary disruptions including noise, dust and traffic associated with the delivery of materials and arrival of workers to the site. These effects, however, would be temporary and are therefore not considered significant.		

20. *APPLICANT'S CERTIFICATION*

I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of the pertinent books and records and/or after inquiry of persons who have personal knowledge of such information or who have examined pertinent books and records.

Still under oath, I further swear or affirm that I make this statement in my capacity as the applicant or representative of the entity that seeks the permits, approvals, funding, or other governmental action(s) described in this EAS.

APPLICANT/REPRESENTATIVE NAME	SIGNATURE	DATE
Christina Szczepanski, PHA		2/25/2021

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

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

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

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

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

2. Are there any aspects of the project relevant to the determination of whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials? ☐ ☒

If there are such impacts, attach an explanation stating whether, as a result of them, the project may have a significant impact on the environment.

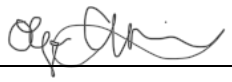
☐ **3.** Check determination to be issued by the lead agency:

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

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

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

4. *LEAD AGENCY'S CERTIFICATION*

TITLE	LEAD AGENCY
Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME: Olga Abinader	DATE: February 26, 2021
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, the Department of City Planning, acting on behalf of the City Planning Commission assumed the role of lead agency for the environmental review of the proposed project. Based on a review of information about the project contained in this environmental assessment statement and any attachments hereto, which are incorporated by reference herein, the lead agency has determined that the proposed project would not have a significant adverse impact on the environment.

Reasons Supporting this Determination

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

Land Use, Zoning, and Public Policy: A detailed analysis of land use, zoning, and public policy is included in this EAS. The Applicant, Vanderbilt Atlantic Holdings LLC, is seeking three discretionary actions (the "Proposed Actions") in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71) in the Prospect Heights neighborhood of Brooklyn, Community District 8 (the "Development Site"). The Proposed Actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to a C6-3X district; (ii) a zoning text amendment to Zoning Resolution ("ZR") Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing area; and (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall in Brooklyn Community District 8.
The Proposed Actions would not result in land uses that conflict with public policies applicable to the primary or secondary study area. While the proposed C6-3X district would permit development at a greater density than permitted under the existing or No- Action condition, the proposed rezoning area's location along Atlantic Avenue, Vanderbilt Avenue, and Pacific Street, with excellent public transit service, is well-suited for additional development. In addition, the proposed zoning district would activate the street and allow a consistent streetwall, retail continuity, and serve local residents. A portion of the existing R6B zoning district would remain in the With-Action condition, which would create a transition of scale within the Development Site between the larger-scale C6-3X and the lower-scale context in the midblock area. As such, the Proposed Actions would not result in significant adverse impacts to zoning. Additionally, The Proposed Project would be compatible and consistent with the public policies that currently apply to the Development Site and the surrounding area, including Housing New York, OneNYC and the FRESH program. Therefore, the Proposed Actions would not have the potential to result in significant adverse impacts related to land use, zoning, and public policy.

Open Space : A detailed analysis of open space is included in this EAS. The preliminary assessment shows that the Proposed Actions under Development Scenario 1 would decrease the open space ratio by 1.2 percent in the study area, while the Proposed Action under Development Scenario 2 would decrease the combined residential and non-residential open space ratio by 2.41 percent. These decreases both fall below the threshold of five percent for a more detailed analysis. Nevertheless, a detailed analysis was conducted. The detailed analysis finds that while open space ratios would remain less than the City's community district median and the City's planning goals, the deficiency in open space resources would be ameliorated by several factors. All of the study area's open space resources were found to be in excellent or good condition. In addition, a majority of the open spaces have only low or moderate utilization levels and would be able to absorb additional users. Moreover, a wide variety of active and passive open space uses are available, ranging from areas with passive uses, such as plazas containing walkways, benches, and game tables, to active uses, such as playgrounds, spray showers, multiple basketball and handball courts, and several synthetic turf fields. Additionally, the proximity of Prospect Park, which is located adjacent to the southern boundary of the study area, to the South of Grand Army Plaza, and Fort Greene Park, which is located roughly three blocks to the west of the northern boundary of the study area, provide ample amounts of open space recreation and are destination resources. Therefore, the Proposed Actions would not have the potential to result in significant adverse impacts related to open space.

Shadows: A detailed analysis of shadows is included in this EAS. The analysis finds that the Proposed Action would result in incremental shadow on portions of one sunlight-sensitive historic resource: The Church of St. Luke and St. Matthew. The incremental shadow would last for two hours and four minutes, from 10:14 AM to 12:18 PM on the December 21st Analysis Day, the other three Analysis Days would not contain incremental shadow. The extent and duration of the incremental shadow would not significantly reduce or completely eliminate direct sunlight exposure on any of the historic resource's sunlight-sensitive features and would not significantly alter the public's utilization or enjoyment of the historic resource's sunlight-sensitive features. Therefore, the Proposed Actions would not have the potential to result in significant adverse impacts related to shadows.

Historic and Cultural Resources: A detailed analysis related to Historic and Cultural Resources is included in this EAS. The Development Site is located immediately adjacent to the Prospect Heights Historic District to the south, and the S/NR Listed and LPC-designated Church of St. Luke and St. Matthew is also within the study area, as well as several S/NR eligible buildings. The detailed analysis finds that while the Proposed Actions would facilitate the construction of a new building just north of the S/NR listed and LPC-designated Prospect Heights Historic District, this change would not be significant or adverse. The Proposed Development would be visible when looking north from points along Vanderbilt Avenue in the historic

district, however, the portion of the Development Site immediately adjacent to the historic district would rise to four stories, reflecting the lower heights of the historic neighborhood. The Proposed Development would not detract from surrounding historic buildings or diminish the qualities that make the surrounding designated and eligible resources historically and/or architecturally significant. Additionally, and as the Shadows determination notes above, the incremental shadow produced by the Proposed Actions would be cast on the Church of St. Luke and St. Matthew, however, this would not alter utilization or enjoyment of the sunlight-sensitive features of the resource. Finally, the Proposed Development would include a Construction Protection Plan in order to protect adjacent historic resources from potential damage. The Construction Protection Plan would be developed in consultation with LPC and would take into account guidance provided in the CEQR Technical Manual as well as requirements laid out in The Department of Buildings TPPN #10/88. TPPN #10/88 supplements the standard measures afforded by the Building Code, including, among other measures, a Construction Monitoring Plan. Accordingly, the Proposed Actions would not have the potential to result in significant adverse impacts related to historic and cultural resources.

Urban Design and Visual Resources: A detailed analysis of urban design and visual resources is included in this EAS. The analysis finds that the additional height and density on the Development Site would be consistent with the existing and emerging built environment of the Study Area. There is a considerable amount of new development in the area, including a number of high-rise buildings. The Proposed Development would be in keeping with this trend, and as such, the Proposed Development would not significantly alter the visual setting and historic context of the nearby Prospect Heights Historic District or other surrounding historic landmarks. Further, the Proposed Development would not significantly obstruct view corridors in the surrounding area. Existing views of the Church of St. Luke and St. Matthew's bell tower from Pacific Street, and the Telephone Building from Atlantic Avenue and Pacific Street would be obstructed by the Proposed Development, however, other views of these resources exist from adjacent public streets and sidewalks. Accordingly, the Proposed Actions would not have the potential to result in significant adverse impacts related to urban design and visual resources.

Hazardous Materials, Air Quality, and Noise: An (E) Designation (E-604) related to hazardous materials, air quality, and noise would be established as part of the approval of the Proposed Actions. Refer to "Determination of Significance Appendix: (E) designation" for the applicable (E) designation requirements. The hazardous materials, air quality, and noise analyses conclude that with this measure in place, the Proposed Actions would not result in significant adverse impacts related hazardous materials, air quality, or noise.

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
Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME	DATE
Olga Abinader	2/26/2021
SIGNATURE	

TITLE	
Chair, Department of City Planning	
NAME	DATE
Marisa Lago	3/1/2021
SIGNATURE	

Project Name: 840 Atlantic Rezoning
CEQR Number: 20DCP162K
SEQRA Classification: Type I

Appendix 1: (E) Designations

To ensure that there would be no significant adverse hazardous materials, air quality or noise impacts associated with the proposed project, an E designation (E-604) will be placed on the project sites as follows:

The E designation requirements related to hazardous materials, air quality, and noise would apply to:

Projected Development Site 1:
Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71.

Hazardous Materials

Task 1: Sampling Protocol

Prior to construction, the applicant must submit to the New York City Mayor's Office of Environmental Remediation (OER), for review and approval, a Phase II Investigation protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented.

No sampling should begin until written approval of a protocol is received by OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2: Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated for the test results, a proposed remedial action plan (RAP) must be submitted by OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation that the work has been satisfactorily completed.

An OER-approved construction-related health and safety plan (CHASP) would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

Project Name: 840 Atlantic Rezoning
CEQR Number: 20DCP162K
SEQRA Classification: Type I

Air Quality

Any new residential, commercial and/or community facility development on the above-referenced property must exclusively use natural gas as the type of fuel for heating, ventilating and air conditioning (HVAC) systems and hot water equipment, and must ensure the HVAC system and hot water equipment stack is located within Lot 1 at the highest tier and at least 208 feet above grade, at least 24 feet from the southern lot line facing Pacific Street, at least 60 feet from the western lot line facing Vanderbilt Ave, and at least 74 feet from the northern lot line facing Atlantic Ave, to avoid any potential significant adverse air quality impacts.

Noise

In order to ensure an acceptable interior noise environment, future residential/commercial office/community facility uses must provide a closed-window condition with a minimum of 31 dBA window/wall attenuation on the facades facing Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Atlantic Avenue and the facades facing Vanderbilt Avenue within 50 feet of Atlantic Avenue and 28 dBA attenuation on the facades facing Pacific Street and the facades facing Vanderbilt Avenue beyond 50 feet of Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Pacific Street to maintain an interior noise level not greater than 45 dBA for residential and community facility uses or not greater than 50 dBA for commercial office uses as illustrated in the EAS. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

I. INTRODUCTION

Vanderbilt Atlantic Holdings LLC (the "Applicant") is seeking three discretionary zoning actions in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (the "Development Site") (refer to **Figure A-1**, "Project Location"). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to C6-3X district; (ii) a zoning text amendment to Zoning Resolution ("ZR") Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall in Brooklyn Community District 8. Collectively, the zoning map amendment and the zoning text amendments are the "Proposed Actions" for the purposes of the environmental analysis.

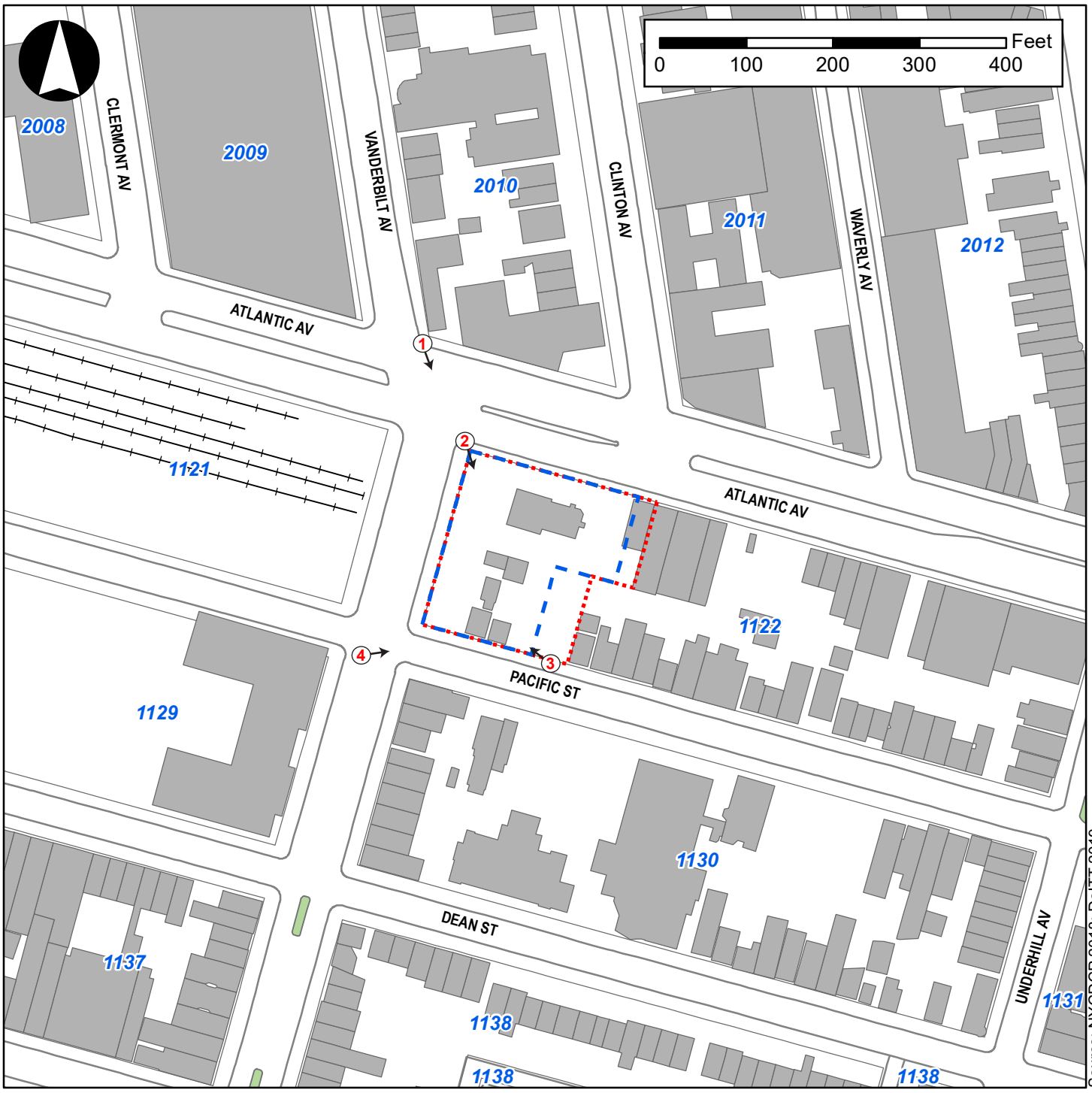
As shown in **Figure A-2**, "Tax Map," the proposed rezoning area would encompass the entirety of Lots 9, 68, 69, 70, 71 and a portion of Lots 1 and 10 on Brooklyn Block 1122. The total area of the Development Site is 38,800 square feet (sf). The proposed rezoning area comprises approximately 32,500 sf of lot area bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. The portion of the Development Site fronting on Pacific Street (the easternmost portion, 30 feet in width) will remain zoned R6B (approximately 4,500 sf). A small portion of the existing M1-1 zoning district (approximately 1,800 sf) would remain (approximately 20 feet of frontage along Atlantic Avenue). Although this portion of the Development Site would fall outside the rezoning area boundary and remain within the M1-1 district, it would be subject to the "25-foot rule" for split lots.[1] As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area.

In the future with the Proposed Actions, the Applicant proposes to construct a new 18-story (195-foot tall) mixed-use building, with approximately 376,432 gross square feet (gsf)). The Proposed Development would contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site, as the Applicant would provide affordable housing equivalent to 30 percent of the residential floor area pursuant to MIH Option 2.

However, while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) will be considered for conservative analysis purposes. As the Proposed

[1] As outlined in Zoning Resolution Section 77-11, the "25 Foot Rule" applies to a zoning lot split between two or more zoning districts that permit different uses and bulk regulations when the width of one district on the zoning lot measures 25 feet or less at every point.

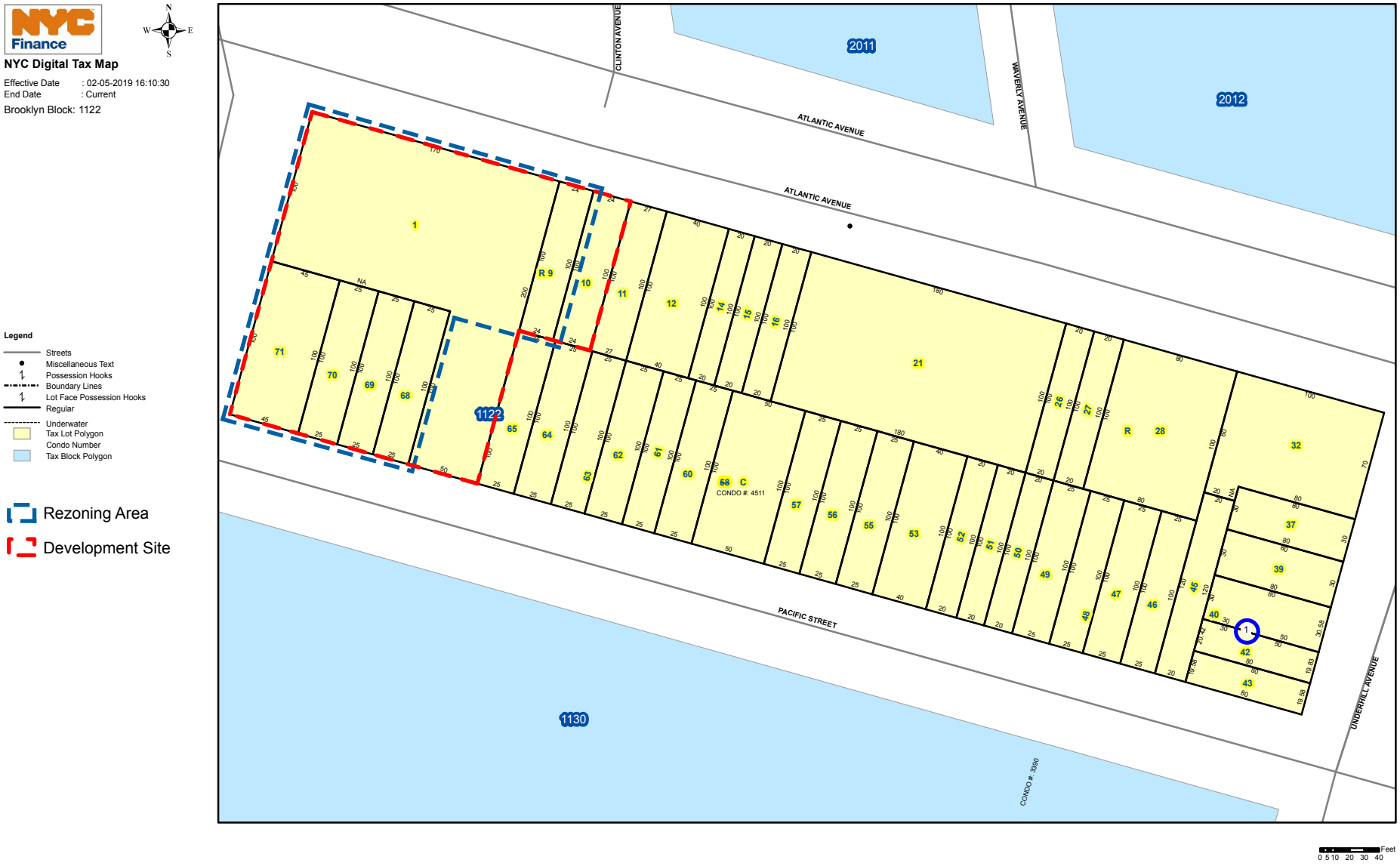
Figure A-1
Project Location Map



Source: NYCDCP 2018; DoITT 2019

Legend

- Rezoning Area
- Development Site
- 1130 Tax Blocks
- 1 → Photo Locations (refer to Figure A-4)
- Existing Building Footprints
- Open Space
- Railroad Tracks



840 Atlantic Avenue Rezoning EAS

Figure A-2
Tax Map

Actions would permit a greater commercial FAR than the existing zoning permits, an alternate commercial With-Action RWCDS option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet. The total floor area ratio (FAR) for the alternate commercial RWCDS would be 5.52, which would be the maximum FAR under the proposed C6-3X and R6B zoning ("Scenario 2").

The Environmental Assessment Statement (EAS) will analyze whichever scenario presents the worst case for each technical area.

II. EXISTING CONDITIONS

Proposed Rezoning Area / Applicant-Owned Proposed Development Site

The Applicant-owned Development Site at 840 Atlantic Avenue (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) is an irregularly-shaped lot with approximately 218 feet of frontage along Atlantic Avenue, approximately 200 feet of frontage along Vanderbilt Avenue, and approximately 170 feet of frontage along Pacific Street). The approximately 38,800 sf Development Site is currently zoned M1-1 and R6B (see **Figure A-3**, "Zoning Map"). As shown in **Figure A-4**, "Existing Conditions Photos," the Development Site contains a fast food establishment with a drive-through and parking lot fronting on Atlantic Avenue and Vanderbilt Avenue on Tax Lot 1. Tax Lot 9, fronting on Atlantic Avenue, is a vacant lot utilized as open storage. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings, flanked on each side by vehicular entrances to the fast food establishment parking lot. Lot 68, fronting on Pacific Street, is vacant and currently utilized as open storage.

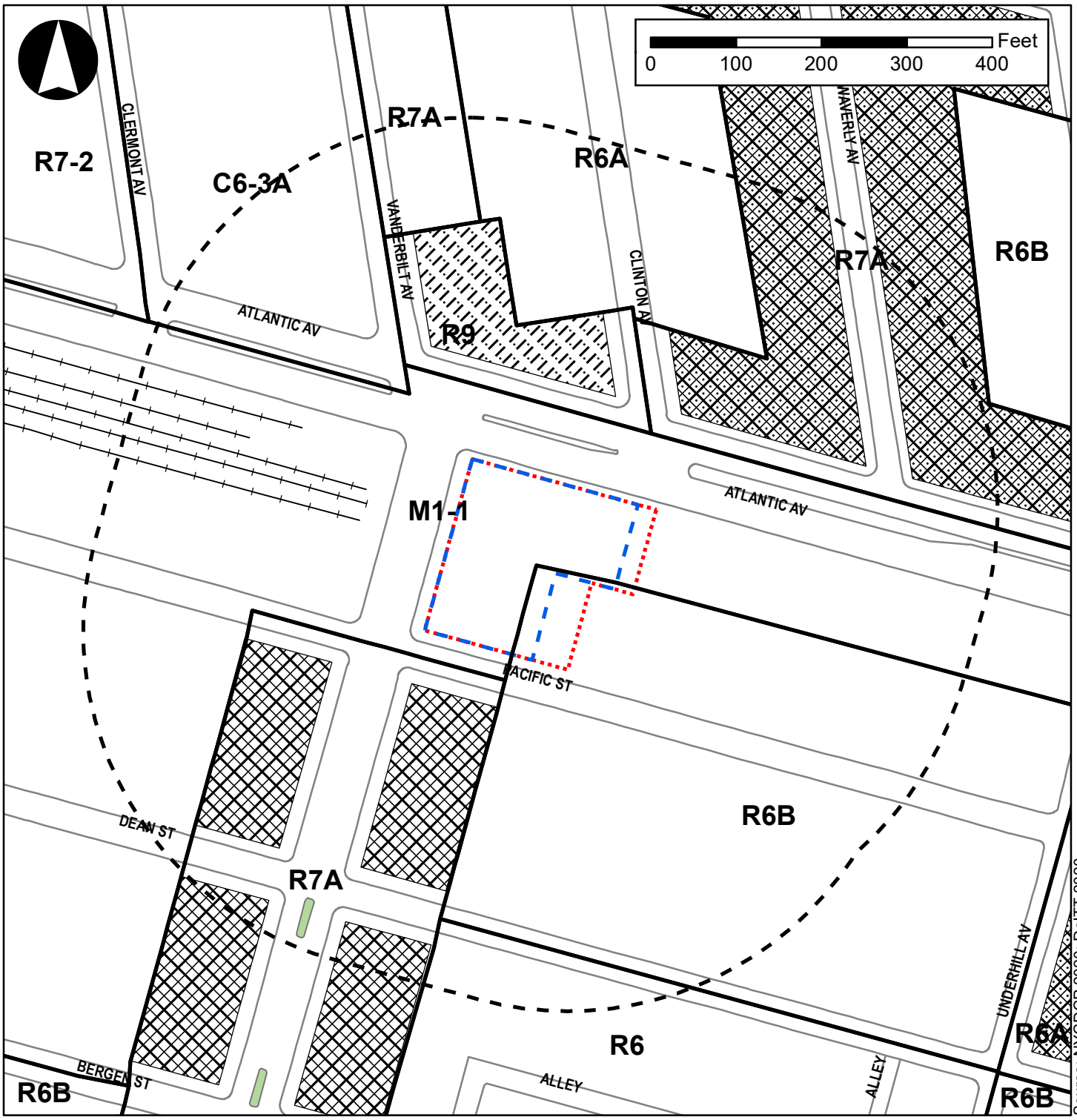
Surrounding Area and Context

The proposed rezoning area is located in the Prospect Heights neighborhood of Brooklyn Community District 8. The remainder of Block 1122 is also zoned M1-1 and R6B (see **Figure A-3**), and the surrounding area within an approximate 400-foot radius is predominately zoned R6A, R6B, R7A, and R9; a C6-3A commercial district is located north west of the Development Site along Atlantic Avenue, between Vanderbilt and Clermont Avenues. As shown in **Figure A-3**, C2-4 commercial overlays are mapped along Atlantic Avenue adjacent to the north of the subject block, as well as along Washington Avenue to the east of Underhill Avenue; a C1-4 commercial overlay is mapped along Vanderbilt Avenue to the south of the proposed rezoning area.

The northern portion of Block 1122 is occupied mostly by one and two-story commercial and auto use structures fronting on Atlantic Avenue. The northeastern corner of the block contains a CubeSmart self-storage facility. The remainder of Block 1122 contains mostly 3- to 4-story multi-unit residential buildings.

As shown in **Figure A-5**, land uses within an approximate 400-foot radius consist of a mix of residential, commercial, transportation, and institutional uses.

Figure A-3
Zoning Map



Legend

- Rezoning Area
- Development Site
- Railroad Tracks
- C1-4 Overlay
- 400-Feet Radius
- R6A Zoning District Boundaries
- Open Space
- C2-4 Overlay
- C2-5 Overlay

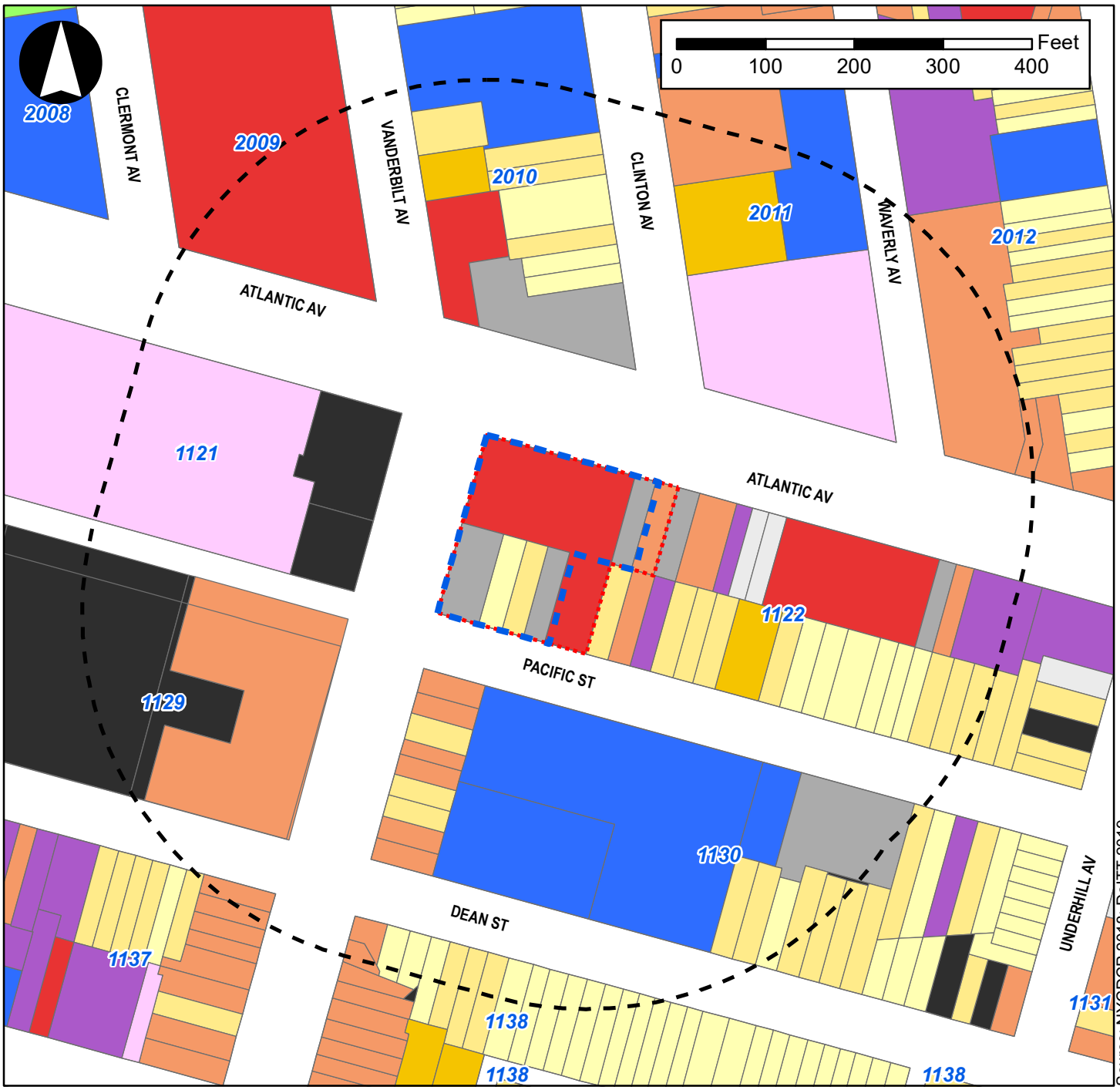
1. View of Development Site looking south from Atlantic Avenue and Vanderbilt Avenue

2. View of Development Site looking southeast from Atlantic Avenue and Vanderbilt Avenue

3. View of Development Site looking northwest from Pacific Street

4. View of Development Site looking northeast from Pacific Street and Vanderbilt Avenue

Figure A-5
Land Use Map



Legend

- Rezoning Area
- 400-Feet Radius
- Development Site

Land Use

- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Buildings
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land
- All Others or No Data

The area to the north of Atlantic Avenue generally consists of three to four-story residential walkup buildings, a school building controlled by the New York City Department of Education (DOE) that is currently in use by a special-needs school, and the private sports field for Brooklyn Technical High School. The Church of St. Luke and St. Matthew, a New York City Landmark (NYCL) designated by the New York City Landmarks Preservation Commission (LPC) in 1981 is also located to the north of the Development Site at 520 Clinton Avenue.

Directly to the south of the Development Site are three- to five-story residential buildings and some institutional uses, including schools (P.S. 9 Teunis G. Bergen School and St. Joseph's High School) and churches such as the Co-Cathedral of St. Joseph and Our Lady of Good Counsel Church. Commercial uses, in particular ground-floor retail, are located along Atlantic Avenue, Vanderbilt Avenue, and Washington Avenue.

The Prospect Heights Historic District is located directly to the south of the Development Site, across Pacific Street. The historic district, was designated by the New York Landmarks Preservation Commission (LPC) in 2009, and is also listed on the State and National Registers (S/NR). The historic district includes approximately 850 buildings, most of which are single-family row houses and apartment buildings, largely constructed between the 1860s and 1910s. The area also encompasses some significant institutional buildings, constructed to accommodate the burgeoning residential neighborhood in the late-19th and early-20th centuries. Prospect Heights retains some of Brooklyn's most well-preserved residential streetscapes featuring a variety of architectural styles, including Italianate, Neo-Grec, Queen Anne, Romanesque, and Renaissance Revival styles. Most of the buildings along Vanderbilt Avenue also contain ground-floor retail space, reflecting the avenue's development as one of Prospect Height's most important commercial thoroughfares.

The area to the west of the Development Site includes the Atlantic Yards railyard, which is currently being developed as a large-scale residential and commercial project (known as Pacific Park), which has a target completion date of 2035. These new residential buildings would be approximately 25 to 27 stories tall, and would also include commercial uses and open spaces. Two of the buildings (550 Vanderbilt Avenue and 535 Carlton Avenue) have been recently completed; several of the other buildings are currently in the beginning stages of construction and are expected to be completed by the Proposed Actions' analysis year of 2023.

III. DESCRIPTION OF THE PROPOSED ACTIONS

The Applicant is seeking two New York City Planning Commission (CPC) zoning actions: a zoning map amendment and a zoning text amendment. The Proposed Actions are both discretionary actions that are subject to the Uniform Land Use Review Procedure (ULURP). The Proposed Actions are also subject to environmental review under the City Environmental Quality Review (CEQR) process.

Zoning Map Amendment

As shown in **Figure A-3**, the zoning map amendment would rezone a portion of Brooklyn Block 1122, from M1-1 and R6B zoning districts to a C6-3X zoning district. The proposed rezoning area comprises approximately 32,500 sf of lot area bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. The proposed C6-3X district would extend 200 feet along Atlantic Avenue, 200 feet along Vanderbilt Avenue, and 125 feet along Pacific Street. The portion of the Development Site fronting on Pacific Street (the easternmost portion, 45 feet in width) will remain zoned

R6B (approximately 4,500 sf). A small portion of the existing M1-1 zoning district (approximately 1,800 sf) would remain (approximately 20 feet of frontage along Atlantic Avenue). Although this portion of the Development Site would fall outside the rezoning area boundary and remain within the M1-1 district, it would be subject to the "25-foot rule" for split lots.[2] As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area. It should be noted that there are no existing C6-3X districts currently mapped in Brooklyn.

C6-3X districts provide a maximum allowable floor area ratio (FAR) of 9.7 for residential uses (with the Mandatory Inclusionary Housing bonus), 9.0 for community facility uses, and 6.0 for commercial uses. Additionally, C6-3X districts permit a maximum building height of 195 feet on a narrow street and 205 feet on a wide street, and mandate Quality Housing bulk regulations. Accessory parking is required for 40 percent of market-rate residential units. However, as the Development Site is located within a Transit Zone (as defined in Appendix I of the Zoning Resolution), no accessory parking is required for income-restricted housing units.

Table A-1 compares the use and bulk requirements under the existing and proposed zoning districts.

TABLE A-1: Comparison of Existing and Proposed Zoning

	Existing Zoning	Proposed Zoning
Zoning District	**R6B; M1-1**	**C6-3X[2]**
Use Groups	R6B: UG 1-4 [1] ; M1-1: UG 4-14, 16,17	UG 1-9, 14
Maximum FAR		
Residential	2.0	9.7
Community Facility	2.4	9.0
Commercial	1.0	6.0
Manufacturing	1.0	0.0
Max. Building Height	R6B: Quality Housing – max. bldg. height 55' M1-1: sky exposure plane	Commercial – sky exposure plane Residential – Max. bldg. height of 195'

Source: *Zoning Resolution of the City of New York.* Information shown is for areas outside the Manhattan Core.
Notes:
[1] With some limitations
[2] A portion of the existing R6B zoning district would remain (approximately 4,500 sf of the Development Site).

Zoning Text Amendments

The Applicant is proposing to map the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area (Options 1 or 2) by creating a new map for Brooklyn Community District 8 in Appendix F of the New York City Zoning Resolution. An MIH Area requires affordable housing to be provided equivalent to either 25 percent (60% of Area Median Income, or AMI) or 30 percent (80% AMI) of the residential floor area developed. The MIH Area sets a new maximum permitted residential FAR which supersedes the FAR permitted by the underlying zoning district. With both the designation of the proposed rezoning area as an MIH Area and its rezoning to C6-3X, the maximum permitted FAR within the proposed rezoning area would be 9.7, and the maximum permitted building height would be 195 feet. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site, as

[2] As outlined in Zoning Resolution Section 77-11, the "25 Foot Rule" applies to a zoning lot split between two or more zoning districts that permit different uses and bulk regulations when the width of one district on the zoning lot measures 25 feet or less at every point.

the Applicant would provide affordable housing equivalent to 30 percent of the residential floor area pursuant to MIH Option 2.

The Applicant is also proposing a zoning text amendment to create a new Section 35-662 in the ZR that would apply special street wall regulations to C6-3X districts in Community District 8 in Brooklyn. This proposed zoning text amendment would allow provision of wider sidewalks along Atlantic Avenue than would be permitted without the text amendment. The existing widths of the sidewalks are 12 feet on Atlantic Avenue, 21 feet on Vanderbilt Avenue, and 18 feet on Pacific Street. The 12-foot sidewalk width on Atlantic Avenue is narrow and would result in a poor streetscape condition, considering Atlantic Avenue is 120 feet wide, and the Proposed Development will have 18-stories. Therefore, the Applicant proposes to create ZR Section 35-662 to allow the street wall to be set back from the street line by up to 8 feet for 70% of the aggregate width of the street walls, for developments in C6-3X zoning districts in Community District 8 in the Borough of Brooklyn.

IV. PURPOSE AND NEED OF THE PROPOSED ACTIONS

The proposed zoning map amendment to rezone a portion of Brooklyn Block 1122 from R6B and M1-1 to C6-3X, combined with the proposed text amendment, would increase the permitted residential and commercial FAR. The rezoning area is currently within existing R6B and M1-1 zoning districts and is not within an Inclusionary Housing designated area. The existing zoning M1-1 zoning permits a maximum 2.4 FAR for community facility uses, 1.0 FAR for commercial uses, and 1.0 FAR for manufacturing uses. The existing R6B zoning district permits a maximum of 2.0 FAR for residential uses and 2.0 for community facility uses. Further, the R6B portion of the Development Site that would remain would provide a transition of scale between the larger-scale proposed C6-3X and the existing lower-scale context in the midblock area.

The proposed zoning text amendment to ZR Appendix F, which would designate the Development Site as an MIH Area, would require the Applicant to construct affordable DUs on the Development Site in order to take advantage of the additional FAR provided through the MIH Program. Therefore, the Proposed Actions would create new affordable housing in the proposed rezoning area, helping to address affordable housing goals set forth by the City in *Housing New York: A Five-Borough, Ten-Year Plan.*

The proposed zoning text amendment to create a new Section 35-662 in the ZR, which would apply special street wall regulations to C6-3X districts in Community District 8 in Brooklyn, would allow provision of wider sidewalks along Atlantic Avenue than would be permitted without the text amendment. Without the text amendment, the C6-3X street wall regulations in ZR 35-651(b)(1) require the street wall for a development to be located on the street line, and street wall setbacks to accommodate a sidewalk widening are not permitted. Street wall setbacks are permitted for continuous sidewalk widenings provided along the entire block frontage of the street, such as a sidewalk widening along the Vanderbilt Avenue street wall of the Development Site. However, street wall setbacks are not permitted along the Atlantic Avenue and Pacific Street street walls of the Development Site pursuant to ZR 35-651(b)(1), which applies to developments in C6-3X zoning districts. By permitting a wider sidewalk, it would create a safer condition with increased space for pedestrians.

In addition, the proposed C6-3X district would permit commercial uses at up to 6.0 FAR at the Development Site. The Applicant feels the proposed district would be consistent with the existing uses in

the immediate vicinity of the proposed rezoning area, where Atlantic and Vanderbilt Avenues serve as an active commercial corridor lined with a number of retail and other commercial uses.

As such, the proposed zoning map and text amendments would create additional zoning capacity in a transit accessible area to support new housing creation and also increase the number of affordable housing units available in New York City. The creation of new housing supply at various income levels is also expected to help alleviate the upward pressure on housing prices, and contribute to housing affordability in the surrounding neighborhood and larger City. The MIH program would promote and retain neighborhood economic diversity in the area and create new housing units, including affordable units, in close proximity to public transit, and local bus routes traveling on both Atlantic Avenue and Vanderbilt Avenue in the vicinity of the Development Site.

V. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Applicant owns the Development Site at 840 Atlantic Avenue (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, 71). With approval of the Proposed Actions, the Applicant intends to redevelop the site with an 18-story (195-foot tall; 205 feet to the bulkhead) building, with approximately 376,432 gross square feet (gsf)) (See **Figure A-6** for Illustrative Rendering). The Proposed Development will contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site, as the Applicant would provide affordable housing equivalent to 30 percent of the residential floor area pursuant to MIH Option 2.

As shown in **Figure A-7**, "Ground Floor Plan," it is anticipated that the entrance to the residential and component of the proposed building would be located on Vanderbilt Avenue. The commercial entrance would be located on Atlantic Avenue, while the community facility entrance would be located along Pacific Street. Access to the below-grade parking garage would be provided via a curb-cut on Pacific Street.

As shown in **Figure A-8,** the proposed building's mass would be centered on Atlantic Avenue, with a series of step-downs as the building mass moves towards the midblock of Pacific Street. The building would be setback above the seventh story along Vanderbilt Avenue and the corner with Pacific Street, and the midblock portion of the building fronting Pacific Street would rise to four stories, reflecting the lower heights of the adjacent historic neighborhood.

As shown in **Table A-2** below, the Applicant's proposed development would have a built FAR of 8.83, which is the maximum development under the Development Site's blended FAR in the future with the Proposed Actions. As the proposed development maximizes the FAR and permitted building height (195 feet; 205 feet to the bulkhead), it is considered the RWCDS for the Applicant-owned Development Site in the future with the Proposed Actions.

Figure A-6
Illustrative Rendering of the Proposed Development

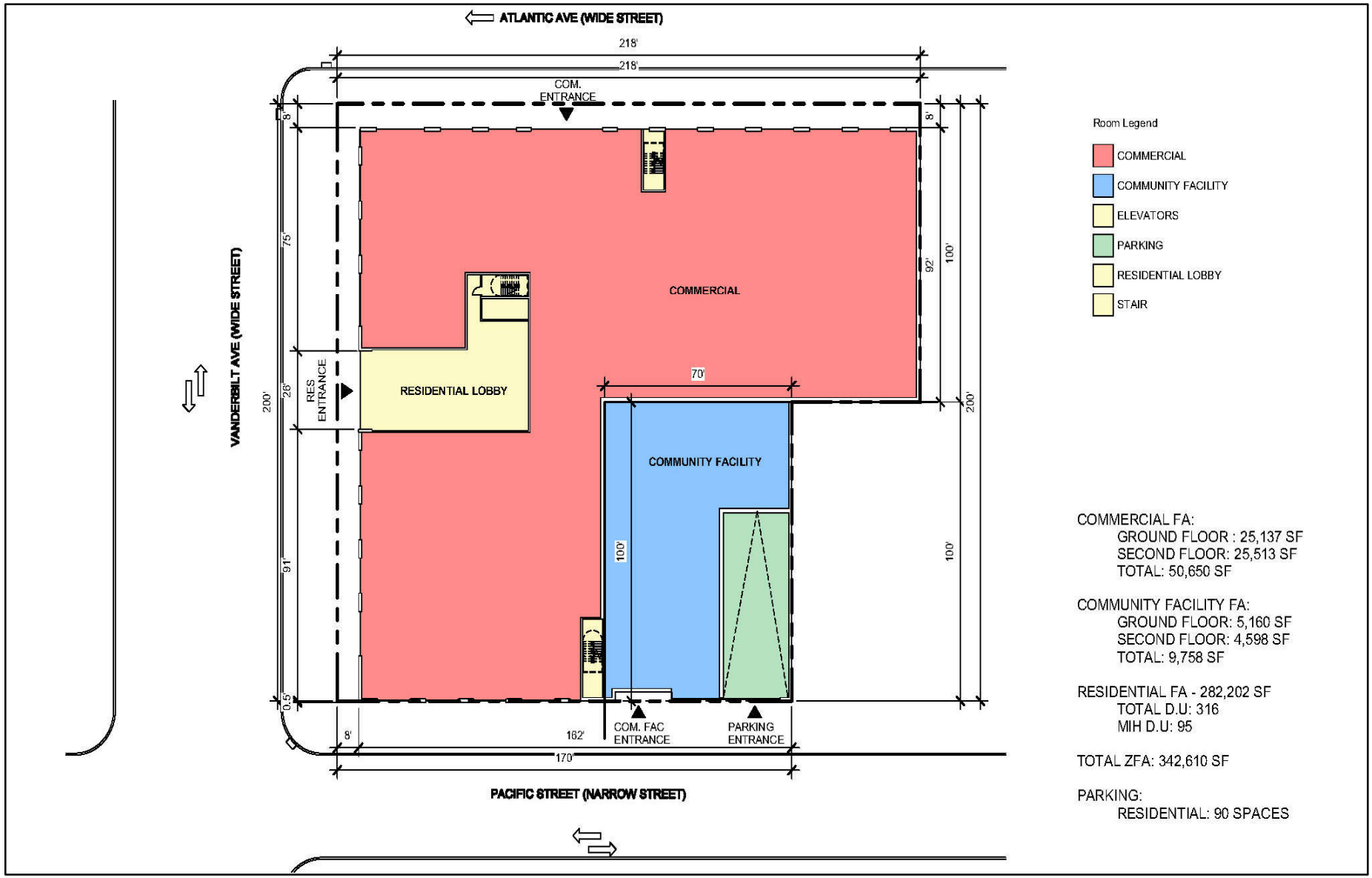


Figure A-7
Ground Floor Plan

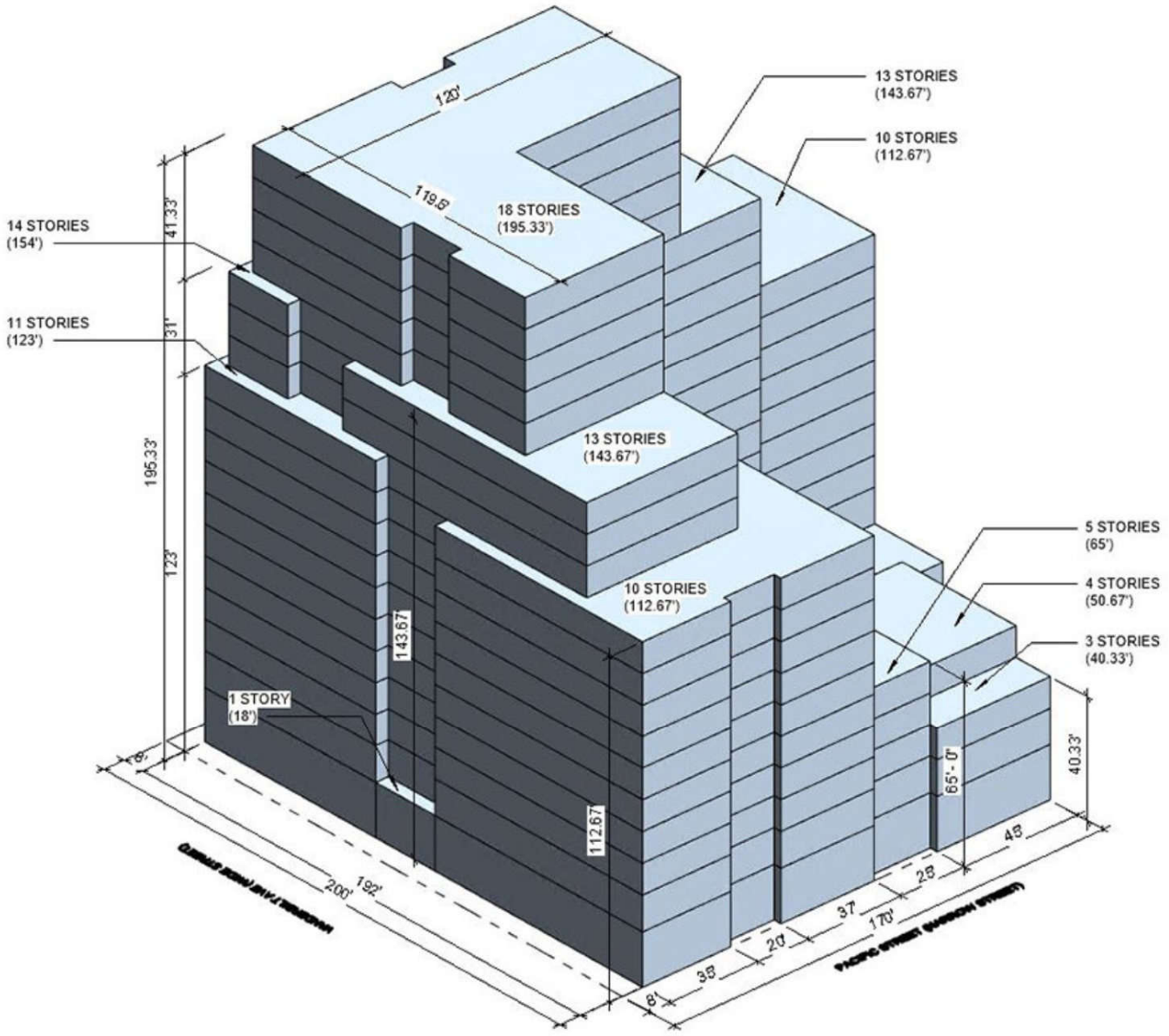

13 STORIES
(143.67')
10 STORIES
(112.67')
120'
119.5'
18 STORIES
(195.33')
14 STORIES
(154')
41.33'
11 STORIES
(123')
31'
195.33'
123'
13 STORIES
(143.67')
5 STORIES
(65')
4 STORIES
(50.67')
3 STORIES
(40.33')
10 STORIES
(112.67')
143.67'
1 STORY
(18')
18'
112.67'
65'- 0"
40.33'
200'
192'
8'
38'
20'
37'
170'
28'
43'

Table A-2: Proposed Development

Lot Area SF	Existing Zoning & Max. FAR	Proposed Zoning & Max. FAR	Proposed Residential		Proposed Commercial GSF	Proposed Com. Fac. GSF	Proposed Parking Spaces	Proposed Bldg GSF [4]	Proposed Bldg FAR
			GSF	DUs					
38,800	M1-1; R6B 2.4 FAR	C6-3X; R6B: 8.83 FAR[1]	312,917 gsf	316 (95 aff)	55,175 gsf	7,800 gsf	90	376,432 gsf	8.83

Notes:
[1] Proposed maximum blended FAR.

As discussed above, the maximum FAR permitted under the MIH Program set forth in Section 23-154 of the Zoning Resolution requires provision of either (i) an amount equivalent to at least 25 percent of the residential floor area within the development affordable to households at an average of 60 percent AMI, with at least 10 percent at or below 40 percent AMI (Option 1); or (ii) an amount equivalent to at least 30 percent of the residential floor area within the development affordable to households at an average of 80 percent AMI (Option 2).

The Applicant-proposed number of dwelling units would have an average unit size of approximately 990 gsf per unit is based on the overall gross square footage of residential space, which is inclusive of the interior common spaces associated with the residential area. This would result in 316 DUs.

VI. ANALYSIS FRAMEWORK AND REASONABLE WORST-CASE DEVELOPMENT SCENARIO (RWCDS)

As described above, the Applicant proposes to rezone the majority of the Development Site from R6B and M1-1 to C6-3X, and designate the area as a MIH Area.

A. Identification of Development Sites / Affected Area

As the Proposed Actions are site-specific actions affecting the Applicant-owned rezoning area only, the affected area to be analyzed for environmental review purposes is limited to the Applicant-owned rezoning area. No other properties are being rezoned as part of the Proposed Actions, and as such no other development would occur as a result of the proposed rezoning. Therefore, the Applicant-owned proposed development, as presented in **Table A-2** above, represents the RWCDS for analysis purposes.

The Future Without the Proposed Action (No-Action Condition)

Proposed Rezoning Area

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6B and M1-1 zoning would remain in place. The maximum allowable FAR would remain at 1.0 (or up to 2.4 for allowed community facility uses) in the M1-1 district. Residential uses are not permitted in M1-1 districts. The maximum allowable FAR in the R6B district would remain 2.0 for residential uses and up to 2.0 for community facility uses. Under the No-Action scenario, none of the lots within the proposed rezoning area are anticipated to be redeveloped.

No-Action Conditions within 400 Feet of the Proposed Rezoning Area

There is one known project that could be completed within 400 feet of the proposed rezoning area in the future without the Proposed Actions. A rezoning action was recently approved to the north of the Development Site (CEQR No. 18DCP179K), across Atlantic Avenue. The zoning map amendment included rezoning portions of Brooklyn Block 2010 to R9/C2-5 and R6A zoning districts. The project analyzed in the EAS included an approximately 277,500-gsf development at 809 Atlantic Avenue containing 25,000 gsf of retail, 19,500 gsf of office use, 27,029 gsf community facility, and 233,000 gsf of residential use (366 DUs). The project will be designed as two separate buildings: a 29-story tower building and a 4-story building. This project is expected to be completed by 2021.

The Future With the Proposed Action (With-Action Condition)

In the future with the Proposed Actions (the With-Action scenario), the proposed zoning map amendment and zoning text amendment would be implemented in the proposed rezoning area. As such, the proposed rezoning area would be remapped as a C6-3X district, and would be designated as an MIH Area. Under With-Action conditions, the maximum allowable FAR in the proposed rezoning area would increase to 9.7 when fully utilizing the additional FAR under the MIH Program.

The proposed rezoning area comprises approximately 32,500 sf of lot area bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. The proposed C6-3X district would extend 200 feet along Atlantic Avenue, 200 feet along Vanderbilt Avenue, and 125 feet along Pacific Street. The portion of the Development Site fronting on Pacific Street (the easternmost portion, 45 feet in width) will remain zoned R6B (approximately 4,500 sf). A small portion of the existing M1-1 zoning district (approximately 1,800 sf) would remain (approximately 20 feet of frontage along Atlantic Avenue). Although this portion of the Development Site would fall outside the rezoning area boundary and remain within the M1-1 district, it would be subject to the "25-foot rule" for split lots. As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area.

As detailed above in the "Description of the Proposed Development," the Applicant intends to redevelop the site with mixed-use building with an overall FAR of 8.83. Because this would almost maximize the blended floor area allowable on the Development Site (FAR of 8.83) the proposed development is the RWCDS With-Action condition for the Development Site.

In accordance with the City's MIH policy, under the Proposed Actions, the Applicant will choose either MIH Option 1 or 2, which would require 25 or 30 percent of the residential floor area be designated as affordable housing units for residents with incomes averaging between 60 and 80 percent of AMI and none of the units exceeding 130 percent of AMI. As Options 1 and 2 require that at least 25 or 30 percent of the residential floor area be reserved for residents with incomes averaging 60 to 80 percent of AMI, some of these MIH units would be affordable to households earning more than 60 to 80 percent of AMI. Therefore, for conservative CEQR analysis purposes, 20 percent of the overall residential floor area (approximately 63 DUs) of the RWCDS is assumed to be set aside for "affordable" residential units, which refers to the amount residential units that would accommodate households earning 60 to 80 percent (or below) of AMI. Therefore, 63 affordable DUs will be analyzed as part of the RWCDS.

As discussed previously, while the Applicant intends on developing the proposed project described above, because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case

development scenario (RWCDS) will be considered for conservative analysis purposes. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet. The total floor area ratio (FAR) for the alternate commercial RWCDS would be 5.52, which would be the maximum FAR under the proposed C6-3X and R6B zoning.

As detailed in **Table A-3**, under the With-Action RWCDS for Scenario 1, the Applicant-owned Development Site would be redeveloped with an 18-story (195-foot tall; 205 feet to the bulkhead), approximately 376,432 gsf mixed-use building. The Proposed Actions would result in a net increment of 50,922 gsf of commercial retail uses, 7,800 gsf of community facility uses, and 304,959 gsf (306 DUs).

Table A-3:
Comparison of 2023 No-Action and With-Action Conditions (Scenario 1)

	No-Action	With-Action	Increment
Land Use			
Residential	7,958 gsf (10 DU)	312,917 gsf (316 DU)	+ 304,959 gsf (+306 DU)
Market Rate	10	253	+ 243
Affordable	0	63	+ 63
Local Retail	4,793 gsf	55,175 gsf	+50,922 gsf
Community Facility	0 gsf	7,800 gsf	+7,800 gsf
Parking Spaces			
Public	0	0	0
Accessory	26	90	+64
Population[1]			
Residents	23	717	+694
Workers	15	188	+173

[1] Estimated residents assumes 100% occupancy of dwelling units and is based on the average household size of 2.27 persons per unit in Brooklyn CD 8; retail space & community facility: 3 employees/1,000 gsf

As detailed in **Table A-4**, under the With-Action RWCDS for Scenario 2, the Development Site would be redeveloped with a net increment of 149,336 gsf of office uses, 61,961 gsf of retail uses, and 9,450 gsf of community facility uses (assumed to be medical office).

Table A-4:
Comparison of 2023 No-Action and With-Action Conditions (Scenario 2)

	No-Action	With-Action	Increment
Land Use			
Residential	7,958 gsf (10 DU)	0	-7,958 gsf (-10 DU)
Market Rate	10	0	-10
Affordable	0	0	0
Office	0	149,336	+149,336
Local Retail	4,793 gsf	66,754 gsf	+61,961 gsf
Community Facility	0 gsf	9,450 gsf	+9,450 gsf
Parking Spaces			
Public	0	0	0
Accessory	26	0	-26
Population[1]			
Residents	23	0	-23
Workers	15	826	+811

[1] Estimated residents assumes 100% occupancy of dwelling units and is based on the average household size of 2.27 persons per unit in Brooklyn CD 8; retail space & community facility: 3 employees/1,000 gsf; office: 4 employees/1,000 gsf

VII. APPROVALS REQUIRED

The proposed zoning map amendment is a discretionary public action subject to both the Uniform Land Use Review Procedure (ULURP), as well as the City Environmental Quality Review (CEQR) and the proposed zoning text amendments are subject to CEQR. ULURP is a process that allows public review of proposed actions at four levels: the Community Board; the Borough President; the City Planning Commission; and if applicable, the City Council. The procedure mandates time limits for each stage to ensure a maximum review period of seven months. Through CEQR, agencies review discretionary actions for the purpose of identifying the effects those actions may have on the environment.

I. INTRODUCTION

This Environmental Assessment Statement ("EAS") has been prepared in accordance with the guidelines and methodologies presented in the *City Environmental Quality Review ("CEQR") Technical Manual*. For each technical area, thresholds are defined, which if met or exceeded, require that a detailed technical analysis be undertaken. Using these guidelines, preliminary screening assessments were conducted for the proposed action to determine whether detailed analysis of any technical area may be appropriate. Part II of the EAS Form identifies those technical areas that warrant additional assessment. For those technical areas that warranted a "Yes" answer in Part II of the EAS Form, including Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Community Facilities; Open Space; Shadows; Historic Resources; Urban Design and Visual Resources; Hazardous Materials; Water and Sewer Infrastructure; Transportation; Air Quality; and Noise; supplemental screening assessments are provided in this attachment. The remaining technical areas detailed in the *CEQR Technical Manual* were not deemed to require supplemental screening because they do not trigger initial CEQR thresholds and/or are unlikely to result in significant adverse impacts. These areas screened out from any further assessment include: Natural Resources; Solid Waste and Sanitation Services; Energy; Greenhouse Gas Emissions; Public Health, Neighborhood Character; and Construction.

The supplemental screening assessments contained herein identified that detailed analyses are required in the areas of Land Use, Zoning, and Public Policy, Socioeconomic Conditions, Open Space, Shadows, Historic Resources, Urban Design and Visual Resources, Hazardous Materials, Transportation, Air Quality, Noise, and Water and Sewer Infrastructure. These analyses are provided in Attachments C, D, E, F, G, H, I, J, K, L, and M, respectively, and are summarized in this attachment. **Table B-1** presents a summary of analysis screening information for the Proposed Actions.

In the future with the Proposed Actions, the Applicant proposes to construct a new 18-story (195-foot tall; 205 feet to the bulkhead) mixed-use building, with approximately 376,432 gross square feet (gsf)). The Proposed Development would contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided.

However, while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) will be considered for conservative analysis purposes. As the Proposed Actions would permit a greater commercial FAR than the existing zoning permits, an alternate commercial With-Action RWCDS option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet. The total floor area ratio (FAR) for the alternate commercial RWCDS would be 5.52, which would be the maximum FAR under the proposed C6-3X and R6B zoning ("Scenario 2").

The Environmental Assessment Statement (EAS) will analyze whichever scenario presents the worst case for each technical area.

Table B-1: Summary of CEQR Technical Areas Screening

CEQR TECHNICAL AREA	SCREENED OUT PER EAS FORM	SCREENED OUT PER SUPPLEMENTAL SCREENING	ANALYSIS REQUIRED
Land Use, Zoning, & Public Policy			X
Socioeconomic Conditions			X
Community Facilities and Services		X	
Open Space			X
Shadows			X
Historic & Cultural Resources			X
Urban Design & Visual Resources			X
Natural Resources	X		
Hazardous Materials			X
Water and Sewer Infrastructure			X
Solid Waste & Sanitation Services	X		
Energy	X		
Transportation - Traffic & Parking - Transit - Pedestrians	 X 	 X 	 X
Air Quality - Mobile Sources - Stationary Sources	 X 	 	 X
Greenhouse Gas Emissions	X		
Noise			X
Public Health	X		
Neighborhood Character		X	
Construction	X		

Notes: Pursuant to *CEQR Technical Manual* guidelines, the EAS considers two RWCDS (RWCDS- Scenario 1 (proposed mixed-use development) and RWCDS- Scenario 2 (commercial development) for conservative analysis purposes, which are described in detailed in Attachment A, "Project Description." The EAS analyzes the RWCDS that presents the worst case for each respective technical area. Both RWCDS scenarios are analyzed for the following technical areas: Land Use, Zoning, & Public Policy, Socioeconomic Conditions, Open Space, Historic Resources, Hazardous Materials. Scenario 1 is analyzed for Shadows, Urban Design & Visual Resources, Air Quality, and Noise. Scenario 2 is analyzed for Transportation and Water and Sewer Infrastructure.

II. SUPPLEMENTAL SCREENING AND SUMMARY OF DETAILED ANALYSES

Land Use, Zoning, and Public Policy

According to the *CEQR Technical Manual*, a detailed assessment of land use, zoning and public policy is appropriate if an action would result in a significant change in land use or would substantially affect regulations or policies governing land use. Zoning and public policy analyses are typically performed in conjunction with a land use analysis when an action would change the zoning on the site or result in the

loss of a particular use. Land use analyses are required when an action would substantially affect land use regulation.

The Proposed Actions includes a zoning map amendment and zoning text amendments. A detailed land use, zoning, and public policy assessment is provided in **Attachment C, "Land Use, Zoning, and Public Policy."** As discussed therein, no significant adverse land use, zoning, or public policy impacts are expected in the future with the Proposed Actions.

Socioeconomic Conditions

Socioeconomic impacts may occur when an action directly or indirectly changes population, housing stock, or economic activities in an area. In some cases, these changes may be substantial, but not significantly adverse. In other cases, these changes may be beneficial to some groups and adverse to others. The purpose of a socioeconomic assessment is to disclose potentially adverse changes that would be created by an action and identify whether they rise to the level of significance. According to the *CEQR Technical Manual*, a socioeconomic assessment should be conducted if an action may be reasonably expected to create socioeconomic changes in the area affected by the action that would not be expected to occur in the absence of the project.

As indicated on the EAS Form, the Proposed Actions can be screened out from any consideration of direct displacement of existing residential populations, businesses, or institutions. Two retail businesses and ten DUs in the Project Area would be displaced as a result of the Proposed Actions. The two retail businesses are estimated to have a total of approximately 15 employees. The ten DUs are estimated to have approximately 24 residents. As such, the Proposed Actions would directly displace a total of approximately 24 residents and 15 workers, well below CEQR thresholds for analysis.

The Proposed Actions would not result in any effects on any specific industries, such as introducing a new concentration of a specific industry, affecting an area where a specific industry is concentrated, or indirectly substantially reduce employment in or impair the economic viability of a specific industry. Therefore, no assessment is warranted.

The Proposed Actions would introduce a net residential increment of 306 DUs (95 affordable), which exceeds the CEQR threshold of 200 units. A preliminary analysis of indirect residential displacement is provided in **Attachment D, "Socioeconomic Conditions."** As discussed therein, the Proposed Actions would not result in significant adverse socioeconomic impacts.

As discussed above, while the Applicant intends on developing Scenario 1, as the Proposed Actions would result in a C6-3X commercial district, a second entirely non-residential development is also considered as a RWCDS. Scenario 2 could result in the net increase of 220,747 gsf of commercial and community facility space on the Development Site which would exceed the 200,000 sf CEQR threshold. A preliminary analysis of indirect business displacement is provided in **Attachment D**. As discussed therein, the Proposed Actions would not result in significant adverse socioeconomic impacts.

Community Facilities

Potential direct or indirect effects of a proposed action can trigger the need for analysis of community facilities. Direct effects occur if a project would "physically alter a community facility, whether by displacement or other physical change." Indirect effects occur if a project would add population to an area, which may potentially affect service delivery. While no community facilities would be directly

displaced by the Proposed Actions, the Proposed Actions could result the development of 306 dwelling units (net increment), of which 95 would be considered affordable (under Scenario 1). Scenario 2 would not result in any residential units. The *CEQR Technical Manual* provides density thresholds, which are used to make an initial determination of whether detailed studies are necessary to determine potential indirect impacts. These density thresholds are summarized in **Table B-2**.

TABLE B-2: Preliminary Screening Analysis Criteria for Community Facilities

Community Facility	Threshold for Detailed Analysis	Minimum Number of Residential Units in Brooklyn that Trigger Detailed Analyses
Public Elementary/Intermediate Schools	50 or more elementary/intermediate school students	480
Public High Schools	150 or more high school students	1,767
Libraries	More than five percent increase in ratio of residential units to libraries in the borough	734
Health Care Facilities (outpatient)	Introduction of sizeable new neighborhood	N/A
Child Care Centers (publicly funded)	More than 20 eligible children under age six based on number of low- to moderate-income units	110
Fire Protection	Introduction of sizeable new neighborhood	N/A
Police Protection	Introduction of sizeable new neighborhood	N/A

Source: *CEQR Technical Manual*

As the Proposed Actions would not exceed any of the thresholds outlined in **Table B-2**, a detailed assessment of the potential impacts on the Proposed Actions on community facilities is not warranted.

Open Space

Based on the *CEQR Technical Manual*, an open space assessment is typically warranted if an action would directly affect an open space, or if it would increase the population by more than 350 residents or 750 workers (these thresholds apply to areas that fall in areas that have been designated as "well-served").

Scenario 1 would result in the net increase of 694 new residents and 175 employees. As the Proposed Actions would result in an increase in residents above the *CEQR Technical Manual* threshold, a residential open space analysis is provided in **Attachment E, "Open Space."** Scenario 2 would result in a net increase of 811 employees. As Scenario 2 would result in an increase in employees above the *CEQR Technical Manual* threshold, a worker open space is warranted and provided in **Attachment E**. As discussed in detail in the attachment, no impacts to open space are anticipated as a result of the Proposed Actions.

Shadows

A shadows assessment considers proposed actions that result in new shadows long enough to reach a publicly accessible open space or historic resource (except within an hour and a half of sunrise or sunset). For proposed actions resulting in structures less than 50 feet high, a shadow assessment is generally not necessary unless the site is adjacent to a park, historic resource, or important natural feature (if the features that make the structure significant depend on sunlight). According to the *CEQR Technical Manual*, some open spaces contain facilities that are not sunlight-sensitive, and do not require a shadow analysis including paved areas (such as handball or basketball courts) and areas without vegetation.

As detailed in **Attachment A, "Project Description,"** the proposed new building under Scenario 1 would be 205 feet high (to the bulkhead). Under Scenario 2, the proposed commercial building would be approximately 75-feet tall. As the proposed building under Scenario 1 would be taller, a shadows analysis was prepared for the Applicant's proposed development. The maximum shadow radius (Tier 1 Assessment) for the proposed building under Scenario 1 would be 881.5 feet. There are three sunlight sensitive resources within the maximum shadow radius. Therefore, a detailed shadows analysis is provided in **Attachment F, "Shadows."** As discussed in detail in the attachment, no significant adverse shadow impacts are anticipated as a result of the Proposed Actions.

Historic and Cultural Resources

Historic and cultural resources include both architectural and archaeological resources. The *City Environmental Quality Review* (CEQR) *Technical Manual* identifies historic and cultural resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes designated New York City Landmarks (NYCL); properties calendared for consideration as landmarks by the New York City Landmarks Preservation Commission (LPC); properties listed on the State/National Registers of Historic Places (S/NR) or contained within a district listed in or formally determined eligible for S/NR listing; properties recommended by the New York State Board for listing on the S/NR; National Historic Landmarks; and properties not identified by one of the programs listed above, but that meet their eligibility requirements. An assessment of architectural and/or archaeological resources is usually needed for projects that are located adjacent to historic or landmark structures or within historic districts, or projects that require in-ground disturbance, unless such disturbance occurs in an area that has already been excavated.

As the Development Site is located in close proximity to several designated and eligible historic resources, it is necessary to assess the potential impacts of the Proposed Actions on historic architectural resources. According to *CEQR Technical Manual* guidance, impacts on historic architectural resources are considered on the site affected by the Proposed Actions and in the area surrounding the Development Site. This analysis is provided in **Attachment G, "Historic Resources."** As discussed in **Attachment G,** there would be no significant adverse impacts to historic resources as a result of the Proposed Actions.

Urban Design and Visual Resources

An area's urban components and visual resources together define the look and character of the neighborhood. The urban design characteristics of a neighborhood encompass the various components of buildings and streets in the area. These include building bulk, use and type; building arrangement; block form and street pattern; streetscape elements; street hierarchy; and natural features. An area's visual resources are its unique or important public view corridors, vistas, or natural or built features. For the CEQR analysis purposes, this includes only views from public and publicly-accessible locations and does not include private residences or places of business.

An analysis of urban design and visual resources is appropriate if a proposed project would (a) result in buildings that have substantially different height, bulk, form, setbacks, size, scale, use or arrangement than exists in an area; (b) change block form, demap an active street or map a new street, or affect the street hierarchy, street wall, curb cuts, pedestrian activity or streetscape elements; or (c) would result in above-ground development in an area that includes significant visual resources.

The Proposed Actions includes the rezoning from M1-1 and R6B districts to a C6-3X district which would result in a development that would differ from what is permitted as-of-right, and as such, an analysis of urban design and visual resources is appropriate. As detailed in **Attachment A, "Project Description,"** the proposed new building under Scenario 1 would be 205 feet high (to the bulkhead). Under Scenario 2, the proposed commercial building would be approximately 75-feet tall. As the proposed building under Scenario 1 would be taller, an urban design and visual resource analysis was prepared for the Applicant's proposed development. This analysis is provided in **Attachment H, "Urban Design and Visual Resources."** As discussed in **Attachment H,** there would be no significant adverse impacts to these technical areas as a result of the Proposed Actions.

Hazardous Materials

As defined in the *CEQR Technical Manual*, a hazardous material is any substance that poses a threat to human health or the environment. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semivolatile organic compounds, methane, polychlorinated biphenyls and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the *CEQR Technical Manual*, the potential for significant adverse impacts from hazardous materials can occur when: (a) hazardous materials exist on a site, and (b) an action would increase pathways to their exposure; or (c) an action would introduce new activities or processes using hazardous materials.

As the Proposed Actions would result in the development of a residential building on a site where there is reason to suspect the presence of hazardous materials, an assessment is provided in **Attachment I, "Hazardous Materials,"** to determine potential hazardous materials concerns within the Development Site.

Transportation

The objective of a transportation analysis is to determine whether a proposed action may have a potentially significant adverse impact on traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, safety of all roadway users (pedestrians, bicyclists, and vehicles), on- and off-street parking or goods movement.

The *CEQR Technical Manual* identifies minimum incremental development densities that potentially require a transportation analysis. Development at less than the development densities shown in Table 16-1 of the *CEQR Technical Manual* generally result in fewer than 50 peak-hour vehicle trips, 200 peak-hour subway/rail or bus transit riders, and 200 peak-hour pedestrian trips, where significant adverse impacts are considered unlikely. In Zone 2 (which includes the Development Site) the development thresholds include an increment of 200 DUs for residential, 15,000 sf for local retail, and 25,000 sf for community facility. According to the *CEQR Technical Manual*, if an action would result in development greater than one of the minimum development density thresholds in Table 16-1, a Level 1 (Project Trip Generation) Screening Assessment should be prepared. In most areas of the city, including the rezoning area, if the proposed action is projected to result in fewer than 50 peak-hour vehicle trips, 200 peak-hour subway/rail or bus transit riders, or 200 peak-hour pedestrian trips, it is unlikely that further analysis would be necessary. If these trip-generation screening thresholds are exceeded, a Level 2 (Project-generated Trip Assignment) Screening Assessment should be prepared to determine if the proposed action would generate or divert 50 peak-hour vehicle trips through any intersection, 200 peak-hour subway trips through a single station, 50 peak-hour bus trips on a single bus route in the peak direction,

or 200 peak-hour pedestrian trips through a single pedestrian element. If any of these Level 2 screening thresholds are met or exceeded, detailed analysis for the respective mode is required.

As discussed in **Attachment J, "Transportation**," the Proposed Actions would exceed the Level 2 screening thresholds for pedestrians, and as such, a detailed analysis of pedestrians is provided in **Attachment J**. As discussed in **Attachment J**, the Proposed Actions would not result in any significant adverse impacts to pedestrian conditions. As further discussed in **Attachment J**, the Proposed Actions do not warrant a detailed analysis of traffic, parking, or transit.

Air Quality

According to the guidelines provided in the *CEQR Technical Manual*, air quality analyses are conducted in order to assess the effect of an action on ambient air quality (i.e., the quality of the surrounding air), or effects on the project because of ambient air quality. Air quality can be affected by "mobile sources," pollutants produced by motor vehicles, and by pollutants produced by fixed facilities, i.e., "stationary sources." As per the *CEQR Technical Manual*, an air quality assessment should be carried out for actions that can result in either significant adverse mobile source or stationary source air quality impacts.

Vehicular traffic, whether on a road or in a parking garage, may affect air quality. Other moving sources, such as planes, helicopters, boats, trains, etc., may also affect air quality. All of these sources of pollution are termed "mobile sources." In general, mobile source analyses consider projects that add new vehicles to the roads, change traffic pat-terns by diverting vehicles, include parking lots or garages, or add new uses near sources of pollutants, such as when a park is proposed adjacent to a highway.

Stationary source impacts could occur with actions that create new stationary sources or pollutants, such as emission stacks for industrial plants, hospitals, or other large institutional uses, or a building's boiler stacks used for heating/hot water, ventilation, and air conditioning ("HVAC") systems, that can affect surrounding uses. Impacts from boiler emissions associated with a development are a function of fuel type, stack height, minimum distance of the stack on the source building to the closest building of similar or greater height, building use, and the square footage size of the source building. In addition, stationary source impacts can occur when new uses are added near existing or planned emissions stacks, or when new structures are added near such stacks and those structures change the dispersion of emissions from the stacks so that they affect surrounding uses.

The Proposed Actions were analyzed for potential stationary and mobile source impacts, which is provided in **Attachment K, "Air Quality."** As detailed in **Attachment A, "Project Description,"** the proposed new building under Scenario 1 would be 205 feet high (to the bulkhead) and 376,432 gsf. Under Scenario 2, the proposed commercial building would be approximately 75-feet tall and 225,540 gsf. As the proposed building under Scenario 1 would be larger, an air quality analysis was prepared for the Applicant's proposed development. As discussed in detail **Attachment K**, the stationary source air quality analysis determined that the Development Site would require an (E) designation that specifies natural gas as the type of fuel oil for the HVAC systems. As discussed therein, no significant adverse stationary or mobile air quality impacts are expected in the future with the Proposed Actions.

Noise

The Proposed Actions under Scenario 1 would result in residential and commercial uses on the Development Site. Consistent with the *CEQR Technical Manual*, existing noise levels should be measured and compared to the Noise Exposure Guidelines for these types of uses presented in Table 19-2 of the Manual. As such, a noise analysis for the proposed project under Scenario 1 has been prepared and is provided in **Attachment L, "Noise."** As discussed in detail **Attachment L**, the noise analysis determined that the Development Site would require an (E) designation that would specify the required noise attenuation measures for the proposed building. As discussed in **Attachment L,** the Proposed Actions would not result in any significant adverse noise impacts.

The Proposed Actions would not generate sufficient traffic to result in a significant noise impact (i.e., doubling of Noise PCEs). Therefore, consistent with the guidelines of the *CEQR Technical Manual*, an assessment of mobile noise impacts is not provided in this EAS.

Water and Sewer Infrastructure

According to the *CEQR Technical Manual,* a preliminary water supply infrastructure analysis is needed if the project would result in an exceptionally large demand for water (e.g., more than one million gallons per day [mgd]), or is located in an area that experiences low water pressure (i.e., areas at the end of the water supply distribution system such as the Rockaway Peninsula or Coney Island). As the rezoning area is not located in an area that experiences low water pressure and the proposed actions would not result in an incremental water demand exceeding one mgd, a detailed analysis is not warranted.

The Development Site is located in a combined sewered area. A preliminary sewer assessment is warranted if a project located in a combined sewered area exceeds 400 residential units or 150,000 sf of commercial, public facility, and community facility space or more. As Scenario 2 meets this *CEQR Technical Manual* threshold, a preliminary sewer assessment is warranted and is provided in **Attachment M, "Water and Sewer Infrastructure."** As discussed in **Attachment M**, no significant adverse impacts would occur to water and sewer infrastructure as a result of the Proposed Actions.

Neighborhood Character

A supplemental screening analysis is necessary to determine if a detailed neighborhood character analysis is warranted in accordance with *CEQR Technical Manual* methodology, because the Proposed Project required analyses of land use, zoning, and public policy, socioeconomic conditions, open space, historic resources, urban design and visual resources, shadows, transportation, and noise.

The Proposed Project would not adversely affect any component of the surrounding area's neighborhood character. The Proposed Actions would facilitate a mixed-use development that would introduce housing (including affordable housing), local retail, and community facility uses. As such, the proposed land uses would be consistent with the existing land uses within the surrounding area and would not alter the character of the neighborhood.

It is expected that the average household income of the residential development facilitated by the Proposed Actions would have similar average incomes of the existing population and no significant adverse indirect residential displacement impacts are anticipated.

The Proposed Project would also not result in the potential for significant adverse neighborhood character impacts as a result of its effects in the areas of open space, historic resources, urban design and visual resources, and shadows. The Proposed Project would not directly alter any open space resources, and the area would continue to be adequately served by open space in the future with the Proposed Project. While the Proposed Actions would result in incremental shadow coverage on portions of one sunlight-sensitive historic resource - The Church of St. Luke and St. Matthew - the extent and duration of the incremental shadows on this historic resource would not (1) significantly reduce or completely eliminate direct sunlight exposure on any of the historic resource's sunlight-sensitive features; and would not (2) significantly alter the public's utilization or enjoyment of the historic resource's sunlight-sensitive features.

Although the Proposed Actions would facilitate the construction of a new building just north of the S/NR-listed and LPC-designated Prospect Heights Historic District, this change would not be significant or adverse. The proposed additional height and bulk on the Development Site would not result in any significant adverse impacts to urban design and visual resources, but rather, is expected to enhance the pedestrian experience in the vicinity of the Development Site with the introduction of ground-floor retail and community facility uses.

Lastly, the Proposed Project would increase traffic and noise levels in proximity to the Project Area. However, the Project Area and surrounding neighborhood is already characterized by its location in Prospect Heights and the increased traffic and noise levels would not constitute a significant adverse impact on neighborhood character.

I. INTRODUCTION

Vanderbilt Atlantic Holdings LLC (the "Applicant") is seeking several discretionary zoning actions in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (the "Development Site"). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to a C6-3X district; (ii) a zoning text amendment to Zoning Resolution ("ZR") Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall in Brooklyn Community District 8. Collectively, the zoning map amendment and the zoning text amendments are the "Proposed Actions" for the purposes of the environmental analysis.

The proposed rezoning area would encompass the entirety of Lots 9, 68, 69, 70, 71 and a portion of Lots 1 and 10 on Brooklyn Block 1122. The total area of the Development Site is 38,800 square feet (sf). The proposed rezoning area comprises approximately 32,500 sf of lot area bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. The portion of the Development Site fronting on Pacific Street (the easternmost portion, 45 feet in width) will remain zoned R6B (approximately 4,500 sf). A small portion of the existing M1-1 zoning district (approximately 1,800 sf) would remain (approximately 20 feet of frontage along Atlantic Avenue). Although this portion of the Development Site would fall outside the rezoning area boundary and remain within the M1-1 district, it would be subject to the "25-foot rule" for split lots.[1] As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area.

A detailed assessment of land use and zoning is appropriate if a proposed action would result in a significant change in land use or would substantially affect regulations or policies governing land use. An assessment of zoning is typically performed in conjunction with a land use analysis when the action would change the zoning on the site or result in the loss of a particular use. As the Proposed Actions include zoning map and text amendments, a detailed assessment of land use, zoning, and public policy is warranted and is provided in this attachment. The assessment considers the effects of the Proposed Actions on the land use study area, as well as the Proposed Actions' potential effects on zoning and public policy in the study area.

1 As outlined in Zoning Resolution Section 77-11, the "25 Foot Rule" applies to a zoning lot split between two or more zoning districts that permit different uses and bulk regulations when the width of one district on the zoning lot measures 25 feet or less at every point.

II. PRINCIPAL CONCLUSIONS

No significant adverse impacts on land use, zoning, or public policy, as defined by the guidelines for determining impact significance set forth in the *CEQR Technical Manual*, are anticipated in the 2023 future with the Proposed Actions in the primary and secondary study areas. The Proposed Actions would result in changes to land use within the primary study area by introducing a mix of uses that would not be permitted in the proposed rezoning area in the future without the Proposed Actions. However, the proposed residential, commercial, and community facility uses would be consistent with uses already present in both the primary and secondary study areas. The proposed zoning map and text amendments would create additional zoning capacity in a transit-accessible area to support the creation of new housing and increase the number of affordable housing units available in New York City. While the proposed C6-3X district would permit development at a density greater than permitted under the existing or No-Action condition, the proposed rezoning area's location along Atlantic Avenue, Vanderbilt Avenue, and Pacific Street, with excellent public transit service provided at the Atlantic Avenue Barclays Center Subway Station, is well-suited for additional development. In addition, the proposed zoning district would activate the street and allow a consistent streetwall, retail continuity, and serve local residents. Further, the R6B portion of the Development Site that would remain would create a building that relates to the existing low-scale context of the midblock area along Pacific Street. It would provide a transition of scale between the larger-scale C6-3X and the lower-scale context in the midblock area. It should be noted that there are no existing C6-3X districts currently mapped in Brooklyn.

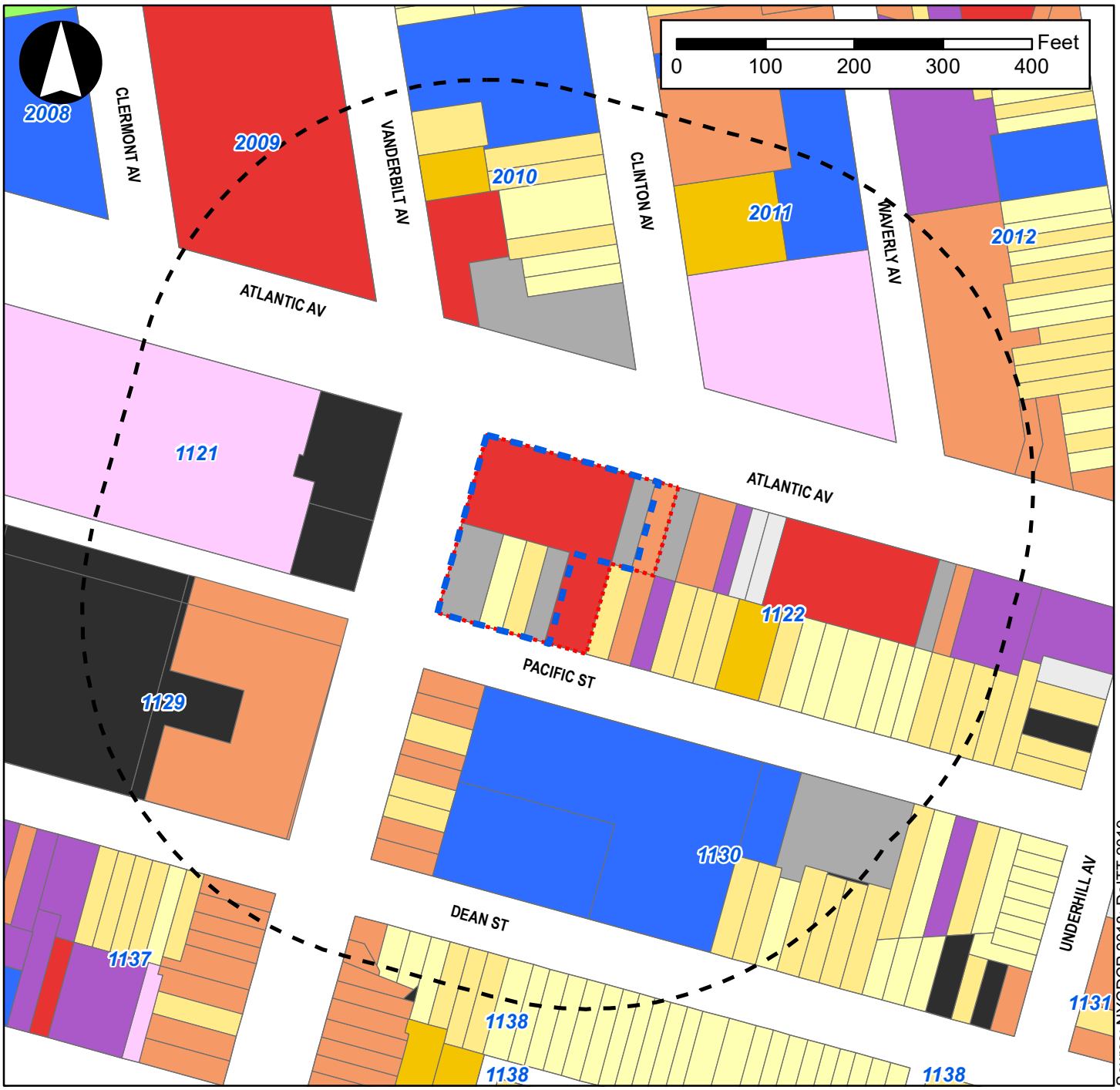
As such, the Proposed Actions would not result in significant adverse impacts to zoning. Lastly, the Proposed Actions would not result in land uses that conflict with public policies applicable to the primary or secondary study areas.

III. METHODOLOGY

As mentioned above, the Proposed Actions include zoning map and text amendments, which would affect land use, zoning and public policy. Land use, zoning, and public policy are addressed and analyzed for two geographical areas for the Proposed Actions. For the purpose of this assessment, the primary study area encompasses the proposed rezoning area. The secondary study area encompasses areas that have the potential to experience indirect impacts as a result of the Proposed Actions. The secondary study area extends an approximate 400-foot radius from the boundary of the primary study area. Both the primary and secondary study areas have been established in accordance with *CEQR Technical Manual* guidelines and can be seen in **Figure C-1**.

The analysis of land use, zoning, and public policy first provides a description of the existing land use, zoning, and public policy conditions in the study areas. Existing land uses in the primary and secondary study area were determined based on the New York City Primary Land Use Tax Lot Output (PLUTO) data files for 2017 and November 2018 field visits. New York City Zoning and Land Use (ZoLa), New York City Zoning maps, and the *Zoning Resolution of the City of New York* were consulted to describe existing zoning districts in the study areas. Relevant public policy documents, recognized by the New York City Department of City Planning (DCP) and other City agencies were utilized to describe existing public policies pertaining to the primary and secondary study areas.

Figure C-1
Land Use Study Areas



Legend

- Primary Study Area (Rezoning Area)
- Secondary Study Area (400-Feet Radius)
- Development Site

Land Use

- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Buildings
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land
- All Others or No Data

Next, the analysis projects land use, zoning, and public policy conditions in the 2023 analysis year without the Proposed Actions. This is the "No-Action" or "future without the Proposed Actions" condition, which is developed by identifying proposed developments and other relevant changes anticipated to occur in the primary and secondary study areas within this time frame. The No-Action condition describes the baseline conditions in the study areas against which the Proposed Actions' incremental changes are measured. Finally, the analysis projects land use, zoning, and public policy conditions in 2023 with the completion of the RWCDS development. This is the "With-Action" or "future with the Proposed Actions" condition.

IV. PRELIMINARY ASSESSMENT

Land Use and Zoning

A preliminary assessment, which includes a basic description of existing and future land uses and zoning, should be provided for all projects that would affect land use or would change the zoning on a site, regardless of the project's anticipated effects. However, under *CEQR Technical Manual* guidelines, if a detailed assessment is required in the technical areas of socioeconomic conditions, neighborhood character, transportation, air quality, noise, infrastructure, or hazardous materials, a detailed land use assessment is appropriate. This EAS provides detailed assessments of socioeconomic conditions, open space, urban design, transportation, air quality, and noise. Therefore, a detailed assessment of land use and zoning is warranted and provided in Section V below.

Public Policy

According to the *CEQR Technical Manual*, a project that would be located within areas governed by public policies controlling land use, or that has the potential to substantially affect land use regulation or policy controlling land use, requires an analysis of public policy. A preliminary assessment of public policy should identify and describe any public policies, including formal plans or published reports that pertain to the study areas. If the proposed action could potentially alter or conflict with identified policies, a detailed assessment should be conducted; otherwise, no further analysis of public policy is necessary.

The primary study area is not located in an urban renewal area, a Business Improvement District (BID), a designated historic district, or within an area defined by an adopted 197-a plan. Public policies applicable to the primary and secondary study area includes the Food Retail Expansion to Support Public Health (FRESH), OneNYC, and *Housing New York: A Five-Borough, Five-Year Plan*, which are discussed in Section V.

V. DETAILED ASSESSMENT

Existing Conditions

Land Use

Primary Study Area (Proposed Rezoning Area)

The Applicant-owned Development Site at 840 Atlantic Avenue (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) is an irregularly-shaped lot with approximately 218 feet of frontage along Atlantic Avenue,

approximately 200 feet of frontage along Vanderbilt Avenue, and approximately 170 feet of frontage along Pacific Street. The approximately 38,800 sf Development Site is currently zoned M1-1 and R6B. The Development Site contains a fast food establishment with a drive-through and parking lot fronting on Atlantic Avenue and Vanderbilt Avenue on Tax Lot 1. Tax Lot 9, fronting on Atlantic Avenue, is a vacant lot utilized as open storage. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings, flanked on each side by vehicular entrances to the fast food establishment parking lot. Lot 68, fronting on Pacific Street, is vacant and currently utilized as open storage.

Secondary Study Area

As shown in **Figure C-1** and **Table C-1**, land uses in the secondary study area are predominantly residential and mixed commercial/residential.

TABLE C-2:
Existing Land Uses within the Secondary Study Area

Land Use	Number of Lots	Percentage of Total Lots (%)	Lot Area (sf)	Percentage of Total Lot Area (%)	Building Area (sf)	Percentage of Total Building Area (%)
Residential	35	47.3	102,702	27.6	193,082	22.5
One & Two-Family Residential	*13*	*17.6*	*34,230*	*9.2*	*44,576*	*5.2*
Multi-Family Walkup Buildings	*19*	*25.7*	*48,949*	*13.2*	*83,737*	*9.8*
Multi-Family Elevator Buildings	*3*	*4.1*	*19,523*	*5.2*	*64,769*	*7.6*
Mixed Commercial/Residential Buildings	16	21.6%	53,980	14.5%	493,818	57.6%
Commercial/Office Buildings	3	4.1%	50,520	13.6%	20,080	2.3%
Industrial/Manufacturing	3	4.1%	12,500	3.4%	61,234	7.1%
Transportation/Utility	1	1.4%	0	0.0%	0	0.0%
Public Facilities & Institutions	3	4.1%	85,630	23.0%	75,931	8.9%
Open Space	0	0.0%	0	0.0%	0	0.0%
Parking Facilities	7	9.5%	45,288	12.2%	13,700	1.6%
Vacant Land	4	5.4%	17,254	4.6%	0	0.0%
All Others or No Data	2	2.7%	4,000	1.1%	0	0.0%
Total	*74*	*100.0%*	*371,874*	*100.0%*	*857,845*	*100.0%*

Source: 2018 PLUTO data.

Residential uses comprise a total of 47.3 percent of the secondary study area lots. Multi-family walkup residential buildings are the most prevalent in terms of lot area and building area, while one- and two-family residential buildings are the second most represented residential building type; there are only four multi-family elevator buildings present in the secondary study area (refer to **Table C-1**). As presented in **Figure C-1**, one- and two-family residential buildings and multi-family walkup buildings are both found to the east and south of the primary study area.

As presented in **Table C-1**, institutional uses, while only representing 4.1 percent of the secondary study area lots, comprise 23 percent of the secondary study area lot area and 8.9 percent of the secondary study area building area; this discrepancy is due to the presence of several large churches located within the secondary study area.

As also presented in **Table C-1**, only three lots in the secondary study area contain commercial/office uses, comprising a total of 4.1 percent of the secondary study area lots and 13.6 percent of the secondary study

area lot area. Despite a low number of lots featuring only commercial/office uses, 16 lots in the secondary study area contain mixed-use commercial/residential uses, representing a total of 21.6 percent of the secondary study area lots, 14.5 percent of the secondary study area lot area, and 57.6 percent of the secondary study area building area.

Zoning

Primary Study Area

As shown in **Figure C-2**, the proposed rezoning area is currently zoned M1-1 and R6B. M1-1 districts are often located adjacent to residential zoning districts, and can serve as a buffer between residence districts and heavy industrial (M2 and M3) districts. M1-1 zoning districts permit a range of light industrial/manufacturing uses that must be fully enclosed and are subject to strict performance standards with regard to air, noise, and vibrations. Office, hotel, most retail uses, and certain community facility uses are also allowed as-of-right. Use Groups 4 through 14, and 16 and 17 are allowed in M1-1 zoning districts. Residential uses are generally not permitted in M1 districts. The maximum floor area ratio (FAR) in an M1-1 zoning district is 1.0 for light industrial/manufacturing and commercial uses, and up to 2.4 for community facility uses. New manufacturing developments in M1-1 zoning districts require one parking space per 2,000 square feet of floor area, or one space per three employees, whichever would require a smaller number of spaces.

R6B districts are often traditional row house districts, which preserve the scale and harmonious streetscape of neighborhoods of four-story attached buildings developed during the 19th century. Many of these houses are set back from the street with stoops and small front yards that are typical of Brooklyn's "brownstone" neighborhoods, such as Park Slope, Boerum Hill and Bedford Stuyvesant.

The FAR of 2.0 and the mandatory Quality Housing regulations also accommodate apartment buildings at a similar four- to five-story scale. The base height of a new building before setback must be between 30 and 40 feet and the maximum height is 50 feet. For buildings providing a qualifying ground floor, the maximum base height and overall height increase by five feet. Curb cuts are prohibited on zoning lot frontages less than 40 feet. The street wall of a new building, on any lot up to 50 feet wide, must be as deep as one adjacent street wall but no deeper than the other. Buildings must have interior amenities for the residents pursuant to the Quality Housing Program.

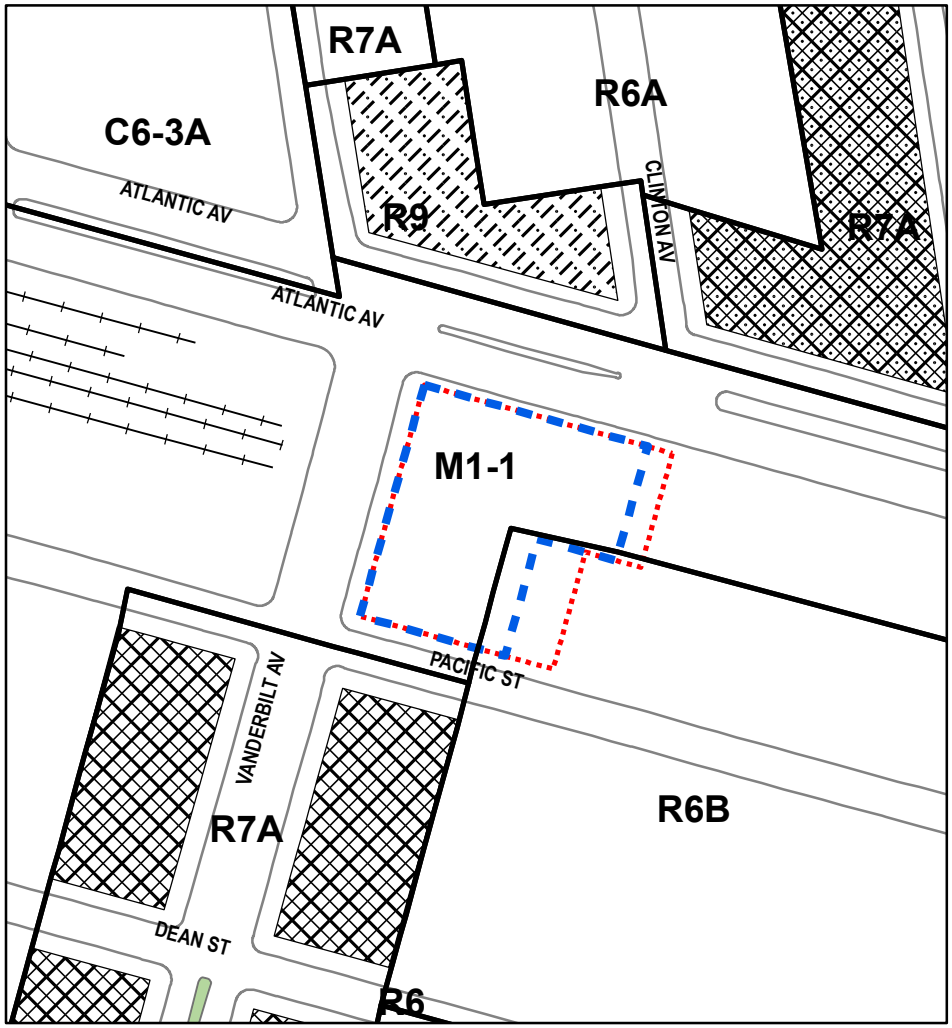
Off-street parking is generally required for 50 percent of a building's dwelling units, but requirements are lower for income-restricted housing units (IRHU) and are further modified in certain areas, such as within the Transit Zone and the Manhattan Core, or for lots less than 10,000 square feet. Parking can be waived if five or fewer spaces are required. Off-street parking is not allowed in front of a building.

Secondary Study Area

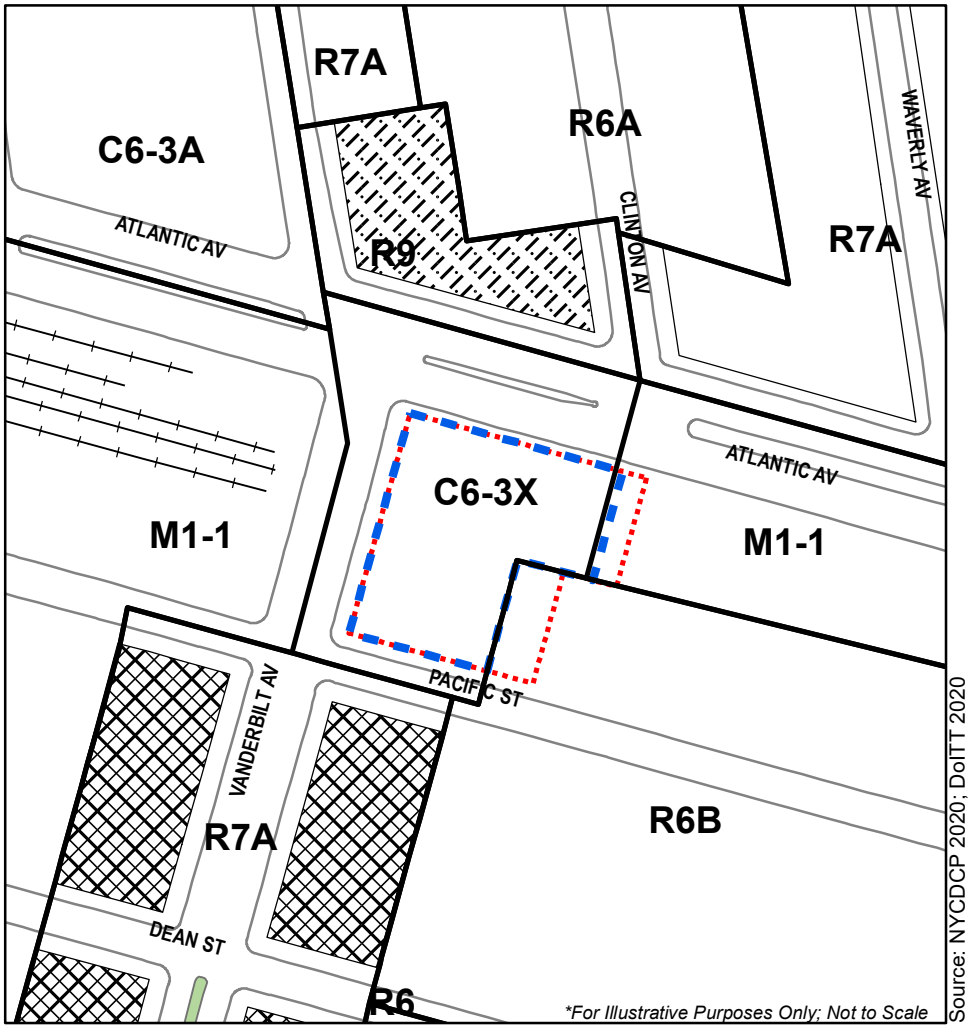
The study area contains several commercial and residential zoning districts (see **Figure C-2**). In addition to the zoning districts described above, the study area contains R6, R6A, R7A, R7-2, R9, and C6-3A zoning districts, as well as C1-4, C2-3, and C2-5 overlay districts. The block directly north west of the project area is mapped C6-3A. C6-3A is a contextual commercial district which allows medium- to high-density commercial developments such as large hotels, office buildings, department stores, and entertainment facilities. The maximum FAR for commercial uses in a C6-3A district is 6.0. The district also allows

Figure C-2
Existing & Proposed Zoning

Existing Zoning:



Proposed Zoning*:



Source: NYCDCP 2020; DoITT 2020

Legend

- Proposed Rezoning Area
- Development Site
- Railroad Tracks
- Open Space
- R7A Zoning District Boundaries
- C1-4 Overlay
- C2-4 Overlay
- C2-5 Overlay

Feet
0 100 200 300 400

residential uses: the residential district equivalent of a C6-3A district is R9A, with a base maximum residential FAR of 6.5; under IHDA regulations, R9A districts allow a maximum residential FAR of 8.5.

An R7-2 zoning district is mapped to the west of the C6-3A district. A portion of the district fronting Fulton Street also has a C2-3 overlay district. Residential bulk in R7-2 is governed by height factor regulations that permit larger towers set back from the street, with FAR determined by the amount of open space provided (the "open space ratio") up to a maximum of 3.44. A R7A zoning districts are located to the north and south of the project area. R7A zoning districts are medium-density contextual residential districts and typically contain a mix of apartment buildings. R7A districts permit up to a 4.6 FAR for residential uses under IHDA regulations. An R6 zoning district is located to the south of the project area. Residential bulk in the R6 district is governed by height factor regulations that permit larger towers set back from the street. The maximum residential FAR is 2.43 for the R6 district, and 2.0 for R6B zoning district. A R9 zoning district was recently mapped to the north of the Development Site, across Atlantic Avenue. R9 districts permit up to an 8.0 FAR for residential uses under IHDA regulations.

The study area also contains commercial overlay districts mapped along the major avenues: C1-4 along Vanderbilt avenue south of Atlantic Avenue, C2-4 overlays along Atlantic Avenue, Fulton Street, and Waverly Avenue to the north and east of the Development Site, and C2-3 overlay along Fulton Street between Carlton Avenue and Clermont Avenue. A C2-5 commercial overlay was recently mapped to the north of the Development Site, across Atlantic Avenue. As noted above, commercial overlay districts permit local retail facilities, located either in separate buildings or on the lower floors of residential buildings. While C1 overlays are intended to provide local retail stores and personal service establishments that are generally found under Use Group 6 (e.g., grocery stores, restaurants, or drug stores). C2 overlays, in addition to providing for local retail establishments, provide for a wider range of establishments that are not used for day-to-day activities and are found under Use Groups 7, 8, 9, and 14 (e.g., funeral homes or movie theaters).

Public Policy

As noted above, the primary study area is not located in an urban renewal area, a BID, a designated historic district, or within an area defined by an adopted 197-a plan. However, the primary study area (as well as the secondary study area) is located within a FRESH designated area. As such, a discussion of the FRESH program is provided below. Other public policies applicable to the primary study area include *Housing New York and OneNYC.*

FRESH Program

The primary study area is located within the Food Retail Expansion to Support Health (FRESH) zoning and tax incentive area. This special zoning designation provides zoning and financial incentives to promote the establishment and retention of neighborhood grocery stores in underserved communities throughout the five boroughs. The FRESH program is open to grocery store operators renovating existing retail space or developers seeking to construct or renovate retail space that will be leased by a full-line grocery store operator. Zoning and tax incentives are discretionary and assessed on a per-case basis. As the Proposed Project does not include a FRESH grocery store, the Proposed Actions would not conflict with this public policy.

Housing New York: A Five-Borough, Five-Year Plan

Housing New York is the City's comprehensive housing development policy plan that seeks, as a primary goal, to build and preserve 300,000 units of high-quality affordable housing over the next decade. Framed by the policy goals and objectives in Housing New York, the City approved MIH program requires, through zoning actions, a share of new housing to be permanently affordable. *Housing New York* was developed in conjunction with the HPD to create housing opportunities for New Yorkers with a range of incomes, while fostering vibrant and diverse neighborhoods.

The primary components of *Housing New York* include:

- Mandatory affordable housing, not voluntary. Production of affordable housing would be a condition of residential development when developers build in an area zoned for MIH, whether rezoned as part of a City neighborhood plan or a private rezoning application.
- Affordable housing would be permanent. There would be no expiration to the affordability requirement of apartments generated through MIH, making them a long-term, stable reservoir of affordable housing.

Housing New York, and the adopted (March 22, 2016) ZQA and MIH programs are aimed at promoting affordable and better quality housing in New York City. The primary goals of the ZQA and MIH programs are to: (1) support the creation of new affordable housing and senior care facilities, (2) help deploy public resources devoted to affordable housing more efficiently, and (3) encourage better residential buildings that are more compatible with their surroundings and which help enliven the pedestrian environment.

OneNYC

In 2011, the Mayor's Office of Long Term Planning and Sustainability released an update to *PlaNYC: A Greener, Greater New York*. It includes policies to address three key challenges the City faces over the next 20 years, including population growth, aging infrastructure, and global climate change. Elements of the plan are organized into six categories—land, water, transportation, energy, air quality, and climate change—with corresponding goals and objectives for each. In 2015, *One New York: The Plan for a Strong and Just City* (OneNYC) was released by the Mayor's Office of Sustainability and the Mayor's Office of Recovery and Resiliency. OneNYC builds upon the sustainability goals established by PlaNYC and focuses on growth, equity, sustainability, and resiliency.

The Future without the Proposed Actions (No-Action Condition)

Land Use

Primary Study Area (Proposed Rezoning Area)

As presented in Attachment A, "Project Description," in the 2023 future without the Proposed Actions, the primary study area's R6B and M1-1 zoning designations would remain in place. The maximum allowable FAR in the M1-1 district would remain at 1.0 (or up to 2.4 for allowed community facility uses). Residential uses are not permitted in M1-1 districts. The maximum allowable FAR in the R6B district would remain 2.0 for residential uses and up to 2.0 for community facility uses. Under the No-Action scenario, none of the lots within the proposed rezoning area are anticipated to be redeveloped. It is anticipated

that the fast food restaurant and three existing residential buildings would remain on the Development Site in the future without the Proposed Actions.

Secondary Study Area

There are four known projects that could be completed within 400 feet of the primary study area in the future without the Proposed Actions. Overall, the projects expected to be completely by 2023 are predominantly residential in nature, with an ongoing trend of redeveloping underutilized sites or renovating existing buildings to improve the housing stock. Additionally, more residential and commercial development is expected to be built as a result of the Pacific Park project to the west of the project area, however, the remaining buildings for this project are not expected to be completed by the 2023 analysis year. These projects are summarized in **Table C-2** and shown in **Figure C-3**.

Table C-2: No-Action Condition Projects[1]

Reference Number[2]	Project Location/Address	Development Program
1	860 Pacific Street	Commercial Building (4 stories): 47,722 gsf
2	873 Pacific Street	Residential Building (5 stories): 8 DUs
3	834 Pacific Street	Mixed Use (6 stories): 113 DUs, 1,999 gsf community facility
4	809 Atlantic Avenue	Mixed Use (29 stories): 366 DUs, 25,000 gsf retail, 19,500 gsf office, 27,029 gsf community facility

Notes:
[1] For purposes of analysis, all projects currently planned or under construction are assumed to be completed by the 2023 build year.
[2] See **Figure C-3**
Sources: DOB, PHA field visits December 2018.

Zoning and Public Policy

No changes to zoning regulations and public policies applicable to the Development Site and the study area are expected by 2023, and the area is expected to remain a mix of primarily residential and commercial districts.

The Future with the Proposed Actions (With-Action Condition)

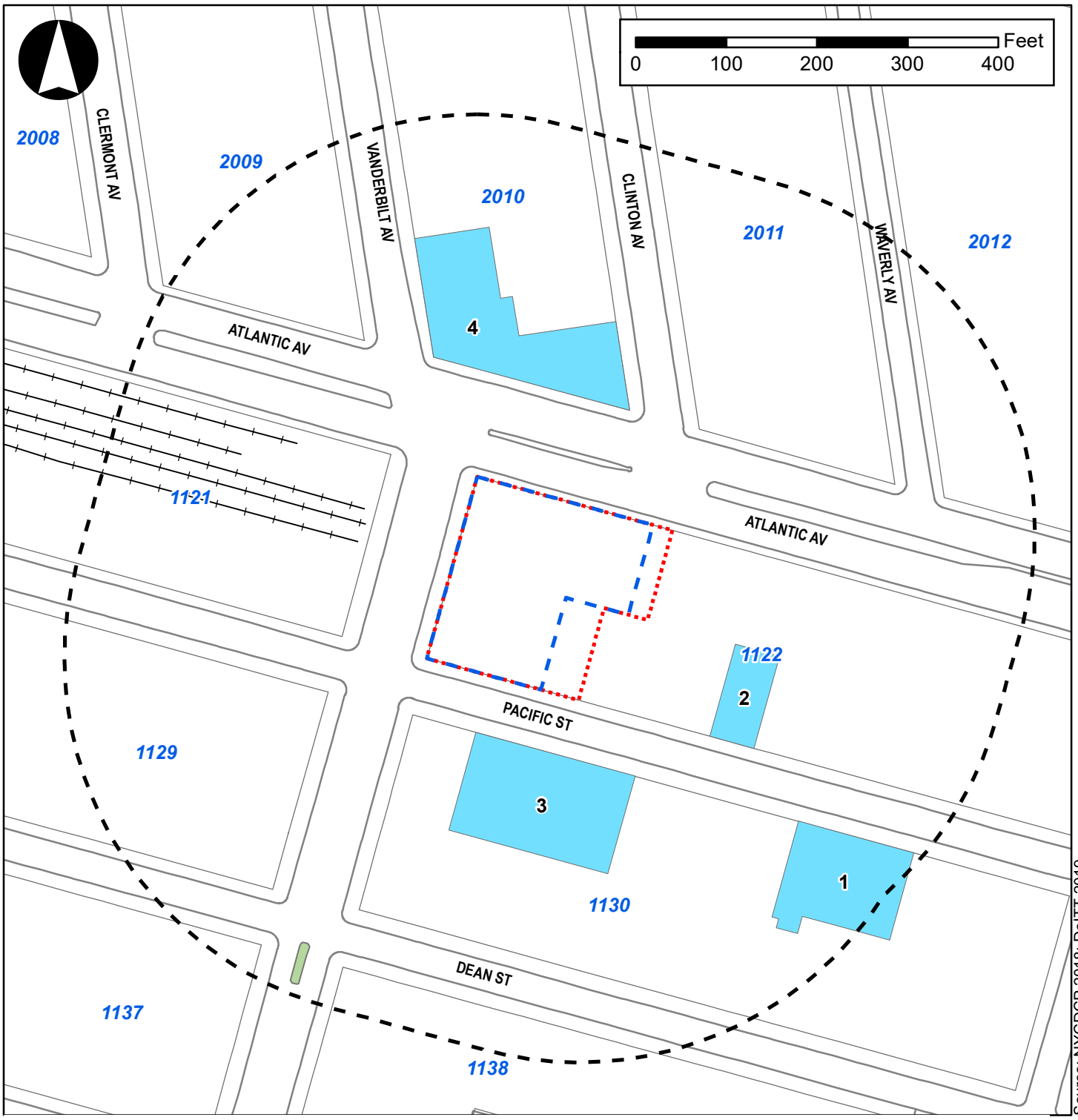
This section describes the land use, zoning, and public policy conditions that would result from the Proposed Actions by 2023 and evaluates the potential for the Proposed Actions to result in significant adverse impacts.

Land Use

Primary Study Area (Proposed Rezoning Area)

With approval of the Proposed Actions, the Applicant intends to redevelop the Development Site with an 18-story (195-foot tall; 205-feet tall to the bulkhead) building, with approximately 376,432 gross square feet (gsf). The Proposed Development will contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would

Figure C-3
No-Action Development Projects



Source: NYCDCP 2018; DoITT 2019

Legend

- Primary Study Area (Rezoning Area)
- Secondary Study Area (400-Feet Radius)
- Development Site
- 1 — No-Action Development Projects (refer to Table C-2)
- Railroad Tracks
- Open Space

be provided. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site, as the Applicant would provide affordable housing equivalent to 30 percent of the residential floor area pursuant to MIH Option 2.

The Proposed Actions would result in changes to land use within the primary study area by introducing residential uses that would not be permitted in the proposed rezoning area in the future without the Proposed Actions. In addition, commercial and community facility uses would be permitted at a greater density than would be allowed in the No-Action condition. The proposed residential uses would be consistent with uses already present in the surrounding area, as the secondary study area is largely defined by residential and mixed commercial/residential uses.

However, while the Applicant intends on developing the proposed project described above, because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) will be considered for conservative analysis purposes. Scenario 2 would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet. The total floor area ratio (FAR) for the alternate commercial RWCDS would be 5.52, which would be the maximum FAR under the proposed C6-3X and R6B zoning.

The Proposed Actions would not generate land uses that would be incompatible with surrounding uses, nor would they displace land uses in such a way as to adversely affect surrounding land uses. Therefore, the Proposed Actions would support land use trends, and no significant adverse land use impacts are expected.

Secondary Study Area

The secondary study area would not undergo any changes as a result of the Proposed Actions. The Proposed Actions would have no direct effect on land use in the secondary study area. As noted above, the secondary study area is predominantly comprised of residential, commercial, community facility, and mixed commercial/residential uses. Therefore, the Proposed Actions would not introduce any new land uses that would be incompatible with surrounding land uses, and the Proposed Actions would not represent a significant adverse impact on land use in the secondary study area in accordance with the criteria set forth in the *CEQR Technical Manual*.

Zoning

Primary Study Area (Proposed Rezoning Area)

In the future with the Proposed Actions, the primary study area would be rezoned from R6B and M1-1 to C6-3X (see **Figure C-2**). As shown in **Table C-3**, the proposed C6-3X (MIH) zoning would increase the allowable maximum density to 9.7 FAR for residential uses (R9X equivalent) and 9.0 for community facility uses; under the proposed zoning, commercial uses would be permitted up to 6.0.

TABLE C-3: Comparison of Existing and Proposed Zoning

	Existing M1-1	Existing R6B[1],	Proposed C6-3X[2]
Use Groups	4-14 and 16-17	1-4	1-12
Maximum FAR			
Residential	0.0	2.0	9.7
Community Facility	2.4	2.0	9.0
Commercial	1.0	0.0	6.0
Manufacturing	1.0	0.0	0.0

Source: *Zoning Resolution of the City of New York.*
Notes:
[1] Approximately 4,500 sf of the Development Site would remain zoned R6B
[2] R9X equivalent

The proposed zoning map and text amendments would create additional zoning capacity in a transit-accessible area to support new housing creation and increase the number of affordable housing units available in New York City. While the proposed C6-3X (MIH) district would permit development at a density greater than permitted under existing or No-Action condition, the proposed rezoning area's location along Atlantic Avenue, a wide street with excellent public transit service provided by the 2, 3, 4, 5, B, D, N, Q, R subway lines at the Atlantic Avenue Barclays Center station, is well-suited for additional development. In addition, the proposed C6-3X would activate the street and allow a consistent streetwall, retail continuity, and serve local residents. As such, the Proposed Actions would not result in significant adverse impacts to zoning in the primary study area.

Secondary Study Area

The secondary study area would not undergo any zoning changes as a result of the Proposed Actions. The Proposed Actions would have no direct effect on zoning in the secondary study area. The proposed zoning map and text amendments would be in keeping with the City's land use, zoning, and public policy objectives for the area. The proposed C6-3X (MIH) district would facilitate the development of affordable housing. The proposed zoning district would also permit retail development consistent with the land uses and zoning in the secondary study area. Notably, as outlined above, Atlantic Avenue and Vanderbilt Avenue serve as commercial corridors lined with a number of local retail and other commercial uses. In addition, C1-4, C2-3, C2-4, and C2-5 commercial overlays are mapped to the north, south and east of the proposed rezoning area. Further, a C6-3A zoning district is mapped directly to the north of the Development Site. For these reasons, the Proposed Actions would not represent a significant adverse impact on zoning in the secondary study area, in accordance with the criteria set forth in the *CEQR Technical Manual.*

Public Policy

The Proposed Project would be compatible and consistent with the public policies that currently apply to the Development Site and the surrounding area.

Housing New York

The Proposed Actions would contribute to the goals of *Housing New York* by providing approximately 95 affordable DUs. The affordable dwelling units under the With-Action Condition would provide the area with a much needed mix of new affordable housing and market rate units and would support the City's

efforts to increase the overall amount of affordable housing. Based on this information, the development under the With-Action Condition would be consistent with the policy goals and objectives of *Housing New York*. Overall, the Proposed Actions would not result in any significant adverse impacts to public policy.

OneNYC

The Proposed Actions would support OneNYC initiatives by constructing new multi-family housing, as well as commercial and community facility uses, on underbuilt land that is in close proximity to public transit, promoting transit use as well as walkability in the secondary study area. Therefore, the Proposed Actions would not conflict with this public policy.

I. INTRODUCTION

This attachment assesses whether the Proposed Actions would result in significant adverse impacts to the socioeconomic character of the area surrounding the Development Site in the Prospect Heights neighborhood of Brooklyn Community District (CD) 8. As described in the 2014 *City Environmental Quality Review* (CEQR) *Technical Manual,* the socioeconomic character of an area includes its population, housing and economic activities. Socioeconomic changes may occur when a project directly or indirectly changes these elements. Although some socioeconomic changes may not result in environmental 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 the future with the Proposed Actions, the Applicant proposes to construct a new 18-story (195-foot tall; 205-feet to the bulkhead) mixed-use building, with approximately 376,432 gross square feet (gsf)). The Proposed Project will contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units (DU), of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site. The Proposed Actions would result in a net increase of approximately 306 DUs, which exceeds the *CEQR Technical Manual* threshold of 200 dwelling units and warrants a preliminary socioeconomic analysis.

However, while the Applicant intends on developing the Proposed Project described above (Scenario 1), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) will be considered for conservative analysis purposes. As the Proposed Actions would permit a greater commercial FAR than the existing zoning permits, an alternate commercial With-Action RWCDS option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet (Scenario 2). As Scenario 2 would result in a net increase of approximately 225,540 gsf of commercial/community facility development, which exceeds the *CEQR Technical Manual* threshold of 200,000 sf commercial and/or community facility and warrants a preliminary socioeconomic analysis.

In accordance with *CEQR Technical Manual* guidance, the socioeconomic analysis considers whether the Proposed Actions could result in significant adverse socioeconomic impacts due to: (1) direct displacement of residential population from the Development Site; (2) direct displacement of existing businesses or institutions from the Development Site; (3) indirect displacement of residential population; (4) indirect displacement of businesses or institutions; and (5) adverse effects on a specific industry.

II. PRINCIPAL CONCLUSIONS

Indirect Residential Displacement

A preliminary assessment finds that the Proposed Actions would not result in significant adverse impacts due to indirect residential displacement. Per *CEQR Technical Manual* guidance, if the expected average incomes of the new population would exceed the average incomes of the study area populations, Step 2 of the preliminary assessment should be conducted. As discussed in detail below, it is anticipated that prospective tenants of the market-rate units would have incomes similar to the study area's estimated median household income. Therefore, it is expected that the average household income of the incremental development facilitated by the Proposed Actions would have similar average incomes of the existing population. According to the *CEQR Technical Manual*, if the expected average incomes of the new population would be similar to the average incomes of the study area populations, no further analysis is necessary. As the overall population introduced as a result of the Proposed Actions would be expected to have a similar average household income as the existing study area population, Step 2 is not warranted and no significant adverse indirect residential displacement impacts are anticipated as a result of the Proposed Actions.

Indirect Business Displacement

A preliminary assessment finds that the Proposed Actions would not result in significant adverse impacts due to indirect business displacement. According to the *CEQR Technical Manual*, indirect displacement of businesses or institutions could be an issue if an action would increase property values and thus rents throughout the study area, making it difficult for some categories of businesses to remain in the area. The Proposed Actions would increase the allowable density and intensity of uses at the Development Site, providing additional flexibility for economic growth.

The area surrounding the Development Site is an established mixed-use area that supports a dense and diverse amount of economic activity with an emerging office market. All of the uses contemplated under the Proposed Actions are well-established in the study area, and would not constitute new economic activities or alter existing economic patterns. The proposed office and local retail uses under Scenario 2 would be consistent with the existing and future mix of land uses in the study area and create new opportunities for businesses to expand and attract new companies. The Proposed Development would be consistent with recent mixed-use development in the study area.

III. METHODOLOGY

Under CEQR, the socioeconomic character of an area is defined by its population, housing, and economic activities. The assessment of socioeconomic conditions usually distinguishes between the socioeconomic conditions of an area's residents and businesses. However, proposed action(s) affect either or both of these segments in similar ways: they may directly displace residents or businesses; or they may alter one or more of the underlying forces that shape socioeconomic conditions in an area and thus may cause indirect displacement of residents or businesses. The objective of the CEQR analysis is to disclose whether any changes created by the proposed project would have a significant impact compared with what would happen in the future without the proposed project (i.e., the "No-Action condition").

Direct displacement is defined as the involuntary displacement of residents, businesses, or institutions from the actual site of (or sites directly affected by) a proposed project. Examples include the proposed

redevelopment of a currently occupied site for new uses or structures, or a proposed easement or right-of-way that would take a portion of a parcel and thus render it unfit for its current use. Since the occupants of a particular site are usually known, the disclosure of direct displacement focuses on specific businesses and employment and an identifiable number of residents and workers.

Indirect or secondary displacement is defined as the involuntary displacement of residents, businesses, or employees in an area adjacent to, or close to, a project site that results from changes in socioeconomic conditions created by a proposed project. Examples include rising residential rents in an area that result from a new concentration of higher-income housing introduced by a project, which ultimately could make existing housing unaffordable to lower income residents; a similar turnover of industrial to higher-rent commercial tenancies induced by the introduction of a successful office project in an area; or the flight from a neighborhood that can occur if a proposed project creates conditions that break down the community (such as a highway dividing the area). 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.

Even if projects do not directly or indirectly displace businesses, they may affect the operation and viability of a major industry or commercial operation in the City. 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 may involve the assessment of the economic impact of the project on the specific industry in question.

Determining Whether a Socioeconomic Assessment is Appropriate

According to the *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

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 currently contains three 3-story residential buildings with a total of ten dwelling units with an estimated 24 residents. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings. As the Proposed Actions would not directly displace more than 500 residents, an assessment of direct residential displacement is not warranted.

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

There are currently 2 commercial retail uses located on the Development Site, which are estimated to have a total of 15 employees. There is a free-standing fast food restaurant located on Block 1122, Lot 1.

The existing three-story, mixed-use residential commercial building at 856 Atlantic Avenue (Block 1122, Lot 10) currently accommodates a bar on the first floor, and residential space on the upper floors. As the Proposed Actions would not directly displace more than 100 employees, an assessment of direct business displacement is not warranted.

The Proposed Actions would not 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. As the Proposed Actions would not directly displace a business whose products or services are uniquely dependent upon its location, an assessment of direct business displacement is not warranted.

3. ***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 sf 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.***

Under Scenario 1, the Proposed Actions would include introduce a net increment of 306 residential units, and therefore would exceed the preliminary screening assessment threshold of 200 units warranting a preliminary assessment of indirect residential displacement. As such, the indirect displacement analysis provided below assesses the potential of the Proposed Actions to result in significant adverse impacts in regards to indirect residential displacement.

In addition, as discussed above, while the Applicant intends on developing the proposed project described above (Scenario 1), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) will be considered for conservative analysis purposes. The alternate RWCDS (Scenario 2) would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf. Therefore, an assessment of potential indirect business displacement is warranted pursuant to *CEQR Technical Manual* guidance.

4. ***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.***

Under Scenario 1, the Proposed Actions would introduce a net increase of approximately 50,922 gsf of commercial space in the Project Area, which is below the 200,000 sf CEQR threshold warranting assessment of indirect business displacement due to market saturation. In addition, the new residential population introduced by the Proposed Actions is expected to increase demand for retail and services generally, both for the new retail as well as for existing businesses. As such, an analysis of indirect business displacement is not warranted for the Proposed Actions under Scenario 1.

Under Scenario 2, the Proposed Actions would not introduce retail uses in excess of 200,000 sf on the Development Site; therefore, an assessment of potential indirect business displacement due to retail market saturation is not warranted. The Proposed Actions under Scenario 2 would not add to, or create, a retail concentration that may draw a substantial amount of sales from existing businesses within the study area to the extent that certain categories of business close and vacancies in the area increase, thus resulting in a potential for disinvestment on local retail streets.

5. ***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 and 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 Actions would not have a significant adverse impact on specific industries. The Proposed Actions would not displace any businesses that is critical to the viability of any specific industry within or outside of the study area. Therefore, the Proposed Actions would not directly or indirectly affect business conditions in any industry or category or business within or outside of the study area, and would not substantially reduce employment or impair viability in a specific industry or category of business.

Based on the screening assessment presented above, the Proposed Actions and subsequent RWCDS conditions (Scenario 1) warrant an analysis of indirect residential displacement. Under Scenario 2, the Proposed Actions warrant an analysis of indirect business displacement.

Analysis Format

Based on *CEQR Technical Manual* guidelines, the analysis of indirect residential displacement begins with a preliminary assessment. The objective of the preliminary assessment is to learn enough about the potential effects of the Proposed Actions and resultant RWCDS to either rule out the possibility of significant adverse impacts or determine that a more detailed analysis is required to fully determine the extent of the impacts. A detailed analysis, when required, is framed in the context of existing conditions and evaluates the changes to those conditions in the With-Action condition as compared with the changes that would be expected in the No-Action condition. In conjunction with the land use task, specific development projects expected to occur by the project's analysis year are identified. These projects are described in terms of the possible changes to socioeconomic conditions that they would cause, including potential population increases, changes in income characteristics of the affected area, changes to the rents or sale prices of residential units, new commercial or industrial uses, or changes to employment or retail sales. Those conditions are then compared with the future with the Proposed Actions to determine the potential for significant adverse impacts. A preliminary assessment was sufficient to conclude that the Proposed Actions and resultant RWCDS would not result in any significant adverse socioeconomic impacts due to indirect residential displacement.

Study Area Definition

To assess these socioeconomic issues, information was gathered regarding the surrounding area's demographic characteristics, housing inventory, and housing market. Typically, the socioeconomic study area boundaries are similar to those of the land use study area. The study area generally encompasses the area affected by the Proposed Actions (i.e., directly affected area or primary study area), and an adjacent area (study area) within ¼-mile or ½-mile, depending on project size and area characteristics. The socioeconomic assessment seeks to assess a project's potential to change socioeconomic character relative to the study area populations (i.e., a project that would result in a relatively large increase in population may be expected to affect a larger study area).

Scenario 1

The *CEQR Technical Manual* explains that for projects that would increase the residential population by more than five percent as compared to the population expected to reside in the ¼-mile study area in the No-Action condition, a ½-mile study area is appropriate. As discussed in Attachment A, "Project Description," in accordance with the City's MIH policy, under the Proposed Actions, the Applicant will choose either MIH Option 1 or 2, which would require 25 or 30 percent of the residential floor area be designated as affordable housing units for residents with incomes averaging between 60 and 80 percent of AMI and none of the units exceeding 130 percent of AMI. As Options 1 and 2 require that at least 25 or 30 percent of the residential floor area be reserved for residents with incomes averaging 60 to 80 percent of AMI, some of these MIH units would be affordable to households earning more than 60 to 80 percent of AMI. For conservative CEQR analysis purposes, the socioeconomic analysis assumes that 25 percent of the overall residential floor area (approximately 79 DUs) of the RWCDS is assumed to be set aside for "affordable" residential units. Therefore, while the Proposed Project would include 95 affordable dwelling units, for conservative CEQR analysis purposes, 79 affordable DUs will be analyzed as part of the reasonable worst-case development scenario RWCDS. Therefore, the RWCDS under Scenario 1 for the Proposed Actions would result in an incremental (net) increase of approximately 306 DUs (227 market rate DUs and 79 affordable DUs).

Based on housing projections provided by the New York City Department of City Planning's Housing and Economic Development Division (HED), the population within the ¼-mile radius would be 18,044 by 2022[1]. In the future with the Proposed Actions, the RWCDS would increase the ¼-mile population by an estimated 692 people[2] (approximately 3.8 percent), warranting a ¼-mile study area.

As socioeconomic analyses depend on demographic data, it is appropriate to adjust the study area boundary to conform to the census tract delineation that most closely approximates the desired radius (in this case, a ¼-mile radius surrounding the boundary of the proposed rezoning area). For this analysis, the five census tracts that comprise the socioeconomic study area are shown in **Figure D-1,** and include Brooklyn census tracts 163, 199, 201, 203, and 205. The ¼-mile socioeconomic study area is roughly bounded by Greene Avenue to the north, Grand Avenue to the east, Park Place/Sterling Place to the south, and Carlton Avenue to the west.

Scenario 2

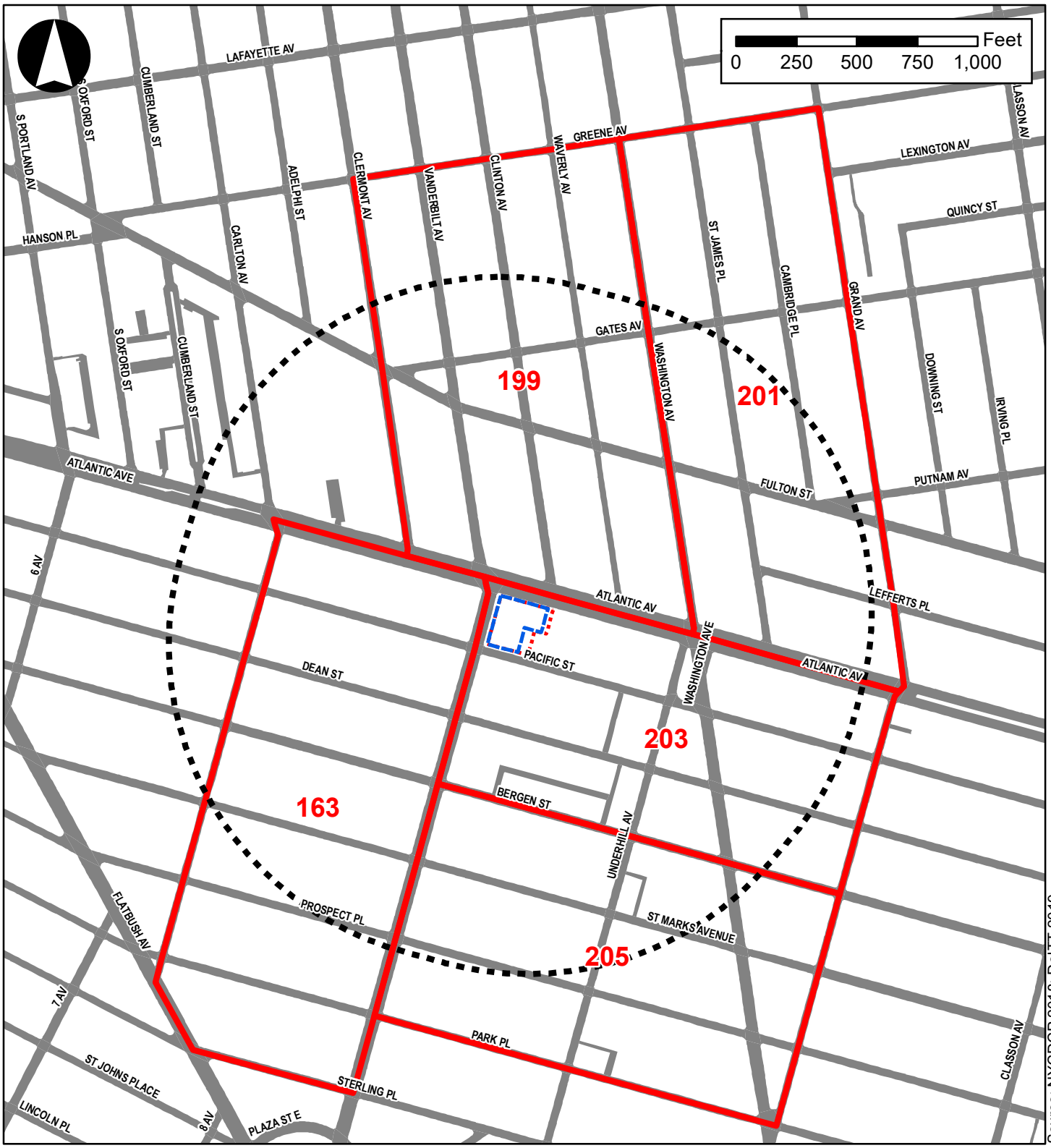
Typically, the socioeconomic study area boundaries are similar to those of the land use study area. The study area encompasses the Development Site and adjacent area within 400 feet, ¼-mile, or ½-mile, depending on project size and area characteristics. As the Development Site consists of approximately 38,800 sf of lot area on a portion of one block, the study area used for the socioeconomic preliminary assessment of indirect business displacement is ¼-mile area (see **Figure D-1**).

The boundary of the socioeconomic study area was modified to match the census tracts that most closely define a ¼-mile perimeter surrounding the Development Site (**Figure D-1**). By conforming to census tract boundaries, the socioeconomic analysis more accurately applies Census data to depict the demographic characteristics of the surrounding area. In addition, in accordance with *CEQR Technical Manual* guidance, the indirect residential displacement analysis considers an area "near" the study area

[1] Estimate of incremental residential population provided by HED.

[2] Estimate of incremental residential population resulting from the Proposed Actions assumes 2.27 persons per dwelling unit, which is based on the average household size for Brooklyn Community District 8 according to the 2014-2018 American Community Survey (ACS) via DCP Population Factfinder.

Figure D-1
Socioeconomic Conditions Study Area



Source: NYCDCP 2018; DoITT 2019

Legend

- Rezoning Area
- Development Site
- Quarter-Mile Radius
- 201 Study Area Census Tracts
- Roadways

(i.e., within a ¼-mile radius of the study area) to examine real estate market trends and ascertain whether the surrounding area has experienced a readily observable trend toward increasing rents and the likely effect of the Proposed Actions on such trends.

IV. PRELIMINARY ASSESSMENT

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 and that causes increased property values in the area. Increased property values can lead to increased rents in non-regulated rental housing units, which can make it difficult for some existing residents to afford to stay in their homes. Pursuant to *CEQR Technical Manual* guidance, the indirect residential displacement assessment aims to determine whether the Proposed Actions would either introduce a trend or accelerate an existing trend of changing real estate market conditions that may have the potential to displace a vulnerable residential population and substantially change the socioeconomic character of the neighborhood. Residents who are homeowners, or who are renters living in rent regulated[3] or subsidized housing units would not be vulnerable to rent pressures according to *CEQR Technical Manual* guidance.

This preliminary assessment follows the step-by-step preliminary assessment guidance described in Section 322.1 of the 2014 *CEQR Technical Manual.*

Step 1: Determine if the proposed project would add new population with higher average incomes compared to the average incomes of the existing populations and any new population expected to reside in the study area in the future without the proposed project.

Household income characteristics for the study area population are described using the average (or mean) and median household incomes. The median household income represents the mid-point of all household incomes in a study area, and the mean household income is calculated by dividing aggregate income by the total number of households in a study area. The presence of higher income households raises the area's mean income, sometimes substantially higher than the median (or mid-point) of household incomes in a study area.

As shown in **Table D-1**, household incomes in the study area are higher than the larger borough and comparable to the greater city. According to 2014-2018 Five-Year ACS estimates, the mean annual household income of residents living in the study area is approximately $137,214, which is an increase as compared to 2006-2010 when the mean household income was an estimated $96,234 (see **Table D-1**).[4]

Table D-1: Household Income Characteristics in the ¼-Mile Study Area, Brooklyn, and New York City[1,2]

[3] Rent regulated housing includes both rent-controlled and rent stabilized apartments that are protected from steep rent increases and offer tenants greater legal protections than those living in market-rate housing.

[4] Based on the MOE for the mean household income of the study area according to the 2014-2018 Five-Year ACS (an MOE of $10,936), the average household income could range from $126,278 to $148,150.

	Median Household Income			Mean Household Income		
	2006-2010 ACS	2014-2018 ACS	Percent Change	2006-2010 ACS	2014-2018 ACS	Percent Change
¼-Mile Study Area	***$79,508***	***$101,766***	***Increase***	***$96,234***	***$137,214***	***Increase***
Brooklyn	$50,452	$56,446	+11.9%	$72,315	$85,910	+18.8%
New York City	$58,109	$60,762	4.6%	$89,899	$97,647	+8.6%

Sources: Bureau of the Census, 2014-2018 Five-Year ACS Estimates, as reported on DCP's Population Factfinder (https://popfactfinder.planning.nyc.gov/profile/44098/demographic in August 2020)
Notes: [1] The statistical reliability of the data included in this table has been vetted using DCP's NYC Population FactFinder. For the study area, only the directionality of change over time was statistically reliable and therefore reported for both median and mean household income.
[2] All dollar figures are in 2018 dollars.

As shown in **Table D-1**, the mean annual household income of the study area exceeds the mean annual household income in Brooklyn ($85,910) and in New York City ($97,647). Trends in the household income indicate that the mean household income is increasing. As shown in **Table D-1**, the average household income in Brooklyn has increased by more than eighteen percent since 2006-2010, and the average annual household income in New York City increased by almost nine percent during the same time.

In terms of median household income, study area households have a higher median household income compared to Brooklyn and New York City (see **Table D-1**). According to 2014-2018 Five Year ACS data, the median household income for the study area is an estimated $101,766,[5] as compared to $56,446 for Brooklyn and $60,762 for New York City households, respectively. Consistent with trends in mean household income, median household income levels have also increased in the study area, borough and greater city. As shown in **Table D-1**, between the 2006-2010 and the 2014-2018 Five Year ACS, the median household income in New York City increased by almost five percent.

Mean household income levels in all three geographic areas are higher than median household income levels indicating the presence of higher income households in the respective areas. **Table D-2** illustrates the distribution of household incomes within the study area, Brooklyn and in New York City. As shown in **Table D-2**, nearly 32 percent of households in the study area earned $100,000 or more, 19 percent of households earned $200,000 or more, and approximately 23 percent of households earned less than $50,000. In comparison, approximately 20 percent of Brooklyn's households have annual household incomes that is equal or greater than $100,000 and approximately 46 percent of households earned less than $50,000. Approximately 8 percent of Brooklyn's households have an annual household income of $200,000 or more.

TABLE D-2: Household Income Distribution, 2014-2018[1]

	Total Households	Households Earning Less than $25,000		Households Earning $25,000 to $49,999		Households Earning $50,000 to $99,999		Households Earning $100,000 to $199,999		Households Earning $200,000 or more	
		#	%	#	%	#	%	#	%	#	%
1/4-Mile Study Area	***6,804***	***913***	***13.4%***	***673***	***9.9%***	***1,766***	***26%***	***2,145***	***31.5%***	***1,307***	***19.2%***
Brooklyn	950,856	249,320	26.2%	187,532	19.7%	242,693	25.2%	192,094	20.2%	79,217	8.3%
New York City	3,154,103	772,160	24.5%	590,856	18.7%	807,932	25.6%	662,176	21.0%	320,979	10.2%

Source: Bureau of the Census, 2014-2018 Five-Year ACS Estimates, as reported on DCP's Population Factfinder (https://popfactfinder.planning.nyc.gov/profile/44098/demographic)
Notes: [1] The statistical reliability of the data included in this table has been vetted using DCP's NYC Population FactFinder.

[5] Based on the MOE for the median household income of the study area according to the 2014-2018 Five-Year ACS (an MOE of $11,665), the average household income could range from $90,101 to $113,431.

Although ACS estimates do not provide specific rent information according to regulation status or unit size, these data can provide a general picture about the rate at which housing costs are changing in a neighborhood. According to 2014-2018 Five-Year ACS estimates, the median gross rent in the study area was an estimated $2,014 per month in 2014-2018, as compared to $1,605 per month in 2006-2010 (see **Table D-3**). The median gross rent in the study area is higher than the larger borough ($1,374) and the City as whole ($1,396). As shown in **Table D-3**, in terms of existing residential rents and trends, residential rents have increased in the study area, Brooklyn, and the City since 2006-2010. The gap between how much households are earning and how much households are paying for housing is growing in the study area, as household income levels are largely rising at slower rates as compared to rent increases. Households throughout the City are struggling to adjust to higher rents.

TABLE D-3: Median Gross Rent (2006-2010, 204-2018 ACS)[1,2]

	2006-2010	2014-2018	Percent Change
1/4-Mile Study Area	***$1,605***	***$2,014***	***Increase***
Brooklyn	$1,178	$1,374	16.6%
New York City	$1,237	$1,396	12.9%

Source: Bureau of the Census, 2006-2010 and 2014-2018 Five-Year ACS Estimates, as reported on DCP's Population Factfinder (https://popfactfinder.planning.nyc.gov/profile/44098/demographic)
Notes: [1] The statistical reliability of the data included in this table has been vetted using DCP's NYC Population FactFinder.
[2] All dollar figures are in 2018 dollars.

U.S. Census and ACS data do not provide specific rent information according to regulation status or unit size, but instead paint a general picture about the rate at which housing costs are changing in a neighborhood. Average neighborhood rents are therefore used (below) to provide a fuller understanding of where the market is today. **Table D-4** summarizes current average rents for apartments for the study area. The average rents presented in the table are generally higher than the data presented in the 2014-2018 Five Year ACS estimates.

Table D-4: Average Rents in Clinton Hill in August 2020

	Studio	One-Bedroom	Two-Bedroom
Clinton Hill	$2,141	$2,745	$3,357

Source: MNS Real Impact Real Estate, Brooklyn Rental Market Report, August 2020

In the future with the Proposed Actions, the proposed rezoning area would be mapped as a MIH Area, which would set mandatory affordable housing requirements pursuant to the MIH program and require a share of new housing be permanently affordable. Under the Proposed Actions, the production of affordable housing would be a condition of any residential development in the proposed rezoning area and is expected to help preserve affordable housing in the area. There would be no expiration to the affordability requirement of housing units created through MIH, making these units a permanent reservoir of affordable housing in the area, a key policy to meet the city's *Housing New York* goal of fostering diverse livable communities.

The amount of affordable housing units produced and resulting range of affordability presented would ultimately depend on the extent to which MIH Option is utilized and selected through the ULURP process. HPD, as a supporting and regulatory agency, would at a later date establish levels of affordability for the proposed development in coordination with the applicants. The affordability requirements would be defined and ensured through regulatory agreements with HPD.

For purposes of a conservative CEQR analysis, the RWCDS assumes that approximately 25 percent of the overall residential floor area at each of the projected development sites would be set aside as "affordable" residential units, and that "affordable" would refer to residential units set aside for families/residents earning an average of approximately 80 percent of AMI. Based on this assumption, the Proposed Actions would introduce up to 227 market-rate housing units (net), and 79 units occupied by families/residents earning an average of 80 percent of AMI.[6]

The levels of affordability would be based on percentages of AMI defined by the U.S. Department of Housing and Urban Development (HUD) for the region (New York, NY HUD Metro Fair Market Area [FMA]); the 2020 income limits by family size for the New York City region are presented in **Table D-5**. These levels will change over time and their future levels cannot conclusively be established at this time.

TABLE D-5: 2020 New York City Area AMI

Family Size	30% of AMI	40% of AMI	50% of AMI	60% of AMI	80% of AMI	100% of AMI	130% of AMI
1	$23,880	$31,840	$39,800	$47,760	$63,680	$79,600	$103,480
2	$27,300	$36,400	$45,500	$54,600	$72,800	$91,000	$118,300
3	$30,720	$40,960	$51,200	$61,440	$81,920	$102,400	$133,120
4	$34,110	$45,480	$56,850	$68,220	$90,960	$113,700	$147,810

Source: NYCHPD, https://www1.nyc.gov/site/hpd/services-and-information/area-median-income.page

To estimate the average household income of residents introduced by the Proposed Actions, the incomes of future residents in both the market-rate and affordable units at the development sites have been projected. Housing is considered affordable if it costs about one-third or less. HUD defines families who pay more than 30 percent of their income for housing as rent-burdened.

As shown in **Table D-5**, according to HUD, two-person and three-person families in the New York City region would be eligible for the affordable housing units in the proposed rezoning area if they were earning between $72,800 and $81,920 annually, respectively, which is 80 percent of AMI.[7] Since the study area's average household size is 2.27 persons per household, it is assumed that the average income of a family living in an affordable unit would be between $72,800 and $81,920.

For the market-rate units, research into current market-rate asking rents in the study area (summarized in **Table D-6**) and the assumption that incoming market-rate renters would be spending approximately 30 percent of their household income on rent[8] have been used to estimate the expected income level of future market-rate tenants.

TABLE D-6: Estimated Income for the Proposed Market-Rate Units

Unit Type	Average Rent	Estimated Average Monthly Income[1]	Estimated Average Yearly Income
Studio	$2,141	$7,136	$85,640
One- Bedroom	$2,745	$9,150	$109,800
Two Bedroom	$3,357	$11,190	$134,280
Average	$2,747	$9,156	$109,880

Notes: [1] Average household incomes were imputed using HUD's 30 percent guideline and were rounded to nearest hundredth.
Source: MNS Real Impact Real Estate, Brooklyn Rental Market Report, August 2020

[6] The affordable units produced under MIH could be available to households earning 80 percent of AMI or less. Given this socioeconomic analysis calculates the range based on 80 percent AMI, the actual incomes of residents living in these affordable dwelling units could be lower.
[7] https://www1.nyc.gov/site/hpd/services-and-information/area-median-income.page
[8] The Department of Housing and Urban Development (HUD) defines families who pay more than 30 percent of their income for housing as cost burdened.

Assuming that the incoming market-rate renters would be spending approximately 30 percent of their income on rent, a person renting a market-rate unit as a result of the Proposed Actions is expected to have an income between approximately $85,640 and $134,280, depending on the unit type (see **Table D-6**). Assuming that the mix of unit types would be similar to the current distribution within the study area, a household renting a market-rate unit that would be available as a result of the Proposed Actions would have an average income of approximately $109,880.

As noted above, the Proposed Actions and associated RWCDS would result in an increment of 306 dwelling units, of which it is assumed that roughly 79 would be affordable to families making 80 percent of AMI, and 227 would be market rate. The average income of a household with rental assistance would be $81,920 annually, and the average income of a household in a market-rate unit would be $109,880, which is below the study area's current mean household income of $137,214 (see **Table D-1** above). The projected incomes are also anticipated to be consistent with that of the future study area population.

Based on the *Step 1 Analysis*, the Proposed Actions' generated population would be expected to have incomes that are similar or lower than the existing and future study area populations. The Proposed Actions are not expected to introduce a new concentration of higher-income housing that could substantially alter rental market conditions in the study area. According to *CEQR Technical Manual* guidance, Steps 2 and 3 of the indirect residential displacement analysis are not warranted. Therefore, based on *CEQR Technical Manual* guidance, the Proposed Actions are not expected to result in significant adverse impacts due to indirect residential displacement.

Indirect Business and Institutional Displacement

The objective of the indirect business and institutional displacement preliminary assessment is to determine whether the Proposed Actions could potentially introduce trends that would make it more difficult for nearby existing businesses that provide products or services essential to the local economy or that are targeted to be preserved in their current locations under adopted public plans to remain in the area. A proposed action could introduce such a trend by causing a marked increase in rents and property values in the area (such as by stimulating the demand for more lucrative land uses and thus redevelopment or by increasing the demand for new commercial or retail services with which the existing businesses cannot compete). Additionally, it could directly displace businesses or residents who serve as suppliers or the customer base for nearby businesses, affecting their viability or altering the desirability of their existing location. Finally, it could create enough new retail space to draw substantial sales from existing businesses (i.e., a market saturation impact).

In most cases, the issue for indirect displacement of businesses is that an action would markedly increase property values and rents throughout the study area, making it difficult for some categories of businesses to remain in the area. Pursuant to *CEQR Technical Manual* guidance, the preliminary assessment of indirect business displacement examines the following circumstances described in Section 322.2 of Chapter 5 of the *CEQR Technical Manual:*

Would the Proposed Actions introduce a trend that increases commercial property values, making it difficult for businesses essential to the local economy—or a business that is the subject of regulations or publicly adopted plans to preserve, enhance, or otherwise protect it—to remain in the study area?

As shown in **Table D-6**, as of 2017, there were approximately 2,787 private employees in the 0.25-mile study area. These employees represented nearly 0.45 percent of Brooklyn's total private employment and

roughly 0.1 percent of the private employment in all of New York City. Private employment within the study area is distributed amongst many industrial sectors; however, as shown in **Table D-6**, the accommodation and food services sector dominates and accounts for nearly 27 percent of private employment (742 jobs) in the study area. The health care and social assistance sector accounts for the next largest percentage of employment (approximately 21 percent) in the study area, and employs 582 workers, followed by educational services (approximately 11 percent), which employs 302 workers. The retail trade and manufacturing sectors each accounted for nearly 8 percent and 2.5 percent, respectively, of employment in the study area and employed 221 and 70 workers, respectively. Combined with other industrial sectors in the study area (including manufacturing, wholesale trade, transportation, construction, and utility), these sectors collectively employ approximately 354 workers. This employment accounts for approximately 13 percent of the study area's total private employment, a lower percentage as compared with Brooklyn (near 16 percent) and similar to New York City as a whole (approximately 13 percent). Office workers (finance and insurance; professional, scientific, and technical services; and management of companies and enterprises) comprised about 7 percent of the workforce within the study area, as compared to office workers in Brooklyn, which comprised approximately 10 percent of the borough's total workforce in 2017.

TABLE D-6
2017 Estimated Private Employment in the 0.25-Mile Study Area[1], Brooklyn, and New York City

	0.25-Mile Study Area		Brooklyn		New York City	
	Employment	**Percent**	**Employment**	**Percent**	**Employment**	**Percent**
Agriculture, Forestry, Fishing & Hunting	2	0.1%	136	0.0%	344	0.0%
Mining, Quarrying, and Oil & Gas Extraction	0	0.0%	0	0.0%	46	0.0%
Utilities	0	0.0%	4,666	0.7%	17,831	0.5%
Construction	118	4.2%	32,262	5.2%	150,324	3.9%
Manufacturing	70	2.5%	21,165	3.4%	74,085	1.9%
Wholesale Trade	109	3.9%	25,642	4.1%	149,701	3.9%
Retail Trade	221	7.9%	78,537	12.6%	357,125	9.3%
Transportation & Warehousing	57	2.0%	19,747	3.2%	124,186	3.2%
Information	71	2.5%	10,776	1.7%	216,551	5.6%
Finance & Insurance	9	0.3%	16,610	2.7%	336,271	8.7%
Real Estate & Rental and Leasing	89	3.2%	18,760	3.0%	133,369	3.5%
Professional, Scientific, & Technical Services	121	4.3%	22,894	3.7%	415,446	10.8%
Management of Companies & Enterprises	0	0.0%	2,938	0.5%	77,425	2.0%
Admin. & Support, Waste Management & Remedi	7	0.3%	31,790	5.1%	254,541	6.6%
Educational Services	302	10.8%	34,980	5.6%	194,847	5.1%
Health Care & Social Assistance	582	20.9%	215,254	34.5%	718,187	18.7%
Arts, Entertainment, & Recreation	22	0.8%	8,460	1.4%	90,040	2.3%
Accommodation & Food Services	742	26.6%	50,049	8.0%	356,526	9.3%
Other Services (excl. Public Admin.)	265	9.5%	29,875	4.8%	178,962	4.7%
Total	2,787	100.0%	***624,541***	***100%***	***3,845,807***	***100%***

Notes:
[1]The boundary of the 0.25-Mile socioeconomic study area was modified to match the five census tracts (Brooklyn Census tracts 163, 199, 201, 203, 205) that most closely define the 0.25-mile (i.e., are at least 50 percent within the 0.25-mile perimeter around the Development Site).
Source: Employment data obtained from the U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics.

Within the last decade, there has been a shift in the geography of employment in the City and a trend of job growth in the outer boroughs. Many businesses are seeking space outside of Manhattan in areas close to public transportation and near growing residential neighborhoods, such as Downtown Brooklyn, DUMBO, Williamsburg and Long Island City, which have more affordable rents than the established Manhattan office markets. Brooklyn is emerging as a tech hub attractive to startups, innovation and creative firms. The Brooklyn office market has expanded rapidly in the first decades of the 21st century.

According to the New York State Comptroller's *Economic Snapshot of Brooklyn* report from June 2018 and *New York City Employment Trends* from April 2019, private sector job growth has been strong in the borough of Brooklyn since the recession ended in 2009 and has exceeded rates experienced in the greater City. Brooklyn accounted for 26 percent of all private sector jobs created in New York City between 2009 and 2019, and had the highest rate of private sector job growth of all five boroughs with 46 percent increase.

Most businesses in Brooklyn are relatively small with 84 percent of firms employing fewer than 10 workers and 71 percent with less than five workers. However, the number of businesses in Brooklyn has increased by 32 percent since 2009, exceeding growth rates experienced in the other four boroughs and outpacing the Citywide rate by nearly 50 percent. Except for manufacturing, which experienced a slight decrease, the number of firms increased in each business sector in Brooklyn. The tech sector has become one of the borough's most rapidly growing industries, increasing its employment by 57 percent since 2009, which has escalated office space demand.

The Proposed Actions are not expected to alter existing economic patterns in the primary or secondary study areas. As described in **Attachment C, "Land Use, Zoning, and Public Policy,"** the area surrounding the rezoning area is an established mixed-use community.

As shown in **Table D-75**, private employment in the 0.25-mile study area has increased by slightly more than 5 percent between 2014 and 2017. Most of this employment growth has occurred within the accommodation and food services and health care and social assistance, which combined added nearly 279 jobs in the study area.

TABLE D-7
Comparison of 2014 and 2017 Estimated Private Employment in the 0.25-Mile Study Area[1]

	2014		2017		Change 2014 to 2017	
	Employment	**Percent**	**Employment**	**Percent**	**Employment**	**Percent**
Agriculture, Forestry, Fishing & Hunting	8	0.3%	2	0.1%	-6	-0.2%
Mining, Quarrying, and Oil & Gas Extraction	0	0.0%	0	0.0%	0	0.0%
Utilities	0	0.0%	0	0.0%	0	0.0%
Construction	108	4.1%	118	4.2%	10	0.1%
Manufacturing	232	8.8%	70	2.5%	-162	-6.3%
Wholesale Trade	90	3.4%	109	3.9%	19	0.5%
Retail Trade	217	8.2%	221	7.9%	4	-0.3%
Transportation & Warehousing	121	4.6%	57	2.0%	-64	-2.5%
Information	61	2.3%	71	2.5%	10	0.2%
Finance & Insurance	3	0.1%	9	0.3%	6	0.2%
Real Estate & Rental and Leasing	37	1.4%	89	3.2%	52	1.8%
Professional, Scientific, & Technical Services	82	3.1%	121	4.3%	39	1.2%
Management of Companies & Enterprises	5	0.2%	0	0.0%	-5	-0.2%
Admin. & Support, Waste Management & Remediation	41	1.6%	7	0.3%	-34	-1.3%
Educational Services	343	13.0%	302	10.8%	-41	-2.2%
Health Care & Social Assistance	517	19.6%	582	20.9%	65	1.3%
Arts, Entertainment, & Recreation	35	1.3%	22	0.8%	-13	-0.5%
Accommodation & Food Services	528	20.0%	742	26.6%	214	6.6%
Other Services (excl. Public Admin.)	212	8.0%	265	9.5%	53	1.5%
Total	**2,640**	**100.0%**	**2,787**	**100%**	**147**	**5.3%**

Notes:
[1]The boundary of the 0.25-Mile socioeconomic study area was modified to match the three census tracts (Brooklyn Census tracts 163, 199, 201, 203, 205) that most closely define the 0.25-mile (i.e., are at least 50 percent within the 0.25-mile perimeter around the Development Site).
Source: Employment data obtained from the U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics.

As reflected in employment data, the study area is increasingly attracting business establishments that cater to surrounding residential areas, including restaurants, cafes, and bars. There is an existing well-established trend in the study area toward commercial development. New commercial development has primarily consisted of restaurant and hospitality uses.

According to the City's PLUTO data, there is approximately 812,169 sf of office space and 307,775 sf of retail space in the 0.25-mile study area. Within the study area, new commercial development and conversions have largely tended toward retail uses and a limited amount of office. However, Brooklyn as a whole has seen a significant increase in its office inventory in Downtown Brooklyn, DUMBO, the Navy Yard and Williamsburg over that past five years. This includes the approximately 1.2 million sf Dumbo Heights, a five-building complex in DUMBO, the approximately 400,000 sf Empire Stores development, also in DUMBO, as well as the approximately 1 million sf Building 77 renovation and the new approximately 675,000 sf Dock 72 building, both within the Brooklyn Navy Yard.

Located across Atlantic Avenue from the Development Site at 785 Atlantic Avenue, is a 661,850 gsf office building. The building houses a variety of community facility offices including office space for NYCHA, the Brooklyn Medicaid Office, the League Education & Treatment Center, the Mutual Housing Association of New York, and the NYC Human Resources Administration Job Center. There are also smaller office buildings located within the study area that house a variety of office uses. There is a 27,450 gsf office building located at 937 Fulton Street that houses the START Treatment and Recovery Center. There is also a 25,012 gsf office building located at 594 Dean Street that houses Industrious Brooklyn, a coworking and office sharing company.

Located just outside the study area, to the west of the Development Site, there is a concentration of office and retail uses at Atlantic Terminal and Atlantic Center. Atlantic Center is a 394,000 gsf mall that contains national retailers such as Old Navy, Marshall's, and Burlington. It also includes a Stop & Shop grocery store. Atlantic Terminal includes a 14-story commercial building with 150,000 gsf of Class A office space and 400,000 gsf of retail on four levels.

The Proposed Actions, under Scenario 2, would facilitate the construction of a new a multi-level, commercial building that would create new employment opportunities in the area. The Proposed Actions would introduce approximately 225,540 gsf of new development, comprised of 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses.

The site is appropriate for additional density, given its proximity to transit and would provide increased walk-to-work opportunities in Brooklyn Community District 8. The Development Site is also located in a developed residential and commercial area. The Proposed Development would contribute to a diverse mix of business uses and employment in the surrounding area. Consistent with the City's *New York Works* jobs plan of promoting the creation of new work space that meets the needs of city's economy, supporting office and professional space growth in emerging markets throughout the five boroughs, and ensuring that there is space available for companies to grow and people are able to work closer to where they live. As described above, the surrounding neighborhoods of Fort Greene, Prospect Heights, and Clinton Hill have experienced significant residential growth, and while some new office spaces have been completed in the surrounding area, the amount of existing office space in the surrounding area has not expanded sufficiently to meet the needs of the growing residential population. Moreover, as detailed in the *New York Works* report, there is increased demand for office space outside Manhattan to create jobs closer to where New Yorkers live, including in commercial and industrial areas in Brooklyn, Queens, Staten Island, and the Bronx, to improve worker commute times and reduce the burden on transit infrastructure. The new commercial office space facilitated by the Proposed Actions under Scenario 2 would help meet a

borough-wide demand for more commercial office space and locate offices closer to where workers live, consistent with the goals of *New York Works*.

The Proposed Actions would not introduce any new uses to the study area that would substantially alter existing economic patterns, nor would the Proposed Actions add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to change existing economic patterns. The proposed mix of commercial and community facility uses are expected to be consistent with the existing mix of uses in the study area. Although the proposed office space would be substantial and the Proposed Development would be one of the largest office building within the study area, office uses are already currently located in, and planned for, the study area. The 0.25-mile study area is increasingly becoming more diverse in terms of the types of businesses and development occurring in the area. While the Proposed Actions would contribute to an existing trend of increasing commercial development in the study area, any upward rent pressure experienced by existing businesses in the area would be present in the future without the Proposed Actions. As described above, change is already occurring in the study area, the area is already experiencing a trend of increase in commercial uses and most recent investment in the area has been commercial development.

The area to the west of the Development Site includes the Atlantic Yards railyard, which is currently being developed as a large-scale residential and commercial project (known as Pacific Park), which has a target completion date of 2035. Pacific Park stretches along Atlantic Avenue from 4th Avenue to Vanderbilt Avenue. These new buildings would be approximately 25 to 27 stories tall, and would also include commercial uses and open spaces. Two of the buildings (550 Vanderbilt Avenue and 535 Carlton Avenue) have been recently completed; the remaining buildings are currently in the beginning stages of construction and are not expected to be complete by the Proposed Actions' analysis year of 2023. It is anticipated that the Pacific Park development would result in a total of 6,430 residential units, 250,000 gsf of retail, and 336,000 gsf of office space once completed. While the Proposed Actions would contribute to an existing trend of increasing commercial development in the study area, any upward rent pressure experienced by existing businesses in the area would be present in the future without the Proposed Actions.

Therefore, the Proposed Actions would not alter existing economic patterns by introducing a new economic activity to the study area.

Would the proposed project directly displace uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses?

Two retail businesses and ten DUs in the Project Area would be displaced as a result of the Proposed Actions. The two retail businesses are estimated to have a total of approximately 15 employees. The ten DUs are estimated to have approximately 24 residents. As such, the Proposed Actions would directly displace a total of approximately 24 residents and 15 workers, well below CEQR thresholds for analysis. As discussed in **Attachment A, "Project Description,"** the Development Site contains a fast food establishment with a drive-through and parking lot fronting on Atlantic Avenue and Vanderbilt Avenue on Tax Lot 1. Tax Lot 9, fronting on Atlantic Avenue, is a vacant lot utilized as open storage. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings, flanked on each side by vehicular entrances to the fast food establishment parking lot. Lot 68, fronting on Pacific Street, is vacant and currently utilized as open storage.

None of the potentially displaced businesses provide substantial direct support to other businesses in the study area, nor do they bring substantial numbers of people to the area that form a customer base for local businesses. The retail and food service businesses on the Development Site are small and likely not large enough to draw a significant volume of customers. The goods and services offered by potentially displaced uses can be found elsewhere within the study area. In many cases displaced businesses would be able to relocate to new retail space being created in the study area. In addition, local businesses do not rely on the potentially displaced businesses' products and services for day-to-day needs. Therefore, the displacement of these service businesses would not have an adverse effect on the remaining businesses or consumers in the study area.

The Proposed Actions would directly displace an estimated 24 residents and although it would directly displace up to 15 employees, future total employment in the study area—accounting for new employment brought to the area under the Proposed Actions, continued growth in industry sectors such as health and social services, and retail, and continued decline in manufacturing and wholesale—is still anticipated to be higher in the future with the Proposed Actions compared to conditions in the future without the Proposed Actions. Employment resulting from the net development under the Proposed Actions, or the incremental difference in total development between the future conditions without and with the Proposed Actions under Scenario 2, is estimated to be approximately 811 employees.

As discussed above, the Proposed Actions would not result in significant adverse impacts due to direct or indirect residential or business displacement and the Proposed Actions are not expected to indirectly displace a substantial number of residents or workers. Although the directly displaced residents and employees of the Development Site form a portion of the customer base of neighborhood service establishments (i.e. restaurants, delis, retail, etc.), the Proposed Actions under Scenario 2 would create a sizable new customer base for existing and planned retail and services businesses with the influx of an estimated 811 net employees.

Would the proposed project directly or indirectly displace residents, workers, or visitors, who form the customer base for local businesses?

As discussed above, the Proposed Actions would not directly or indirectly displace residents, workers, or visitors who form a substantial portion of the customer base of existing businesses in the study area, but rather, would increase the number of daytime workers and visitors relative to existing numbers who visit the Project Area. The Proposed Actions under Scenario 2 would generate new employment opportunities on the Development Site, increasing the number of daytime workers in the Project Area and, as such, the customer base of existing businesses in the study area.

The proposed zoning change would contribute to a diverse mix of commercial uses and employment in the area, encourage job creation in an area near transit, provide increased walk-to-work opportunities in Brooklyn CD 8, and strengthen the economic base of the City. The new commercial uses are also expected to add to the customer base of the existing businesses.

I. INTRODUCTION

An open space assessment may be necessary if a proposed action could potentially have a direct or indirect effect on open space resources in the project area. A direct effect would "physically change, diminish, or eliminate an open space or reduce its utilization or aesthetic value." An indirect effect may occur when the population generated by a proposed development would be sufficient to noticeably diminish the ability of an area's open space to serve the existing or future population. According to *City Environmental Quality Review* (CEQR) *Technical Manual* guidance, as the Rezoning Area is located in an area considered well-served by open space, a project that would introduce fewer than 350 residents or 750 employees, or a similar number of other users, is typically not considered to have indirect effects on open space.

Although the Proposed Actions would not have a direct effect on existing open space resources, the Applicant-proposed development facilitated by the Proposed Actions (Scenario 1) is expected to result in an incremental increase of 306 dwelling units (DUs) over the 2023 No-Action condition. This would result in a net increase of 692 residents[1], which exceeds the *CEQR Technical Manual* threshold for a detailed indirect open space analysis. A quantitative assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area's residential population.

The commercial development under Scenario 2 would result in a net increase in approximately 811 employees[2], which exceeds the *CEQR Technical Manual* Threshold for a detailed indirect open space analysis. A quantitative assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area's worker population.

II. PRINCIPAL CONCLUSIONS

According to the *CEQR Technical Manual*, a proposed action may result in a significant adverse impact on open space resources if (a) there would be direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing users; or (b) it would reduce the open space ratio and consequently overburden existing facilities or further exacerbate deficiency in open space. The *CEQR Technical Manual* also states that "if the area exhibits a low open space ratio indicating a shortfall of open space, even a small decrease in the ratio as a result of the action may cause an adverse effect." A five percent or greater decrease in the open space ratio is considered to be "substantial", and a decrease of less than one percent is generally considered to be insignificant unless open space resources are extremely limited. The open space study area analyzed in this attachment is located in an area considered well-served by open space.

[1] Based on the average household size of 2.27 for for the 1/2 –mile study area.
[2] Based on 3 employees/1,000 sf of retail and community facility; 4 employees/1,000 sf of office

As discussed in detail below, the preliminary residential open space assessment shows that the Proposed Actions and associated RWCDS under Scenario 1 would decrease the open space ratio by 1.2 percent in the study area, which would be below the CEQR threshold of five percent for a more detailed analysis. In addition, as noted above, the Proposed Actions would not result in any direct displacement or alteration of existing public open space in the study area. Therefore, under Scenario 1, the Proposed Actions would not result in a significant adverse open space impact.

As discussed in detail below, the preliminary non-residential open space assessment shows that the Proposed Actions and associated RWCDS under Scenario 2 would decrease the combined residential and non-residential passive open space ratio by 2.41 percent in the study area, which would be below the CEQR threshold of five percent for a more detailed analysis. In addition, as noted above, the Proposed Actions would not result in any direct displacement or alteration of existing public open space in the study area. Therefore, under Scenario 2, the Proposed Actions would not result in a significant adverse open space impact.

III. METHODOLOGY

The analysis of open space resources has been conducted in accordance with *CEQR Technical Manual* guidance. Using CEQR methodology, the adequacy of open space in the study area is assessed quantitatively using a ratio of usable open space acreage to the study area population, referred to as the open space ratio. This quantitative measure is then used to assess the changes in the adequacy of open space resources by the 2023 build year, both without and with the Proposed Actions. In addition, qualitative factors are considered in making an assessment of the Proposed Actions' effects on open space resources.

In accordance with *CEQR Technical Manual* guidance, the open space study area is generally defined by a reasonable walking distance that users would travel to reach local open space and recreational resources. That distance is typically a half-mile radius for residential projects and a quarter-mile radius for commercial projects with a worker population. As discussed in **Attachment A, "Project Description,"** under Scenario 1, the Proposed Actions would introduce approximately 692 residents (net) and 175 employees (net) to the study area compared to the 2023 No-Action condition. Because the Proposed Actions under Scenario 1 have the potential to increase the local residential population, an open space assessment for the residential population generated by the Proposed Actions is warranted.

As discussed in **Attachment A, "Project Description,"** under Scenario 2, the Proposed Actions would introduce approximately 811 net employees to the study area compared to the 2023 No-Action condition. Because the Proposed Actions under Scenario 2 have the potential to increase the local worker population, an open space assessment for the worker population generated by the Proposed Actions under Scenario 2 is also warranted.

Open Space Study Area

Pursuant to *CEQR Technical Manual* guidance, the open space study areas includes all census tracts that have at least 50 percent of their area located within a half-mile and quarter-mile boundary of the Rezoning Area, as recommended in the *CEQR Technical Manual*. In this way, the study area allows an analysis of both the open spaces in the area, as well as the population data.

The Project Area encompasses the western portion of Brooklyn Block 1122 (Lots 9, 68, 69, 70, and 71 in their entirety, and portions of Lots 1 and 10) in the Prospect Heights neighborhood of Brooklyn Community District (CD) 8. The Development Site encompasses the entirety of Lots 1, 9, 10, 68, 69, 70, and 71 on Block 1122. As shown in **Figure E-1**, the half-mile open space study area includes the following census tracts in their entirety: Census tracts 129.02, 159, 161, 163, 179, 197, 199, 201, 203, 205, 207, 227, 231, and 305. The open space study area extends to portions of DeKalb, Greene, and Lafayette Avenues to the north; to portions of Grand Army Plaza, Park Place, St. Johns Place, and Union Street to the south; to portions of Bedford, Classon, Franklin, and Putnam Avenues to the east; and to portions of 5th and 6th Avenues to the west.

As the incremental worker population generated by the Proposed Actions under Scenario 2 would exceed the CEQR threshold analysis of 725 employees, a non-residential (worker) analysis is also warranted. The *CEQR Technical Manual* states that the non-residential open space study area be comprised of all census tracts that have at least 50 percent of their area located within a ¼-mile of the Project Area. The non-residential study area is shown in **Figure E-1**. The ¼-mile study area includes census tracts 163, 199, 201, 203, and 205.

Analysis Framework

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 causes increased noise or air pollutant emissions, odors, or shadows that would affect its usefulness, whether on a permanent or temporary basis. As (1) there are no publicly-accessible open space resources within the Development Site, and (2) the Proposed Actions would not result in significant adverse shadow, air quality, noise, or construction impacts on area open space resources, the Proposed Actions would not have any direct effects on open space resources and no further analysis is warranted.

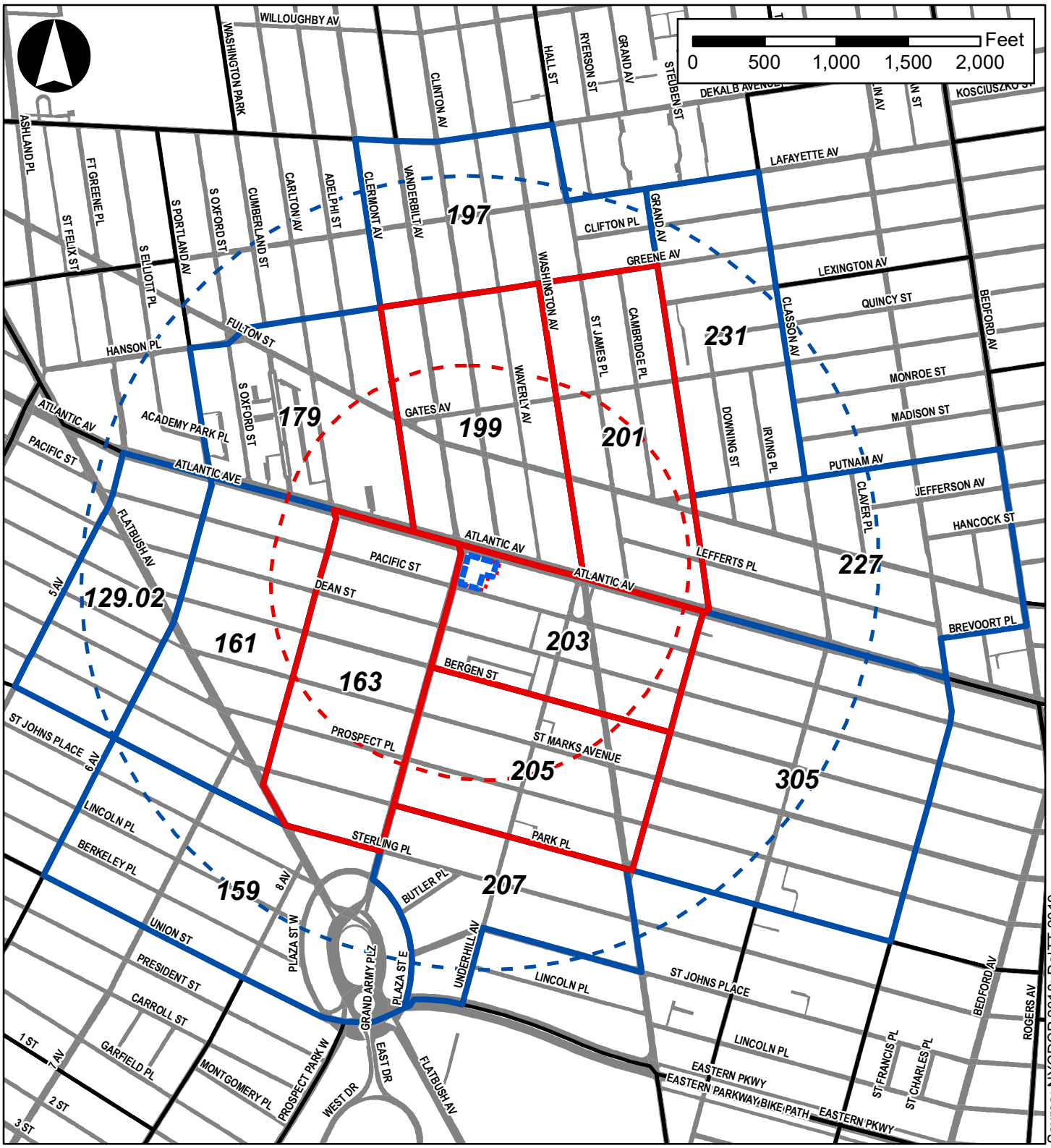
Indirect Effects Analysis

Indirect effects occur to an area's open space resources when a proposed action would add enough population, either residents or workers, to noticeably diminish the ability of an area's open space to serve the existing or future population. *CEQR Technical Manual* guidance suggests conducting an initial quantitative assessment to determine whether more detailed analyses are appropriate, but also recognizes that for projects that introduce a large population in an area that is underserved by open space, it may be clear that a full, detailed analysis should be conducted. As discussed above, the Development Site is located in an area considered well-served by open space as identified in the *CEQR Technical Manual Appendix: Open Space Maps*.

Residential Open Space Analysis

With an inventory of available open space resources and potential users, the adequacy of open space in the study area can be assessed both quantitatively and qualitatively. The quantitative approach computes the ratio of open space acreage to the population in the study area and compares this ratio with certain guidelines. The qualitative assessment examines other factors that can affect conclusions about adequacy,

Figure E-1
Open Space Study Area



Source: NYCDCP 2018; DoITT 2019

Legend

- Quarter-Mile Radius
- Half-Mile Radius
- Rezoning Area
- Development Site
- Quarter-Mile Worker Study Area
- Half-Mile Residential Study Area
- 201 2010 Census Tracts
- Roadways

including proximity to additional open space resources beyond the boundaries of the study area, the availability of private recreational facilities, and the demographic characteristics of the area's population. Specifically, the analysis in this chapter includes:

- Characteristics of the existing residential population. To determine the number of residents in the study area, 2010 Census data have been compiled for census tracts comprising the open space study area.
- An inventory of all publicly accessible active and passive recreational facilities in the open space study area.
- An assessment of the quantitative ratio of open space in the study area by computing the ratio of open space acreage to the population in the study area and comparing this open space ratio with certain guidelines. For residential populations, there are generally two guidelines that are used to evaluate residential open space ratios. The *CEQR Technical Manual* generally recommends a comparison to the median ratio for community districts in New York City, which is 1.5 acres of open space per 1,000 residents. However, the *CEQR Technical Manual* planning guidance is 2.5 acres of open space per 1,000 residents, comprised of a balance of 80 percent active open space (2.0 acres per 1,000 residents) and 20 percent passive open space (0.5 acres per 1,000 residents).
- An evaluation of qualitative factors affecting open space use.
- A final determination of the adequacy of open space in the residential open space study area.
- An assessment of expected changes in future levels of open space supply and demand in the 2023 analysis year, based on other planned No-Action development projects and anticipated background growth within the open space study area. To estimate the residential population expected in the study area in the future without the Proposed Actions, both background growth and study area No-Action developments are accounted for. Any new open space or recreational facilities that are anticipated to be operational by the analysis year are also accounted for. Open space ratios are calculated for the future No-Action condition and compared with existing ratios to determine changes in future levels of open space adequacy.

Non-Residential Open Space Analysis

With an inventory of available open space resources and potential users, the adequacy of open space in the study area can be assessed both quantitatively and qualitatively. The quantitative approach computes the ratio of open space acreage to the population in the study area and compares this ratio with certain guidance. The qualitative assessment examines other factors that can affect conclusions about adequacy, including proximity to additional resources beyond the study area, the availability of private recreational facilities, and the demographic characteristics of the area's population. Specifically, the analysis in this attachment includes:

- Characteristics of the open space users: residents and non-residents (workers and/or non-residential students). To determine the number of residents in the study area the 2014-2018 U.S. Census Bureau's American Community Survey (ACS) data was compiled within the non-residential study area. The number of employees in the study area was calculated based on reverse journey-to-work census data provided by Census Transportation Planning Products (CTTP), which is based on 2012-2016 estimates from the ACS.

- An inventory of all publicly accessible passive and active recreational facilities in the non-residential open space study area (see **Figure E-2**).

- An assessment of the quantitative ratio of open space in the study area by computing the ratio of open space acreage to the population in the study area and comparing this open space ratio with certain guidance. According to the *CEQR Technical Manual*, a ratio of 0.15 acres of passive open space per 1,000 non-residents represents a reasonable amount of open space. The needs of non-residential and residential populations are also considered together in the study area because it is assumed that both will use the same passive open spaces. Therefore, a weighted average is also considered for the analysis that balances the amount of open space necessary to meet the goal of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents. Because this ratio changes depending on the proportion of residents and non-residents in the study area, the tables summarizing the open space ratios outline the amount of open space needed in each condition in the non-residential study area, and calculate the weighted average ratio of passive open space acres per 1,000 combined residents and non-residents.

- An evaluation of qualitative factors affecting open space use.

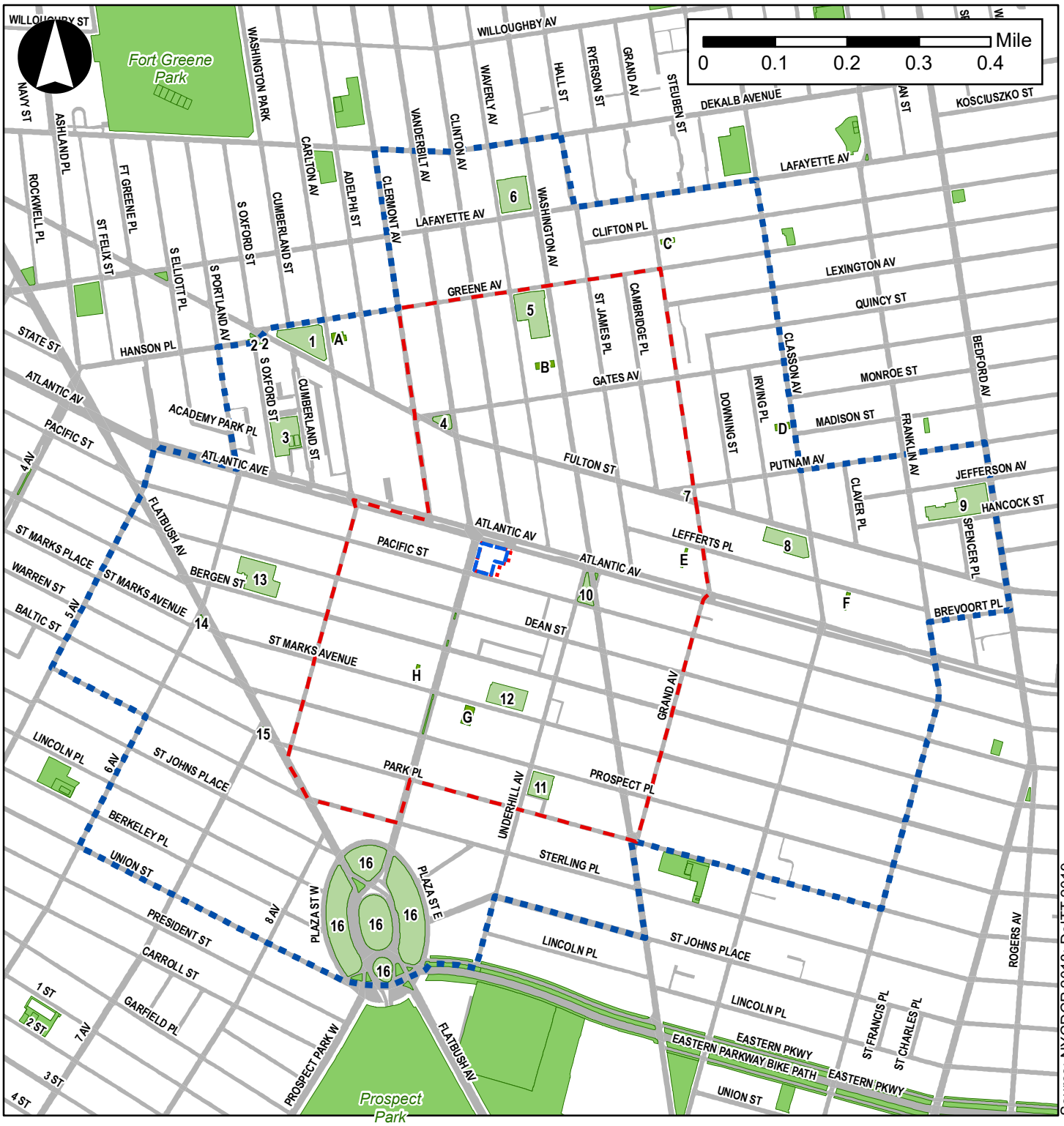
- A final determination of the adequacy of open space in the non-residential open space study area.

- An assessment of expected changes in future levels of open space supply and demand in the 2023 analysis year, based on other planned development projects and anticipated background growth rates within the open space study area. To estimate the residential population expected in the study area in the future without the Proposed Actions, both background growth and study area No-Action developments are accounted for. The daytime population is estimated based on standard ratios as follows: one employee per 25 DUs, three employees per 1,000 sf of retail space and community facility space, four employees per 1,000 sf of office space. Any new open space or recreational facilities that are anticipated to be operational by the analysis year are also accounted for. Open space ratios are calculated for future No-Action conditions and compared with existing ratios to determine changes in future levels of adequacy.

Impact Assessment

As described in the *CEQR Technical Manual,* the significance of a project's effects on an area's open space resources is determined using both quantitative and qualitative factors, as compared to the No-Action condition. The determination of significance is based upon the context of a proposed project, including its location, the quality and quantity of the open space in the future With-Action condition, the types of open space provided, and any new open space provided by the proposed project.

The quantitative assessment considers how a proposed project would change the open space ratios in the study area. The *CEQR Technical Manual* indicates that a significant adverse impact may result if a proposed project would reduce the open space ratio by more than five percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents or 0.15 acres of passive open space per 1,000 non-residential users, or where there would be a direct displacement or alteration of existing open space within the study area that has a significant adverse effect on existing users. In areas that are extremely lacking in open space, a reduction as small as one percent may be



Source: NYCDCP 2018; DoITT 2019

Legend

- Rezoning Area
- Development Site
- Quarter-Mile Worker Study Area
- Half-Mile Residential Study Area
- 1 — Quantitative Open Space Resources (see Table E-2)
- A — Qualitative Open Space Resources (see Table E-2)
- Open Space Resources Not Included in Analysis

considered significant, depending on the area of the City. Furthermore, in areas that are well-served by open space, a greater change in the open space ratio may be tolerated.

The qualitative assessment supplements the quantitative assessment and considers nearby destination open space resources, the connectivity of open space resources, the effects of new open space provided by the proposed action, a comparison of projected open space ratios with established City guidelines, and open space created by the proposed action not available to the general public. It is recognized that the City's planning goals are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks indicating how well an area is served by open space.

IV. DETAILED ANALYSIS

Existing Conditions

Demographic Characteristics of the Study Area

Residential (1/2-mile) Study Area

To determine the residential population served by existing open space resources, 2014-2018 ACS data were compiled for the census tracts comprising the half-mile study area. With an inventory of available open space resources and the number of potential users, open space ratios were calculated and compared with the existing citywide median ratio and the City's planning goals. As mentioned above and shown in **Figure E-1**, the open space study area is comprised of 14 census tracts. As shown in **Table E-1** on the subsequent page, 2014-2018 ACS data indicate that the study area has a total residential population of approximately 52,253.

Table E-1: Residential Population and Age Distribution in the Half-Mile Study Area

Total Residential Population	Total Population	Age Distribution 2014-2018												Median Age
		Under 5		5 to 9		10 to 14		15 to 19		20 to 64		65+		
		#	%	#	%	#	%	#	%	#	%	#	%	
1/2 Mile Study Area Total	52,253	3,288	6.30%	1,941	3.70%	1,884	3.60%	1,474	2.80%	37,792	72.33%	5,874	11.24%	35.3
Brooklyn	2,600,747	193,743	7.40%	162,283	6.20%	154,327	5.90%	141,394	5.40%	1,474,338	56.69%	343,548	13.21%	35.1

Source: U.S. Census Bureau, 2014-2018 ACS.

As shown in **Table E-1**, people between the ages of 20 and 64 make up the majority (approximately 72.33 percent) of the residential population in the half-mile study area. Children and teenagers (0 to 19 years old) account for approximately 16.4 percent of the entire study area population, and persons 65 years and over account for approximately 11.24 percent of the study area population. As also presented in **Table E-1**, compared to Brooklyn, the half-mile study area includes a smaller percentage of children/teenagers and a larger percentage of adults (20-64 years); the study area's elderly population is smaller than that of Brooklyn.

The half-mile study area's median age of 35.3 is nearly the same as the median age for Brooklyn (35.1 years).

Within a given area, the age distribution of a population affects the way open space resources are used and the need for various types of recreational facilities. Typically, children four years old or younger use traditional playgrounds that have play equipment for toddlers and preschool-aged children. Children ages five through nine typically use traditional playgrounds, as well as grassy and hard-surfaced open spaces, which are important for activities such as ball playing, running, and skipping rope. Children ages ten through 14 use playground equipment, court spaces, Little League fields, and ball fields. Teenagers' and young adults' needs tend toward court game facilities, such as basketball and field sports. Adults between the ages of 20 and 64 continue to use court game facilities and fields for sports, as well as more individualized forms of recreation such as rollerblading, biking, and jogging, requiring bike paths, promenades, and vehicle-free roadways. Adults also gather with families for picnicking, ad hoc active sports, such as Frisbee, and recreational activities in which all ages can participate. Senior citizens engage in active recreation, such as tennis, gardening, and swimming, as well as recreational activities that require passive facilities.

Non-Residential (¼-Mile) Study Area

As shown in **Table E-2** below, based on ACS reverse journey-to-work data compiled by CTPP, the existing worker population within the non-residential open space study area is estimated at approximately 4,685 workers. As also shown in **Table E-2**, 2010 Census data indicate that the non-residential study area has a residential population of approximately 15,460. Within the non-residential study area, the total population (residential plus non-residential) is estimated at 20,145 (refer to **Table E-2**). Although this analysis conservatively assumes that residents and daytime users (employees) are separate populations, as noted earlier, it is likely that some of the residents live near their workplace or work from home. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

Table E-2
Existing Open Space Study Area Non-Residential and Residential Populations

Census Tract	Residential Population	Non-Residential (Worker) Population	Total Population
163	3,225	930	4,155
199	3,829	2,120	5,949
201	3,735	605	4,340
203	1,764	195	1,959
205	2,907	835	3,742
¼-Mile Study Area Total	**15,460**	**4,685**	**20,145**

Source: U.S. Census Bureau, 2014-2018, ACS 2012-2016 Five-Year Estimates. Special Tabulation: Census Transportation Planning Products (CTPP).

Inventory of Publicly Accessible Open Space

According to the *CEQR Technical Manual*, open space may be public or private and may be used for active or passive recreational purposes. Pursuant to the *CEQR Technical Manual*, a publicly accessible open space is defined as a recreational facility open to the public at designated hours on a regular basis and can be assessed for impacts using both a quantitative and a qualitative analysis, whereas a private open space facility is not accessible to the general public on a regular basis and may be considered only qualitatively.

An open space resource is determined to be active or passive by the uses that the design of the space allows. Active open space is the part of a facility used for active play, such as sports or exercise, and may include playground equipment, playing fields and courts, swimming pools, skating rinks, golf courses, and multi-purpose play areas (open lawns and paved areas for active recreation such as running, games, informal ball-playing, skipping rope, etc.). Passive open space is used for sitting, strolling, and relaxation, and typically contains benches, walkways, and picnicking areas. However, some passive spaces can be used for both passive and active recreation, such as a lawn or riverfront walkway, which can also be used for ball-playing, jogging, or rollerblading.

Within the open space study area, all publicly accessible open space resources were inventoried and identified by their name, location, owner, amenities/equipment, user groups, hours of operation, and the amount of total, active, and passive acreage, as well as the condition and utilization of each resource. The information used for this analysis was gathered through field inventories conducted in May 2019; the New York City Department of Parks and Recreation's (NYC Parks) website; and the New York City Open Accessible Space Information System (OASIS) database and other secondary sources of information.

The condition of each open space resource was categorized as "Excellent," "Good," "Fair," or "Poor." A resource was considered in excellent condition if the space was clean and attractive, and all equipment was present and in a state of good repair. A good resource had minor problems such as litter or older but operative equipment. A fair or poor resource was one that was poorly maintained, had broken or missing equipment or lack of security, or other factors that would diminish the facility's attractiveness to potential users. Determinations were made subjectively, based on a visual assessment of the open space resources.

Likewise, judgments with regard to the intensity of use of the resources were qualitative, based on an observed degree of activity or utilization on a weekday from 11 AM until 3 PM, which is considered the weekday peak utilization period according to *CEQR Technical Manual* guidance. If a resource seemed to be at or near capacity (i.e. the majority of benches or equipment was in use), then utilization was considered high. If the facility or equipment was in use but could accommodate additional users, utilization was considered moderate. If a playground or sitting area had few people, usage was considered light.

Residential (1/2-Mile) Study Area

Table E-3 identifies the address, ownership, features, and acreage of total, active, and passive open space resources in the half-mile study area, as well as their condition and utilization. **Figure E-2** maps their location within the study area.

As shown in **Figure E-2** and **Table E-3**, there are 16 publicly accessible open space resources located in the half-mile open space study area. These open space resources are distributed throughout the study area. In addition, there are eight community gardens located within the half-mile study area that are not included in the quantitative analysis because they do not provide consistent public hours or do not include seating or other amenities.

The study area contains a total of approximately 25.06 acres of publicly accessible open space, of which approximately 10.05 acres (40.1 percent) comprises active open space uses and approximately 15.01 acres (59.9 percent) comprises passive open space uses (refer to **Table E-3**).

The largest open space resource in the half-mile study area is Grand Army Plaza (Map No. 16), a 14.26-acre open space resource located seven blocks to the southwest of the Rezoning Area, along the southern border of the half-mile study area. Grand Army Plaza, which is owned and operated by the New York City Department of Parks and Recreation (DPR), is predominantly programmed with passive open space uses, including walkways, benches, and lawns. The lawns present in the opens space may also be used for active open space uses.

Other significant open space resources located in the half-mile study area include the 1.55-acre John Hancock Playground (Map No. 9), which is located along the eastern border of the study area, and the 1.32-acre Dean Playground (Map No. 13), which is located in the western portion of the study area. John Hancock Playground, which is jointly owned and operated by the New York City Department of Education (DOE) and DPR, is primarily programmed with active open space uses, including playgrounds, spray showers, and basketball and handball courts. The park also includes game tables and benches for passive open space uses. Dean Playground, which is owned and operated by DPR, is primarily programmed with active open space uses, including playgrounds, spray showers, basketball and handball courts, and a synthetic baseball/soccer turf-field. The playground also includes game tables, picnic tables, and benches for passive open space uses.

With the exception of these three open spaces, the remaining 13 open space resources located within the half-mile study area are below 1.30 acres in size and include a variety of active (synthetic turf-fields, multi-purpose athletic fields, basketball and handball courts, playgrounds, and spray showers) and passive (walkways, bathrooms, game and picnic tables, benches, and landscaped areas) open space uses.

As mentioned above, there are several open space resources that are conservatively not included in the quantitative analysis because they do not provide consistent public hours or do not include seating or other amenities. These resources consist of eight community gardens, which, in total, comprise approximately 0.89-acres of open space.

Non-Residential (¼-Mile) Study Area

As shown in **Table E-4**, the non-residential study area contains a total of 4.65 acres of open space, of which approximately 3.49 acres (75 percent) comprises active open space uses and approximately 1.16 acres (25 percent) comprises passive open space uses. As shown in **Table E-4** and **Figure E-2**, seven publicly-accessible open space and recreational resources are located within the non-residential study area.

The largest open space resource in the non-residential study area is Dean Playground (Map No. 13). Dean Playground, which is owned and operated by DPR, is primarily programmed with active open space uses, including playgrounds, spray showers, basketball and handball courts, and a synthetic baseball/soccer turf-field. The playground also includes game tables, picnic tables, and benches for passive open space uses.

The closest open space resource to the Development Site is Lowry Triangle (Map No. 10). Lowry Triangle, which is owned and operated by DPR, is programed with passive uses that include benches, planters, and trees.

The five remaining open space resources within the non-residential study area are generally below 1 acre in size.

In addition, as shown in **Figure E-2**, there are four open space resources that are conservatively not included in the quantitative analysis because they do not provide consistent public hours or do not include seating or other amenities (Map Nos. B, E, H, G). Together, these four resources, both of which are community gardens, comprise approximately 0.48 acres of open space.

Table E-3: Inventory of Existing Open Space and Recreational Resources in the Residential ½-Mile Study Area

Map No.[1]	Name	Location	Owner/ Agency	Amenities	User Groups	Hours of Operation	Acreage	Active		Passive		Condition/ Utilization
								Acres	%	Acres	%	
Open Space Resources Included in Quantitative Analysis												
1	Cuyler Grove Park	Bounded by Carlton Ave., Fulton St., & Greene Ave.	DPR	Playgrounds, Spray Showers, Walkways, Benches, Plantings, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.16	0.93	80	0.23	20	Excellent condition/Moderate utilization
2	Greenstreet with Seating 1	Bounded by Fulton St. & Hanson Pl.	DPR	Benches, Plantings, Trees	Adults & Senior Citizens	24 Hours	0.02	0.00	0	0.02	100	Good condition/Low utilization
3	South Oxford Park	Bounded by S. Oxford St., Atlantic Commons, & Cumberland St.	DPR	Playgrounds, Spray Showers, Tennis Courts, Multi-purpose Synthetic Turf Lawn, Walkways, Benches, Plantings, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.19	1.07	90	0.12	10	Excellent condition/High utilization
4	Gateway Triangle	Bounded by Gates Ave., Fulton St., & Vanderbilt Ave.	DPR	Benches, Plantings, Trees	Adults & Senior Citizens	24 Hours	0.07	0.00	0	0.07	100	Excellent condition/Low utilization
5	Greene Playground	Bounded by Greene, Washington, & Waverly Ave.	DPR/DCAS/DOE	Playgrounds, Spray Showers, Basketball & Handball Courts, Bathrooms, Game Tables, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.26	1.13	90	0.13	10	Excellent condition/Moderate utilization
6	Underwood Park	Bounded by S. Anesta Samuel (Lafayette), Washington, & Waverly Ave.	DPR	Playgrounds, Spray Showers, Bathrooms, Picnic Tables, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.19	0.89	75	0.30	25	Excellent condition/High utilization
7	Putnam Triangle	Bounded by Putnam Ave., Fulton St., & Grand Ave.	DOT/DPR	Tables with movable chairs and umbrellas, Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.34	0.00	0	0.34	100	Excellent condition/Moderate utilization

Table E-3 (continued): Inventory of Existing Open Space and Recreational Resources in the Residential ½-Mile Study Area

Map No.[1]	Name	Location	Owner/ Agency	Amenities	User Groups	Hours of Operation	Acreage	Active		Passive		Condition/ Utilization
								Acres	%	Acres	%	
Open Space Resources Included in Quantitative Analysis												
8	Crispus Attucks Playground	Classon Ave. btwn. Fulton St. & Lefferts Pl.	DPR	Playgrounds, Spray Showers, Basketball & Handball Courts, Bathrooms, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	0.93	0.84	90	0.09	10	Excellent condition/High utilization
9	John Hancock Playground	Bounded by Bedford Ave., Hancock St., & Jefferson Ave.	DPR/DOE	Playgrounds, Spray Showers, Basketball & Handball Courts, Game Tables, Benches	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.55	1.40	90	0.16	10	Good condition/Low utilization
10	Lowry Triangle	Bounded by Underhill Ave., Pacific St., & Washington Ave.	DPR	Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.11	0.00	0	0.11	100	Excellent condition/Low utilization
11	Underhill Playground	Underhill Ave. btwn. Prospect Pl. & Park Pl.	DPR	Playgrounds, Spray Showers, Handball Courts, Bathrooms, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	0.59	0.44	75	0.15	25	Excellent condition/High utilization
12	P.S. 9 Playground	St. Marks Ave. btwn. Underhill & Vanderbilt Ave.	DPR/DCAS/DOE	Playgrounds, Basketball & Handball Courts, Soccer & Half-Track Field, Game Tables, Benches	Children, Teenagers, Adults	When school is in session: Open to the public after school hours until dusk; When school is out of session: 8 AM to Dusk	0.96	0.86	90	0.10	10	Excellent condition/Moderate utilization
13	Dean Playground	Dean St. to Bergen St. btwn. 6 Ave. & Carlton Ave.	DPR	Playgrounds, Spray Showers, Synthetic Baseball/Soccer Turf Field, Basketball & Handball Courts, Bathrooms, Game & Picnic Tables, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.32	1.06	80	0.26	20	Excellent condition/Moderate utilization

Table E-3 (continued): Inventory of Existing Open Space and Recreational Resources in the Residential ½-Mile Study Area

Map No.[1]	Name	Location	Owner/ Agency	Amenities	User Groups	Hours of Operation	Acreage	Active		Passive		Condition/ Utilization
								Acres	%	Acres	%	
Open Space Resources Included in Quantitative Analysis												
14	Greenstreet with Seating 2	Bounded by 6 Ave., St. Marks Ave., & Flatbush Ave.	DPR	Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.07	0.00	0	0.07	100	Excellent condition/Low utilization
15	Greenstreet with Seating 3	Bounded by 7 Ave., Park Pl., & Flatbush Ave.	DPR	Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.04	0.00	0	0.04	100	Excellent condition/Low utilization
16	Grand Army Plaza	Flatbush Ave., Eastern Pkwy., & Prospect Park	DPR	Memorial Arch, Statues, Fountain, Benches, Walkways, Lawns, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	14.26	1.43	10	12.83	90	Excellent condition/Low utilization
Total Included in Quantitative Analysis							***25.06***	***10.05***	***40.1***	***15.01***	***59.9***	

Table E-3 (continued): Inventory of Existing Open Space and Recreational Resources in the Residential ½-Mile Study Area

Map Letter[1]	Name	Location	Owner/ Agency	Amenities	Acreage
Open Space Resources Not Included in Quantitative Analysis					
A	Brooklyn Bears/Carlton Avenue Garden	397-401 Carlton Ave.	DPR	Community Garden	0.14
B	Hollenback Community Garden	460 Washington Avenue	BQLT	Community Garden	0.15
C	Clifton Place Block Association Garden	289 Grand Avenue	BQLT	Community Garden	0.08
D	Classon/Fulgate Block Association Garden	472-474 Classon Avenue	BQLT	Community Garden	0.12
E	Brooklyn's Finest Garden	48 Lefferts Place	DPR	Community Garden	0.05
F	Lefferts Place Block Association Garden	162 Lefferts Place	DPR	Community Garden	0.07
G	Prospect Heights Community Farm	252-256 St. Marks Avenue	BANG	Community Garden	0.21
H	St. Marks Avenue/Prospect Heights Community Garden	207 St. Marks Avenue	BQLT	Community Garden	0.07
Total Excluded from Quantitative Analysis					***0.89***

Source: OASIS, NYC Parks, 2018 Primary Land Use Tax Lot Output (PLUTO) data, site visits conducted in May 2019.

Notes:

[1] Refer to **Figure E-2**.

DPR = New York City Department of Parks and Recreation; DOE = New York City Department of Education; DOT = New York City Department of Transportation; DCAS = New York City Department of Citywide Administrative Services; BQLT = Brooklyn Queens Land Trust; BANG = Brooklyn Alliance of Neighborhood Gardens

Table E-4: Inventory of Existing Open Space and Recreational Resources in the Non-Residential ¼-Mile Study Area

Map No.[1]	Name	Location	Owner/ Agency	Amenities	User Groups	Hours of Operation	Acreage	Active		Passive		Condition/ Utilization
								Acres	%	Acres	%	
Open Space Resources Included in Quantitative Analysis												
4	Gateway Triangle	Bounded by Gates Ave., Fulton St., & Vanderbilt Ave.	DPR	Benches, Plantings, Trees	Adults & Senior Citizens	24 Hours	0.07	0.00	0	0.07	100	Excellent condition/Low utilization
5	Greene Playground	Bounded by Greene, Washington, & Waverly Ave.	DPR/DCAS/DOE	Playgrounds, Spray Showers, Basketball & Handball Courts, Bathrooms, Game Tables, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.26	1.13	90	0.13	10	Excellent condition/Moderate utilization
7	Putnam Triangle	Bounded by Putnam Ave., Fulton St., & Grand Ave.	DOT/DPR	Tables with movable chairs and umbrellas, Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.34	0.00	0	0.34	100	Excellent condition/Moderate utilization
10	Lowry Triangle	Bounded by Underhill Ave., Pacific St., & Washington Ave.	DPR	Benches, Plantings, Trees	Teenagers, Adults, Senior Citizens	24 Hours	0.11	0.00	0	0.11	100	Excellent condition/Low utilization
11	Underhill Playground	Underhill Ave. btwn. Prospect Pl. & Park Pl.	DPR	Playgrounds, Spray Showers, Handball Courts, Bathrooms, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	0.59	0.44	75	0.15	25	Excellent condition/High utilization
12	P.S. 9 Playground	St. Marks Ave. btwn. Underhill & Vanderbilt Ave.	DPR/DCAS/DOE	Playgrounds, Basketball & Handball Courts, Soccer & Half-Track Field, Game Tables, Benches	Children, Teenagers, Adults	When school is in session: Open to the public after school hours until dusk; When school is out of session: 8 AM to Dusk	0.96	0.86	90	0.10	10	Excellent condition/Moderate utilization
13	Dean Playground	Dean St. to Bergen St. btwn. 6 Ave. & Carlton Ave.	DPR	Playgrounds, Spray Showers, Synthetic Baseball/Soccer Turf Field, Basketball & Handball Courts, Bathrooms, Game & Picnic Tables, Benches, Trees	Children, Teenagers, Adults, Senior Citizens	6AM to Dusk	1.32	1.06	80	0.26	20	Excellent condition/Moderate utilization
Total Included in Quantitative Analysis							***4.65***	***3.49***	***75%***	***1.16***	***25%***	

Assessment of Open Space Adequacy

Residential (1/2-mile) Study Area

Quantitative Assessment

The following analysis of the adequacy of existing open space resources within the half-mile study area takes into consideration the ratio of active, passive, and total open space resources per 1,000 residents.

As previously stated, there are 25.06 acres of publicly accessible open space, including approximately 10.05 acres (approximately 40.1 percent) of active open space and approximately 15.01 acres (approximately 59.9 percent) of passive open space. With a residential population of 52,253, the total open space ratio for residents is 0.48 acres per 1,000 residents, which is less than the City's planning guideline of 2.50 acres of parkland per 1,000 residents (see **Table E-5**). The existing open space ratio is also below the City's median community district open space ratio of 1.5 acres per 1,000 residents. The study area's active open space ratio (0.19 acres per 1,000 residents) is lower than the City's planning guideline of 2.00 acres per 1,000 residents. The area's passive open space ratio (0.29 acres per 1,000 residents) is also below the City's planning guideline of 0.50 acres per 1,000 residents.

Table E-5: Adequacy of Open Space Resources for the Residential Study Area: Existing Conditions

Existing Population	Open Space Acreage			Open Space per 1,000 Residents			City Open Space Planning Goals		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
52,2533	25.06	10.05	15.01	0.48	0.19	029	2.50	2.00	0.50

Qualitative Assessment

Although the existing total open space ratio in the study area is less than the City's planning guideline of 2.50 acres per 1,000 residents and the citywide median of 1.50 acres per 1,000 residents, the deficiency of open space resources within the half-mile study area is ameliorated by several factors. All 16 open space resources in the study area were found to be in either excellent or good condition. In addition, a majority of the open space resources (12 of the 16 open space resources) have only low or moderate utilization levels and would be able to absorb additional users. Moreover, a wide variety of options for residents are available in each of the 16 open spaces, ranging from passive uses, such as plazas containing walkways, benches, and game tables, to active uses, such as playgrounds, spray showers, multiple basketball and handball courts, and several synthetic turf-fields.

Non-Residential (1/4-mile) Study Area

As described above, the analysis of the non-residential study area focuses on passive open spaces that may be used by workers and/or non-residential students in the area. To assess the adequacy of open space resources in the area, the ratio of non-residents to acres of passive open space is compared to the City's planning guideline of 0.15 acres of passive space per 1,000 non-residents. In addition, the combined passive open space ratio for both workers and residents in the non-residential study area is compared with the recommended weighted average ratio.

Quantitative Assessment

As mentioned above, the non-residential study area contains a total of 4.65 acres of open space, of which approximately 1.16 acres are for passive uses and approximately 3.49 acres are for active uses. As described earlier, workers typically use passive open space during the workday, so the passive open space ratio is the relevant ratio for consideration. With a residential population of 15,460, the study area has an overall open space ratio of 0.301 acres per 1,000 residents, which is below the applicable City open space guidelines. The study area's residential passive and active open space ratios are 0.075 and 0.226 acres per 1,000 residents, respectively. With a combined non-residential and residential population of 20,145, the combined passive open space ratio in the non-residential study area is 0.058 acres per 1,000 users, which is below the recommended weighted average guideline ratio of 0.42 acres per 1,000 residents and non-residents.

Table E-6
Adequacy of Open Space Resources of the Non-Residential Study Area: Existing Conditions

	Population	Open Space Acreage			Open Space Ratios per 1,000 People			CEQR Technical Manual Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (1/4-Mile) Study Area										
Residential	15,460	4.65	1.16	3.49	0.301	0.075	0.226	2.50	0.50	2.00
Combined Residential & Non-Residential	20,145				N/A	0.058	N/A	N/A	0.42[1]	N/A

Notes:
[1] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents.

Qualitative Assessment

As shown in **Table E-4**, a majority of the non-residential study area open space resources are in good or excellent condition and feature low to moderate utilization levels. The non-residential study area includes several passive open space uses, such as plazas with seating and shade trees, landscaped areas, and benches, all of which are suitable for use by the non-residential population in the study area.

Moreover, as noted above, the quantitative analysis is conservative in scope as it assumes that residents and daytime users are separate populations, whereas it is likely that some of the residents live near their workplace or work from home, resulting in some double-counting of the daily user population in the non-residential study area.

Although the non-residential study area contains a mixture of recreational facilities, with approximately 3.49-acres dedicated to active uses and 1.16-acres dedicated to passive use, there are several open space resources that cannot be included in the quantitative analysis as per guidance from the *CEQR Technical Manual*. Specifically, several community gardens within the non-residential study area are not included in the quantitative analysis as per CEQR guidance (refer to **Figure E-2**). Together these open spaces add an additional 0.48-acres of passive open space for the non-residential (¼-mile) study area's population that is not considered in the quantitative analysis.

V. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

Residential (1/2-mile) Study Area

Study Area Population

There are approximately 43 known and anticipated No-Action developments within the half-mile open space study area. In total, these 43 combined No-Action developments are expected to introduce approximately 2,878 residents to the half-mile study area. In addition, a residential background growth rate was applied to the existing residential population to account for general background growth anticipated in the half-mile study area. As indicated in **Table E-7**, the anticipated No-Action developments, combined with the residential growth rate, are expected to increase the half-mile study area population to 59,705 residents.

Open Space Resources

While there are no planned changes to open space resources that would increase or decrease the overall study area acreage, DPR has one capital project planned within the half-mile study area. At Grand Army Plaza, DPR, through a partnership with Prospect Park Alliance, has funded two capital construction projects: (1) Restoration of the historic Soldiers' and Sailors' Memorial Arch and (2) restoration of berms surrounding Grand Army Plaza and paving surrounding Bailey Fountain. These restoration projects are anticipated for completion during the latter half of 2021.

It is expected that these improvement projects at Grand Army Plaza would be fully implemented in the 2023 No-Action condition. While these capital projects would not add any additional open space acreage to the half-mile study area, the project would improve the conditions and functionality of Grand Army Plaza.

Assessment of Open Space Adequacy

In the 2023 No-Action condition, the additional population introduced to the half-mile study area would increase the demand on the area's open space resources (i.e., would reduce the residential open space ratios). As indicated in **Table E-7**, the No-Action total, active, and passive open space ratios per 1,000 residents are expected to decrease to 0.42, 0.17, and 0.25, respectively, from 0.48, 0.19, and 0.29, respectively, under existing conditions. Similar to existing conditions, all ratios would remain below the City's community district median and the City's optimal planning guidelines.

Table E-7: Adequacy of Open Space Resources of the Residential Study Area: No-Action Condition

2023 No-Action Population	Open Space Acreage			Open Space per 1,000 Residents			City Open Space Planning Goals		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
59,705	25.06	10.05	15.01	0.42	0.17	0.25	2.50	2.00	0.50

Non-Residential (1/4-mile) Study Area

Study Area Population

In total, the combined No-Action developments, are expected to introduce approximately 1,362 residents and 425 employees to the non-residential (¼-mile) study area. In addition, residential and non-residential background growth rates were developed based on recent Census and employment trends.[3] These growth rates were applied to the existing residential and non-residential populations to account for general background growth anticipated in the study area. As indicated in **Table E-8**, the anticipated No-Action developments, combined with the residential and non-residential growth rates, are expected to increase the non-residential (¼-mile) study area population 20,100 residents, for a combined total of 26,203 workers and residents by 2023.

Table E-8
2023 No-Action Non-Residential (¼-Mile) Open Space Study Area Population

	Existing Population	No-Action Population resulting from General Background Growth[1]	Additional Population on No-Action Development Sites[2,3]	Future 2023 No-Action Population
Residential	15,460	3,278	1,362	20,100
Combined Residential & Non-Residential	20,145	5,678	1,787	26,203

Notes:
[1] Based on annual compound residential and worker population growth rate of 1.49 percent (2010 Census and 2013-2017 ACS Five-Year Estimates).
[2] Residential population estimate for No-Action developments based on half-mile average of approximately 2.27 persons per household (2014-2018 ACS).
[3] Worker population estimate for No-Action developments based on standard rates and are as follows: 3 workers per 1,000 sf retail & community facility space; 4 workers per 1,000 sf of office.

Study Area Open Space Resources

In the future without the Proposed Actions, as discussed above, while there are no planned changes to open space resources that would increase or decrease the overall study area acreage, DPR has one capital project planned within the half-mile study area. At Grand Army Plaza, DPR, through a partnership with Prospect Park Alliance, has funded two capital construction projects: (1) Restoration of the historic Soldiers' and Sailors' Memorial Arch and (2) restoration of berms surrounding Grand Army Plaza and paving surrounding Bailey Fountain. These restoration projects are anticipated for completion during the latter half of 2021.

It is expected that these improvement projects at Grand Army Plaza would be fully implemented in the 2023 No-Action condition. While these capital projects would not add any additional open space acreage to the half-mile study area, the project would improve the conditions and functionality of Grand Army Plaza.

[3] Annual background growth rates of 1.49% were used to determine future 2023 No-Action and With-Action residential and non-residential populations.

Assessment of Open Space Adequacy

As detailed above, it is anticipated that new development and background growth in the non-residential (¼-mile) study area will result in an increase in the population in the future without the Proposed Actions, and thus, would increase the demand on the area's open spaces. As a result of these anticipated No-Action changes, while the passive open space ratio for the combined population of residents and non-residents would decrease to 0.042 (from 0.058under existing conditions), it will continue to be below the calculated No-Action recommended weighted ratio of 0.42.

Table E-9
Adequacy of Open Space Resources of the Non-Residential Study Area: 2023 No-Action Condition

	Population	Open Space Acreage			Open Space Ratios per 1,000 People			CEQR Technical Manual Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (1/4-Mile) Study Area										
Residential	20,100	4.65	1.16	3.49	0.231	0.058	0.174	2.50	0.5	2.0
Combined Residential & Non-Residential	26,203				N/A	0.042	N/A	N/A	0.42[1]	N/A

Notes:
[1] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 residents.

VI. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

This section describes the open space conditions that would result from the Proposed Actions by 2023. It evaluates the potential for the Proposed Actions to result in significant adverse impacts to open space resources directly and indirectly based on a comparison of the No-Action condition (described above) to the With-Action condition.

Residential (1/2-mile) Study Area

Study Area Population

In the future with the Proposed Actions, it is estimated 692 new residents (net) would be introduced to the Development Site. Based on this incremental residential population growth, the study area's population would increase to a total of 60,430 residents in the 2023 With-Action condition.

Direct Effects Analysis

The Proposed Actions would not have a direct effect on any study area open space resources. Construction and operation of the Proposed Project would not cause the physical loss of public open space because of encroachment or displacement of the space; would not change the use of an open space so that it no longer serves the same user population; and would not limit public access to an open space resource. In addition, as discussed in other attachments of this EAS, the Proposed Actions would not result in significant adverse shadows, air quality, noise, or construction impacts on study area open space resources.

Indirect Effects Analysis

As noted above, the open space impact analysis consists of both a quantitative assessment and a qualitative assessment. The quantitative assessment considers how a proposed action would change the open space ratios in the study area. As the half-mile study area open space ratios are significantly less than both the City's optimal benchmark of 2.5 acres of open space per 1,000 residents and the City's median community district open space ratio of 1.5 acres of open space per 1,000 residents, a reduction in the open space ratio of as small as one percent may be considered significant, depending on the area of the City, and in consideration of qualitative factors, including proximity to nearby destination open space resources, the connectivity of open space, the effects of new open space provided by the proposed action, and private open space created by the proposed action not available to the general public. It is recognized that the City's planning goals are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks indicating how well an area is served by open space.

Assessment of Open Space Adequacy

Quantitative Assessment

In the 2023 With-Action condition, the additional population introduced to the half-mile study area by the Proposed Actions would further increase the demand on the area's open space resources. As indicated in **Table E-10**, the With-Action active and passive open space ratios per 1,000 residents are expected to remain at 0.17 and 0.25, respectively, unchanged from the No-Action condition. The total open space ratio in the half-mile study area would decrease to 0.41 acres per 1,000 residents, from 0.42 acres per 1,000 residents under the No-action condition. Similar to the No-Action condition, all ratios would remain below the City's community district median and the City's optimal planning guidelines.

Table E-10: Adequacy of Open Space Resources of the Residential Study Area: With-Action Condition

2023 With-Action Population	Open Space Acreage			Open Space per 1,000 Residents			City Open Space Planning Goals		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
60,397	25.06	10.05	15.01	0.41	0.17	0.25	2.50	2.00	0.50

Qualitative Assessment

In the future with the Proposed Actions, the half-mile study area would continue to have a shortfall of open space. However, although the existing open space ratios in the study area would remain less than the City's community district median and the City's planning goals both without and with the Proposed Actions, the deficiency of open space resources within the study area would be ameliorated by several factors. There are 16 open space resources totaling 25.06 acres within the study area. All of the study area open space resources included in the quantitative analysis were found to be in excellent or good condition. In addition, a majority of the open spaces have only low or moderate utilization levels and would be able to absorb additional users. Moreover, a wide variety of active and passive open space uses are available, ranging from areas with passive uses, such as plazas containing walkways, benches, and game tables, to active uses, such as playgrounds, spray showers, multiple basketball and handball courts, and several synthetic turf-fields. Further, as discussed above, there are eight community gardens located within the study area totaling approximately 0.89 acres. While these resources are not included in the quantitative analysis, they would be factors in alleviating the half-mile study area's open space deficiency.

Additionally, the proximity of Prospect Park, which is located adjacent to the southern boundary of the study area, to the south of Grand Army Plaza, and Fort Greene Park, which is located roughly three blocks to the west of the northern boundary of the study area, would both be factors in alleviating the half-mile study area's open space deficiency. Fort Greene Park, which contains approximately 30.17 acres of publicly accessible open space, includes numerous active and passive open space uses: Active uses include playgrounds, spray showers, basketball and tennis courts, and a dog park, while passive uses include the Prison Ship Martyrs Monument, a nature center, barbecue and picnic areas, walkways, benches, and a variety of landscaped and forested areas. Prospect Park, which contains approximately 526.25 acres of publicly accessible open space, is one of the largest public parks in Brooklyn. This destination park includes numerous active and passive open space uses: Active uses include playgrounds, spray showers, baseball fields, tennis courts, fitness equipment, dog parks, while passive uses include a nature center, hiking trails, fishing, barbecue and picnic areas, greenways (for cycling and walking), benches, and a variety of landscaped lawns and forested areas. These large, destination parks located in close proximity to the study area would help in alleviating the half-mile study area's open space deficiency.

Determining Impact Significance

A significant adverse open space impact may occur if a proposed action would reduce the open space ratio by more than five percent in areas that are currently below the City's community district median open space ratio of 1.5 acres per 1,000 residents. In areas that are extremely lacking in open space, a reduction of as little as one percent may be considered significant, depending on the area of the City. Conversely, in areas that are well-served by open space, a greater percentage of change (more than five percent) may be tolerated. These reductions may result in the overburdening of existing facilities or further exacerbating a deficiency in open space. It should be noted that while the Development Site is located in an area considered well-served by open space, the open space ratio for the study area is low. **Table E-11** displays the study area's open space ratio percentage changes from the No-Action condition to the With-Action condition under the Proposed Actions.

Table E-11: Residential Open Space Ratios Summary

Ratio	*CEQR Technical Manual* Open Space Optimal Planning Goal (acres per 1,000)	Open Space Ratios per 1,000			Percent Change (Future No-Action to Future With-Action)
		Existing	No-Action	With-Action	
Residential (½-Mile) Study Area					
Total	2.5	0.48	0.42	0.41	-1.15
Active	2.0	0.19	0.17	0.17	-1.15
Passive	0.5	0.29	0.25	0.25	-1.15

In the future with the Proposed Actions, the total, active, and passive open space ratios would each decrease by approximately 1.15 percent from the No-Action condition. While the study area open space ratio is low, demand for open space generated by the Proposed Actions would not significantly exacerbate the No-Action deficiency, and the population added as a result of the Proposed Actions is not expected to noticeably affect utilization of the half-mile study area's open space resources. As discussed above, the deficiency of open space resources within the study area would be ameliorated by several factors. All of the study area open space resources included in the quantitative analysis were found to be in excellent or good condition. In addition, a majority of the open spaces have only low or moderate utilization levels and would be able to absorb additional users. Moreover, a wide variety of active and passive open space uses are available, ranging from areas with passive uses, such as plazas containing walkways, benches,

and game tables, to active uses, such as playgrounds, spray showers, multiple basketball and handball courts, and several synthetic turf-fields. In addition, the proximity to several destination open space resources (Prospect Park, Fort Greene Park) would also ameliorate the low open space ratio within the study area.

As the total, active, and passive open space ratios would decrease by less than five percent, no significant adverse impacts would result.

Non-Residential (1/4-mile) Study Area

Indirect Effects Analysis

As noted above, under Scenario 2, the Proposed Actions would exceed the indirect non-residential open space analysis threshold, and as such, a detailed analysis of indirect effects is warranted and is provided below.

Study Area Population

In the 2023 future with the Proposed Actions, under Scenario 2, 811 additional employees would be introduced in the Project Area compared to No-Action conditions. As indicated below in **Table E-12**, the non-residential (¼-mile) study area's combined non-residential and residential population is expected to increase to 27,014.

Table E-12
2023 With-Action Non-Residential (¼-Mile) Open Space Study Area Population

	No-Action Population	Additional Population as a Result of the Proposed Project[1]	Future 2023 With-Action Population
Residential	20,100	0	20,792
Combined Residential & Non-Residential	26,203	811	27,014

Notes:
[1]Worker population estimate for With-Action developments based on standard rates and are as follows: 3 workers per 1,000 sf retail & community facility space; 4 workers per 1,000 sf of office.

Assessment of Open Space Adequacy

Quantitative Assessment

As presented in **Table E-13**, in the future with the Proposed Actions, the passive open space ratio for the combined population of residents and non-residents would decrease to 0.043 (from 0.044 under No-Action conditions). The recommended weighted ratio would decrease to 0.41 acres per 1,000 people (from 0.42 under No-Action conditions).

Table E-13
Adequacy of Open Space Resources: 2023 With-Action Condition

	Population	Open Space Acreage			Open Space Ratios per 1,000 People			CEQR Technical Manual Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (1/4-Mile) Study Area										
Residential	20,100	4.65	1.16	3.49	0.231	0.058	0.174	2.50	0.50	2.0
Combined Residential & Non-Residential	27,014				N/A	0.043	N/A	N/A	0.41[1]	N/A

Notes:
[1] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents.

Qualitative Assessment

In the future with the Proposed Actions, the combined residential/non-residential passive open space ratios in the non-residential (¼-mile) study area would remain below the recommended weighted ratio 0.42 acres per 1,000 people. The majority of the non-residential study area open spaces are in good-to-excellent condition and use levels are characterized by low-to-moderate utilization (refer to **Table E-4**).

Additionally, the quantitative analysis is conservative as it assumes that the study area's residents and daytime users are separate populations, whereas it is likely that some of the residents live near their workplace or work from home, resulting in some double-counting of the daily user population in the non-residential (¼-mile) study area.

Determining Impact Significance

A significant adverse open space impact may occur if a proposed action would reduce the open space ratio by more than five percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents and 0.15 acres per 1,000 non-residents. In areas that are extremely lacking in open space, a reduction as little as one percent may be considered significant, depending on the area of the City. Conversely, in areas that are well-served by open space, a greater percentage of change (more than five percent) may be tolerated. These reductions may result in overburdening existing facilities or further exacerbating a deficiency in open space.

Table E-14 displays the non-residential (¼-mile) study area open space ratio percentage change from the No-Action to the With-Action conditions. As presented in **Table E-14**, the ratio for the combined population of residents and non-residents would decrease by less five percent from No-Action conditions (2.41 percent) from 0.044 acres to 0.043 acres per 1,000 people, and it will continue to be below the calculated With-Action recommended weighted ratio of 0.41 acres per 1,000 people.

In the future with the Proposed Actions, the combined residential and non-residential passive open space ratio would each decrease by approximately 2.41 percent from the No-Action condition. As discussed above, while the Development Site is located in an area that is considered well-served by open space, the study area open space ratio is low. However, while the study area's open space ratio is low, demand for open space generated by the Proposed Actions would not significantly exacerbate the No-Action deficiency, and the population added as a result of the Proposed Actions is not expected to noticeably affect utilization of the half-mile study area's open space resources. As discussed above, the deficiency of

open space resources within the study area would be ameliorated by several factors. All of the study area open space resources included in the quantitative analysis were found to be in excellent or good condition. In addition, a majority of the open spaces have only low or moderate utilization levels and would be able to absorb additional users. Moreover, a wide variety of passive open space uses are available, including areas such as plazas containing walkways, benches, and game tables. In addition, the proximity to several destination open space resources (Prospect Park, Fort Greene Park) would also ameliorate the low open space ratio within the study area. As such, demand for open space generated by the Proposed Actions would not significantly exacerbate the No-Action deficiency, and the population added as a result of the Proposed Actions is not expected to noticeably affect utilization of the quarter-mile study area's open space resources. As the passive open space ratio would decrease by less than five percent, no significant adverse impacts under Scenario 2 would result.

Table E-14
Non-Residential (¼-Mile) Open Space Ratios Summary

Ratio	*CEQR Technical Manual* Open Space Optimal Planning Goal (acres per 1,000)	Open Space Ratios Per 1,000			Percent Change
		Existing	No-Action	With-Action	Future No-Action to Future With-Action
Non-Residential (1/4-Mile) Study Area					
Residential					
Passive	0.50	0.075	0.058	0.058	**0%**
Active	2.0	0.226	0.174	0.174	**0%**
Total	2.50	0.301	0.231	0.231	**0%**
Combined Residential & Non-Residential – Passive	0.41[1]	0.058	0.044	0.043	**-2.41%**

Notes:
[1] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents.

I. INTRODUCTION

This attachment assesses the potential for the Proposed Actions to result in incremental shadows long enough to reach any nearby publicly accessible open spaces or other sunlight-sensitive resources. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, a shadows assessment is required if a proposed action would result in structures (or additions to existing structures) of 50 feet or greater in height, or those that would be located adjacent to, or across the street from, a sunlight-sensitive resource. As discussed in **Attachment A, "Project Description,"** the Proposed Actions would facilitate the development of a new building greater than 50 feet in height located adjacent to several sunlight-sensitive resources. As such, a detailed shadows analysis was prepared in accordance with *CEQR Technical Manual* guidance to determine the potential for the Proposed Actions to result in significant adverse impacts on sunlight-sensitive resources.

II. PRINCIPAL CONCLUSIONS

The Proposed Actions would result in incremental shadow coverage (i.e. additional, or new, shadow coverage) on portions of one sunlight-sensitive historic resource: The Church of St. Luke and St. Matthew. The extent and duration of the incremental shadows on this historic resource would not (1) significantly reduce or completely eliminate direct sunlight exposure on any of the historic resource's sunlight-sensitive features; and would not (2) significantly alter the public's utilization or enjoyment of the historic resource's sunlight-sensitive features. Therefore, incremental shadows from the Proposed Project on the Church of St. Luke and St. Matthew would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

III. METHODOLOGY

According to the *CEQR Technical Manual*, the longest shadow a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. For actions or projects resulting in structures less than 50 feet tall, a shadow assessment is generally not necessary, unless the site is adjacent to a park, historic resource, or important natural feature (if the feature that makes the structure significant depends on sunlight).

First, a preliminary screening assessment must be conducted to ascertain whether shadows resulting from an action or project could reach any sunlight-sensitive resource at any time of year. The *CEQR Technical Manual* defines sunlight-sensitive resources as those resources that depend on sunlight or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity. The following are considered to be sunlight-sensitive resources[1]:

[1] According to the 2014 *CEQR Technical Manual*, city streets, sidewalks, and private open spaces (such as private residential front and back yards, stoops, and vacant lots) are not considered to be sunlight-sensitive resources.

- *Public open space* (e.g., parks, playgrounds, plazas, schoolyards, greenways, and landscaped medians with seating). Planted areas within unused portions of roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources. The use of an open space establishes its sensitivity to shadows. This sensitivity is assessed for both (1) warm-weather dependent features, such as wading pools and sandboxes, or vegetation that could be affected by loss of sunlight during the growing season (i.e., March through October); and (2) features, such as benches, that could be affected by a loss of winter sunlight. Open space uses that rely on sunlight include: Passive uses, such as sitting or sunning areas; active uses, such as playfields or paved courts; and such activities as gardening, or children's wading pools and sprinklers. Where lawns are actively used, the turf requires extensive sunlight. Vegetation requiring direct sunlight includes the tree canopy, flowering plants, and plots in community gardens. Generally, four to six hours a day of sunlight, particularly in the growing season, is a minimum requirement.

- *Features of historic architectural resources that depend on sunlight for their enjoyment by the public.* Only the sunlight-sensitive features are considered, as opposed to the entire architectural resource. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depends on the contrast between light and dark (e.g., deep recesses or voids, such as open galleries, arcades, recessed balconies, deep window reveals, and prominent rustication); elaborate, highly carved ornamentation; stained glass windows; exterior building materials and color that depend on direct sunlight for visual character (e.g., the polychromy [multicolored] features found on Victorian Gothic Revival or Art Deco facades); historic landscapes, such as scenic landmarks, including vegetation recognized as an historic feature of the landscape; and structural features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as an 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.

The preliminary shadow screening assessment consists of three tiers of analysis. The first tier determines a simple radius around the site representing the longest shadow that could be cast by the proposed building. If there are sunlight-sensitive resources within the radius, the analysis proceeds to the second tier, which reduces the area that could be affected by action-generated shadows by accounting for a specific range of angles that can never receive shade in New York City due to the path of the sun in the northern hemisphere. 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 new shadows by looking at specific representative days of the year and determining the maximum extent of shadow coverage 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 – or the additional, or new, shadow that a building or other built structure resulting from a proposed action would cast on a sunlight-sensitive resource during the year – resulting from a proposed action. Incremental shadows are determined by establishing a baseline condition (the No-Action scenario) and comparing it to the future condition resulting from the proposed action (the With-Action scenario), thus illustrating the shadows cast by existing or future buildings and distinguishing the additional (incremental) shadows cast by a proposed project. In accordance with *CEQR Technical Manual* guidance, shadows on sunlight-sensitive resources of concern were modeled for four representative days of the

year. For the New York City area, the months of interest for an open space resource encompass the growing season (i.e., March through October) and one month between November and February representing a cold-weather month (usually December). Representative days for the growing season are generally the March 21 vernal equinox (or the September 21 autumnal equinox, which is approximately the same), the June 21 summer solstice, and a spring or summer day halfway between the summer solstice and equinoxes, such as May 6 or August 6 (which are approximately the same). For the cold weather months, the December 21 winter solstice is included to demonstrate conditions when open space users rely most heavily on available sunlight warmth. As these months and days are representative of the full range of possible shadows, they are also used for assessing shadows on sunlight-sensitive resources.

The *CEQR Technical Manual* defines the temporal limits of a shadow analysis period to fall from an hour and a half after sunrise to an hour and a half before sunset.

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. As described in the *CEQR Technical Manual*, an incremental shadow is generally not considered significant when its duration is no longer than ten minutes at any time of year and the resource continues to receive substantial direct sunlight. A significant shadow impact generally occurs when an incremental shadow of ten minutes or longer falls on a sunlight-sensitive resource and results in one of the following:

- *Vegetation:* A substantial reduction in sunlight available to sunlight-sensitive features of the resource to less than the minimum time necessary for their survival (when there would be sufficient sunlight in the future without the project) or a reduction in direct sunlight exposure where the sensitive features of the resource are already subject to substandard sunlight (i.e., less than the minimum time necessary for their survival).

- *Historic and cultural resources:* A substantial reduction in sunlight available for the enjoyment or appreciation of the sunlight-sensitive features of an historic or cultural resource.

- *Open space utilization:* A substantial reduction in the usability of open space as a result of increased shadow, including information regarding anticipated new users and the open space's utilization rates throughout the affected time periods.

- *For any sunlight-sensitive feature of a resource:* Complete elimination of all direct sunlight on the sunlight-sensitive feature(s) of the resource, when the complete elimination results in substantial effects on the survival, enjoyment, or, in the case of open space or natural resources, the use of the resource.

In general, a significant adverse shadow impact occurs when the incremental shadow added by a proposed action falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

IV. PRELIMINARY SCREENING

Tier 1 Screening Assessment

According to the *CEQR Technical Manual*, the longest shadow that a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. The maximum shadow radius for the Development Site (882 feet) was determined using the Proposed Project's maximum height (including mechanical bulkhead) of approximately 205 feet.

Base maps were prepared (refer to **Figure F-1**) for the Development Site, which identify all potentially sunlight-sensitive resources within the maximum shadow radius. Within the longest shadow study area, several potentially sunlight-sensitive resources were identified. Therefore, further screening was warranted to determine whether these resources could be affected by action-generated shadows.

Tier 2 Screening Assessment

Due to the path of the sun across the sky in the northern hemisphere, no shadow can be cast in a triangular area south of any given site. In New York City, this area lies between -108 and +108 degrees from true north. The purpose of the Tier 2 screening is to determine whether the sunlight-sensitive resources identified in the Tier 1 screening are located within portions of the longest shadow study area that can receive shade from the Proposed Project.

Figure F-1 provides a base map illustrating the results of the Tier 1 and Tier 2 screening assessments (i.e., the portion of the longest shadow study area lying within -108 degrees from the true north and +108 degrees from true north as measured from the southernmost corner of the Development Site). As shown in **Figure F-1**, three resources were identified as sunlight-sensitive resources that warranted further assessment. **Table F-1** identifies the sunlight-sensitive resources that warranted further assessment.

Table F-1: Sunlight-Sensitive Resources Warranting Further Analysis Based on Tier 1 and 2 Screening

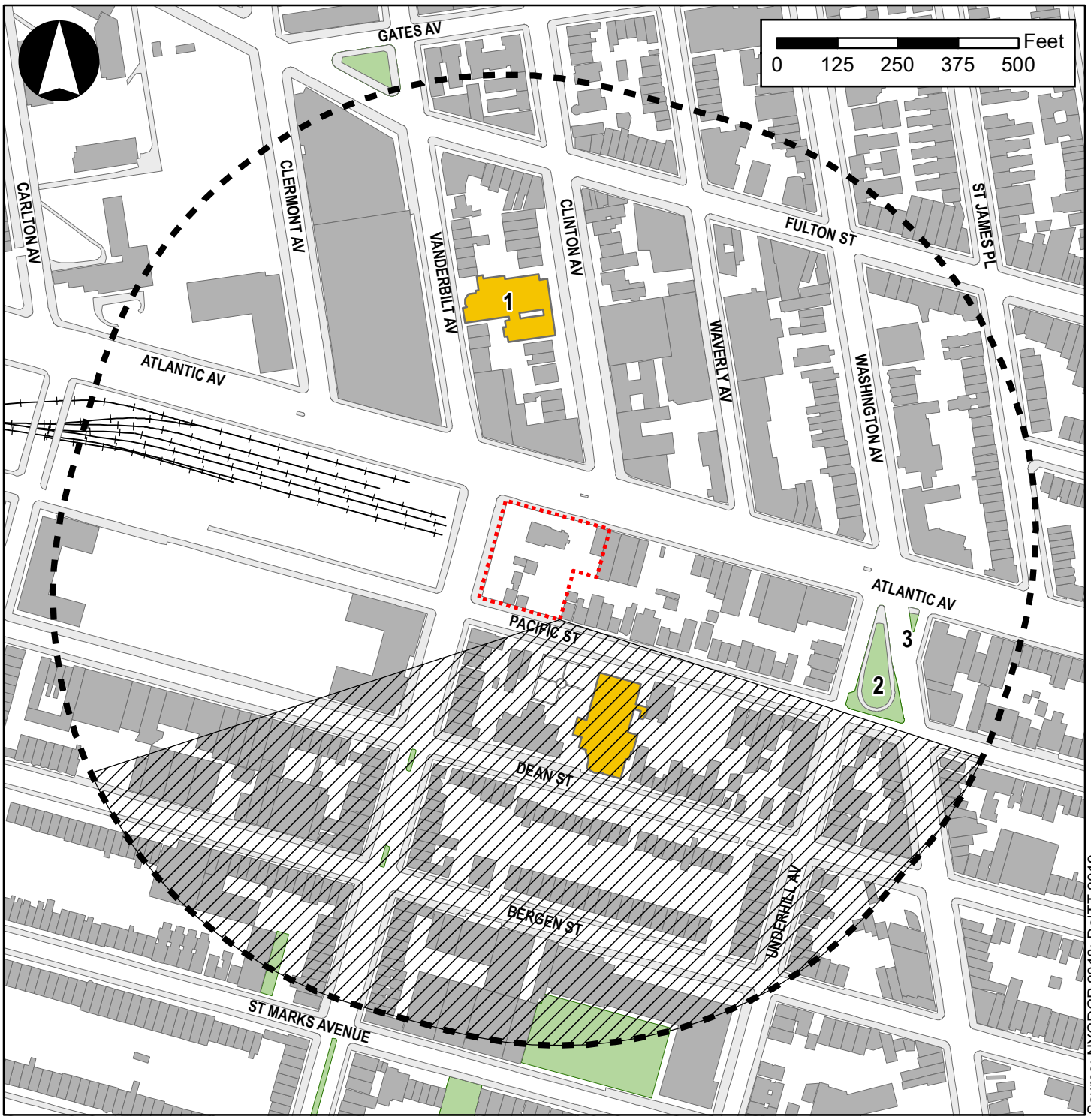
Map No.	Sunlight-Sensitive Resource
1	The Church of St. Luke and St. Matthew
2	Lowry Triangle
3	Greenstreet

Tier 3 Screening Assessment

According to the *CEQR Technical Manual*, a Tier 3 screening assessment should be performed to determine if, in the absence of intervening buildings, shadows resulting from a proposed action can reach a sunlight-sensitive resource, thereby warranting a detailed shadow analysis. The Tier 3 screening assessment is used to determine if shadows resulting from a proposed action can reach a sunlight-sensitive resource at any time between an hour and a half after sunrise and an hour and a half before sunset on representative analysis days.

As action-generated shadows could reach three sunlight-sensitive resources, a Tier 3 assessment was performed using three dimensional (3D) computer mapping software. The 3D model was used to calculate and display action-generated shadows on individual representative analysis days. The model contained

Figure F-1
Tier I & II Shadow Assessment



Source: NYCDCP 2018; DoITT 2019

Legend

- Development Site
- Tier I: Longest Shadow Study Area
- Tier II: Area That Cannot Be Shaded
- Sunlight Sensitive Open Space Resources
- Historic Resources With Potentially Sunlight Sensitive Features
- Sidewalks
- Existing Building Footprints
- Railroad Tracks

3D representations of the elements in the base map used in the preceding assessments and a 3D model of the Proposed Project. At this stage of the assessment, surrounding buildings within the study area were not included in the model so that it may be determined whether action-generated shadows would reach the sunlight-sensitive resources identified.

As shown in **Figures F-2a** and **F-2b**, and presented in **Table F-2**, based on the Tier 3 screening assessment, the potential for new incremental shadows to be cast on the Church of St. Luke and St. Matthew (Map No. 1) on the December 21 analysis day and Lowry Triangle (Map No. 2) on the June 21 analysis day could not be ruled out. Therefore, a detailed shadows analysis is warranted for these two sunlight-sensitive resources. In addition, the Greenstreet (Map No. 3) located to the east of Lowry Triangle would not receive action-generated shadows on any of the four analysis days and would not require any further analysis.

Table F-2: Sunlight-Sensitive Resources Warranting Further Analysis Based on Tier 3 Screening

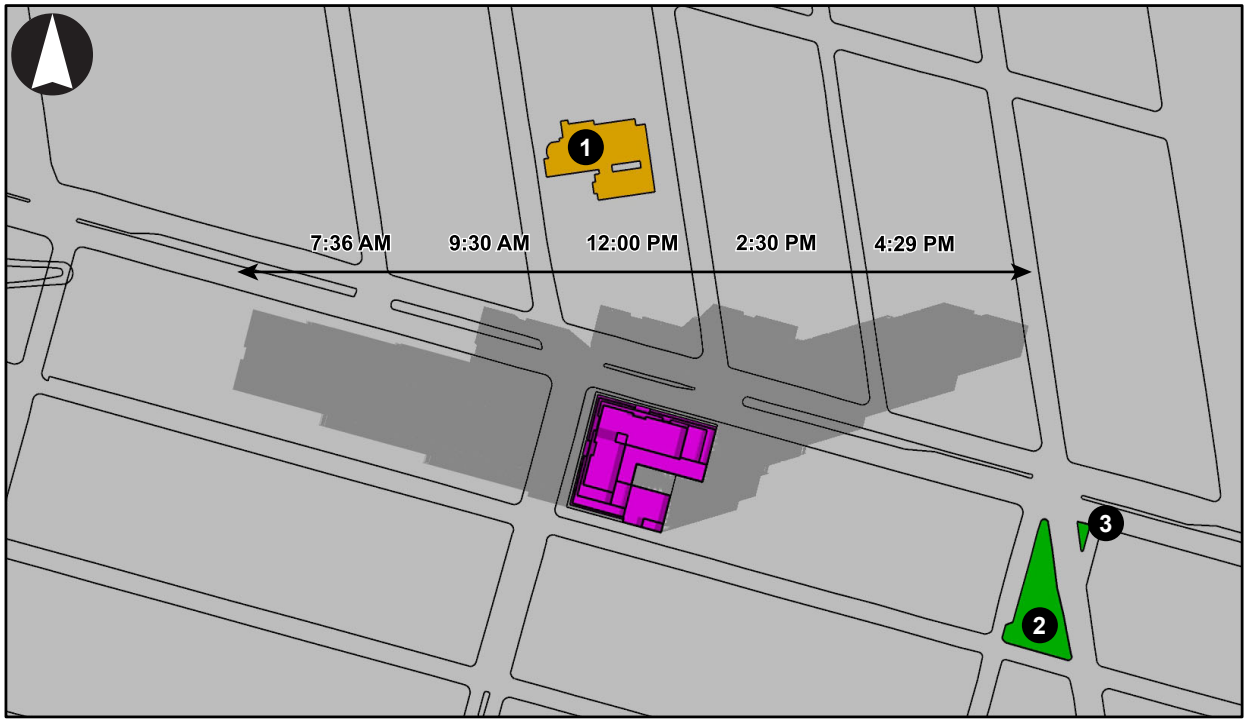
Map No.	Name	March 21/Sept. 21 7:36 AM - 4:29 PM	May 6/August 6 6:27 AM - 5:18 PM	June 21 5:57 AM - 6:01 PM	December 21 8:51 AM - 2:53 PM	Number of Analysis Days
1	The Church of St. Luke and St. Matthew	NO	NO	NO	YES	1
2	Lowry Triangle	NO	NO	YES	NO	1
3	Greenstreet	NO	NO	NO	NO	0

V. DETAILED ANALYSIS OF SHADOW IMPACTS

Resources Potentially Affected by Action-Generated Shadows

The Church of St. Luke and St. Matthew

As detailed in **Attachment G, "Historic & Cultural Resources,"** the Church of St. Luke and St. Matthew comprises a chapel and former Sunday school as well as the main church structure. The church, designed in the Romanesque Revival style with motifs adopted from the 12th century Romanesque churches of northern Italy, is among the largest and finest of the ecclesiastical structures built in the City during the 19th century. The front facade of the building, fronting Clinton Avenue, contains a wide nave with a projecting, tripartite, round-arched entrance porch, a large stained-glass rose window, a corbelled cornice, and octagonal "towerlettes." One of the more unusual features of the church facade is the use of six different building materials, creating a remarkably colorful and textured design. The adjoining chapel is a two-story, peaked-roof structure anchored by a tall square bell tower with a pyramidal roof. The rear of the church, fronting Vanderbilt Avenue, is a three-story brick structure with minimal ornament and simple round-arched, stained-glass windows. The church maintains public worship services on Sunday mornings at 8 AM and 11 AM.

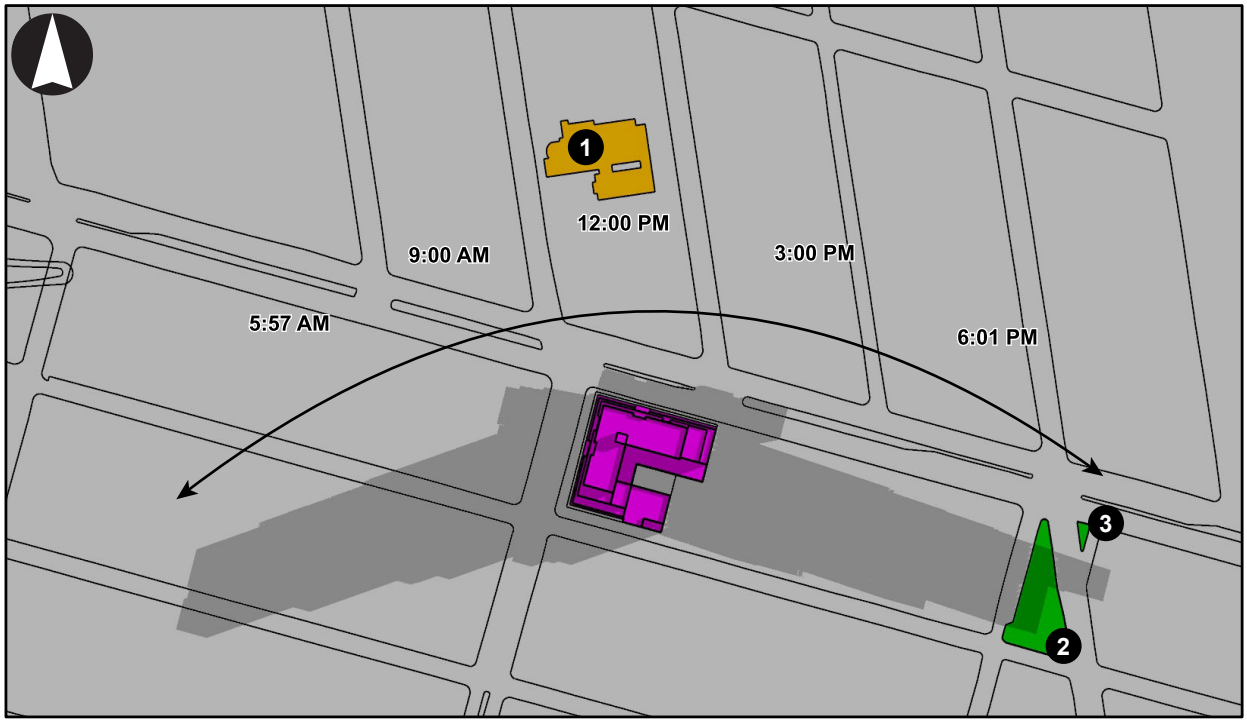


MARCH 21/SEPTEMBER 21

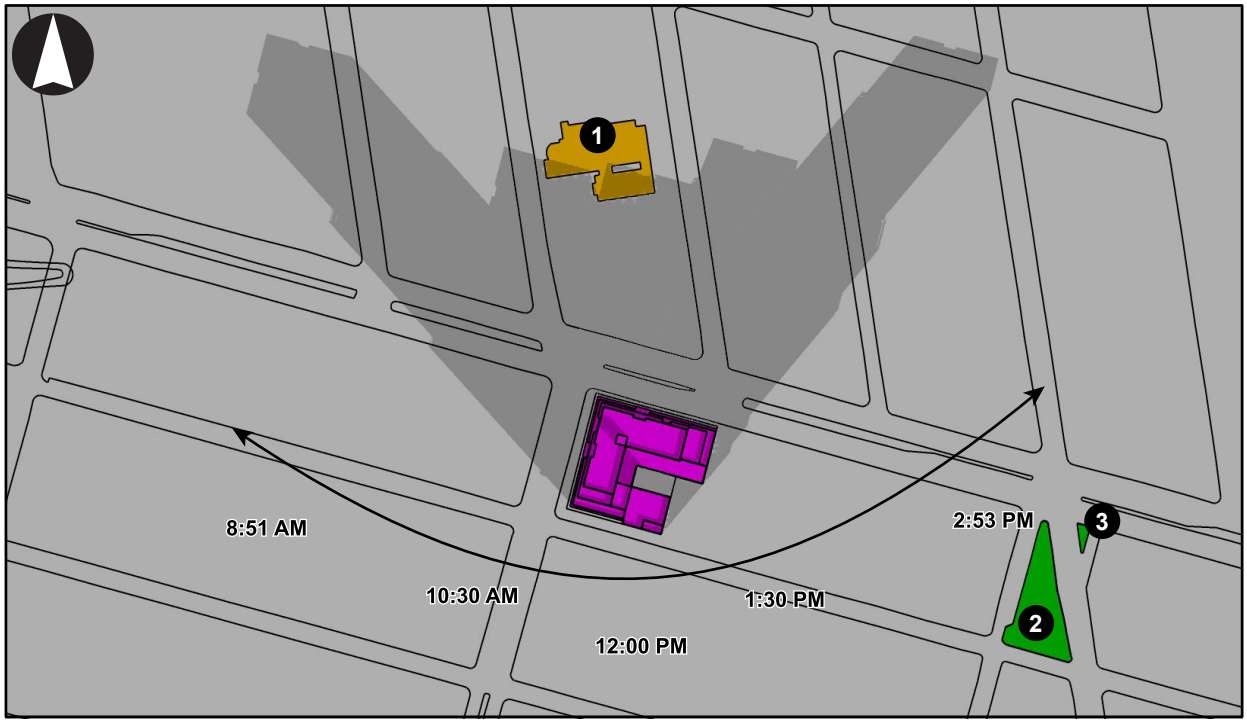
MAY 6/AUGUST 6

Proposed Project **Historic Resource** **Incremental Shadow** **Open Space**

Note: Resources keyed to Table F-1



JUNE 21



DECEMBER 21

Proposed Project
Historic Resource
Incremental Shadow
Open Space

Note: Resources keyed to Table F-1

Lowry Triangle

Lowry Triangle is an approximately 0.11-acre plaza owned and operated by NYC Parks. The plaza, which is largely covered in Belgian stone and hexagonal asphalt pavers, contains a monument and numerous benches, as well as a planted area and multiple trees. Lowry Triangle is open to the public 24 hours a day, seven days a week.

Detailed Shadows Analysis

Per *CEQR Technical Manual* guidance, shadow analyses were performed for the two sunlight-sensitive resources identified above on four representative days of the year: March 21/September 21 (the equinoxes); May 6 (the midpoint between the summer solstice and the equinoxes, and equivalent to August 6); June 21 (the summer solstice and the longest day of the year); and December 21 (the winter solstice and shortest day of the year). These four representative days indicate the range of shadows over the course of the year. As noted previously, *CEQR Technical Manual* guidance defines the temporal limits of a shadow analysis period to fall from an hour and a half after sunrise to an hour and a half before sunset. The results of the shadow analyses show the incremental difference in shadow impact between the No-Action and With-Action scenarios, the results of which are summarized in **Table F-3**.

Table F-3: Duration of Shadows on Sunlight-Sensitive Resources (Increment Compared to No-Action)

Sunlight-Sensitive Resource	Analysis Day	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
The Church f St. Luke and St. Matthew	Shadow enter-exit time	--	--	--	10:14 AM – 12:18 PM
	Incremental shadow duration	--	--	--	2 hours 4 minutes
Lowry Triangle	Shadow enter-exit time	--	--	--	--
	Incremental shadow duration	--	--	--	--

Notes:
[A]All times are Eastern Standard Time; Daylight Saving Time was not accounted for per *CEQR Technical Manual* guidance.
[B]Table indicates the entry and exit times and total duration of incremental shadows for the sunlight-sensitive resources.

As shown in **Table F-3**, incremental action-generated shadows would reach portions of one sunlight-sensitive resource identified in the Tier 3 assessment, the Church of St. Luke and St. Matthew. Increases in shadow coverage would occur on the December 21 representative analysis day. Increases in shadow coverage would not occur on the March 21/September 21, May 6/August 6, and June 21 representative analysis days. The Tier 3 screening assessment discussed above shows the potential for action-generated shadows reaching portions of Lowry Triangle on the June 21 representative analysis day. However, due to the presence of intervening buildings between Lowry Triangle and the Development Site, the detailed shadows analysis concluded that no new incremental shadows would be cast on this sunlight sensitive resource, and therefore, would not result in significant adverse impacts (refer to **Figures F-3a** and **F-3b**). **Figures F-4a** and **F-4b**, provided at the end of this attachment, show representative shadow views for the Church of St. Luke and St. Matthew on two of the four representative analysis days: June 21 and December 21.

Figure F-3a
Lowry Triangle
Incremental Shadows on June 21

5:45 PM: No-Action

5:45 PM: With-Action

Proposed Project Open Space Incremental Shadow

Figure F-3b
Lowry Triangle
Incremental Shadows on June 21

5:55 PM: No-Action

5:55 PM: With-Action

Proposed Project Open Space Incremental Shadow

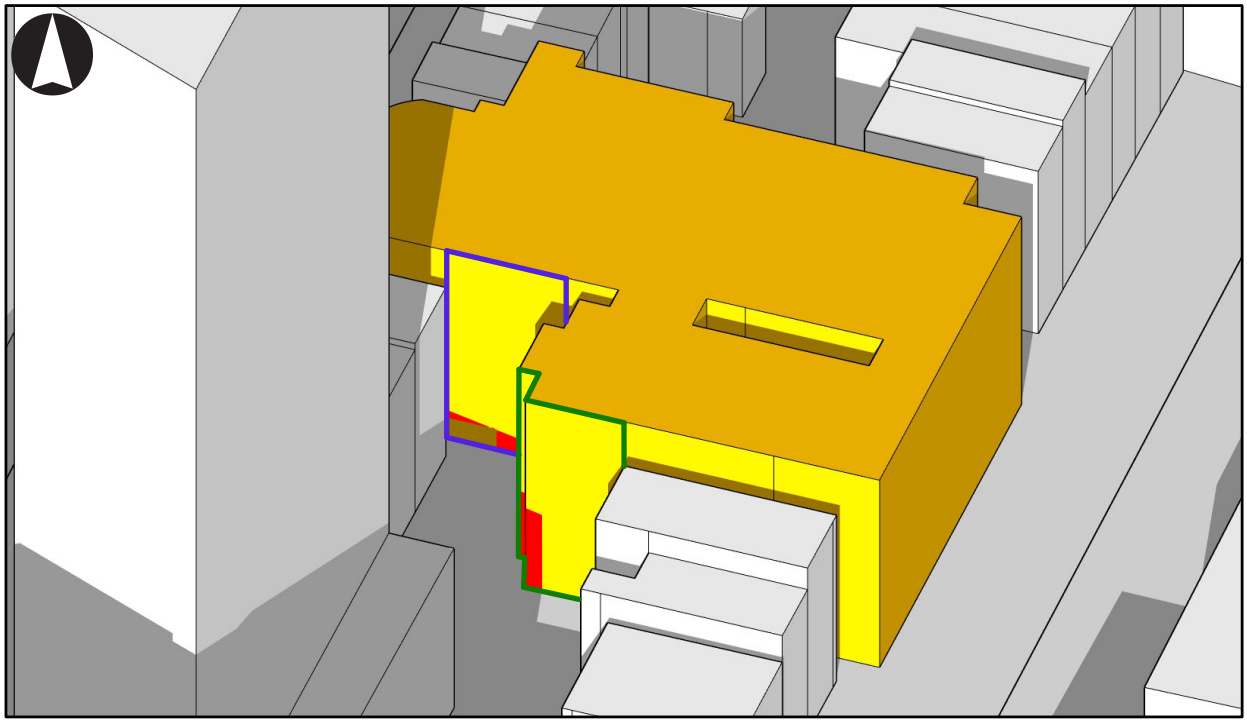
It should be noted that, per *CEQR Technical Manual* guidance, all times reported herein are Eastern Standard Time and do not reflect adjustments for Daylight Saving Time that is in effect from mid-March to early November. As such, the times reported in this chapter for March 21/September 21, May 6/August 6, and June 21 need to have one hour added to reflect Daylight Saving Time.

Assessment

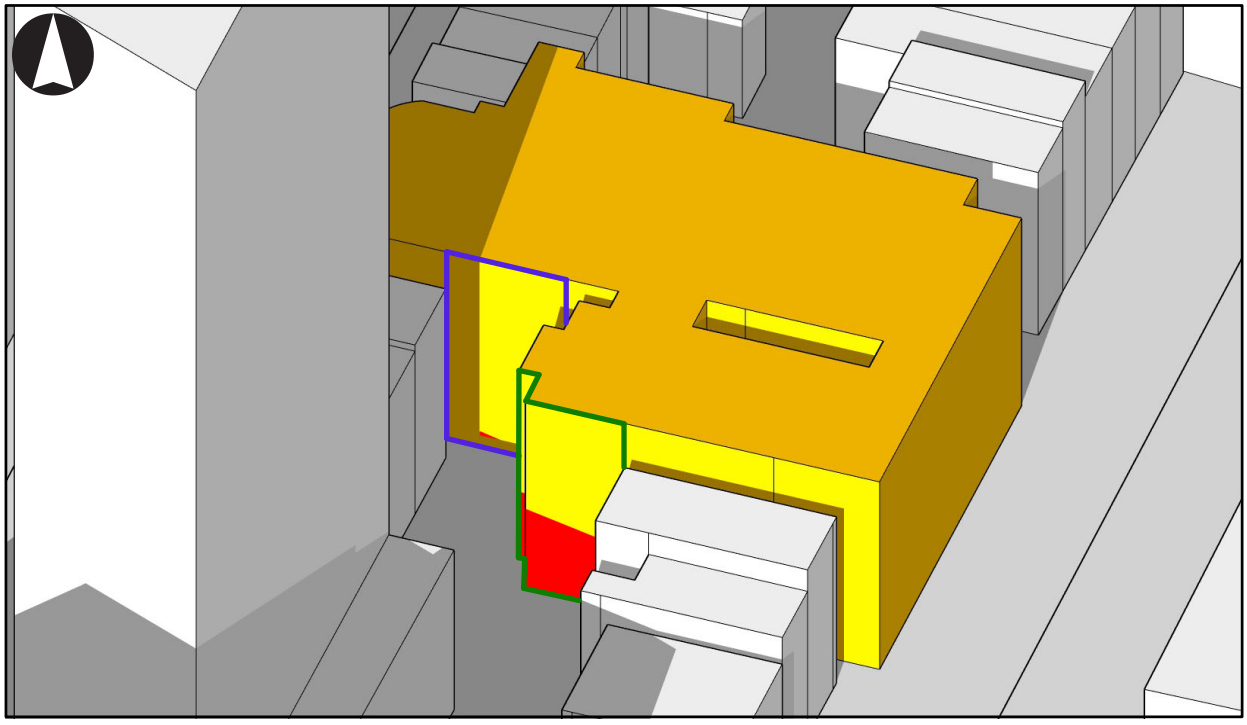
The Church of St. Luke and St. Matthew

The detailed shadows analysis determined that the duration and coverage of incremental shadows on the Church of St. Luke and St. Matthew would be limited and would not affect portions of the building with sunlight sensitive features (refer to **Figures F-4a** and **F-4b**). The Proposed Actions would result in new incremental shadows on this historic resource on the December 21 representative analysis day for a total duration of two hours and four minutes during the late morning to early afternoon hours. While the church contains large stained glass windows on its southern facade (refer to **Figure F-5**), incremental shadows would be limited to the lower portions of the southern facade and would not have the potential to affect any of the church's sunlight-sensitive features. Therefore, the Proposed Actions would not result in significant adverse shadow impacts on the Church of St. Luke and St. Matthew.

The Church of St. Luke and St. Matthew
Incremental Shadows on December 21



10:30 AM



11:00 AM

Proposed Project
(Not shown in this figure)

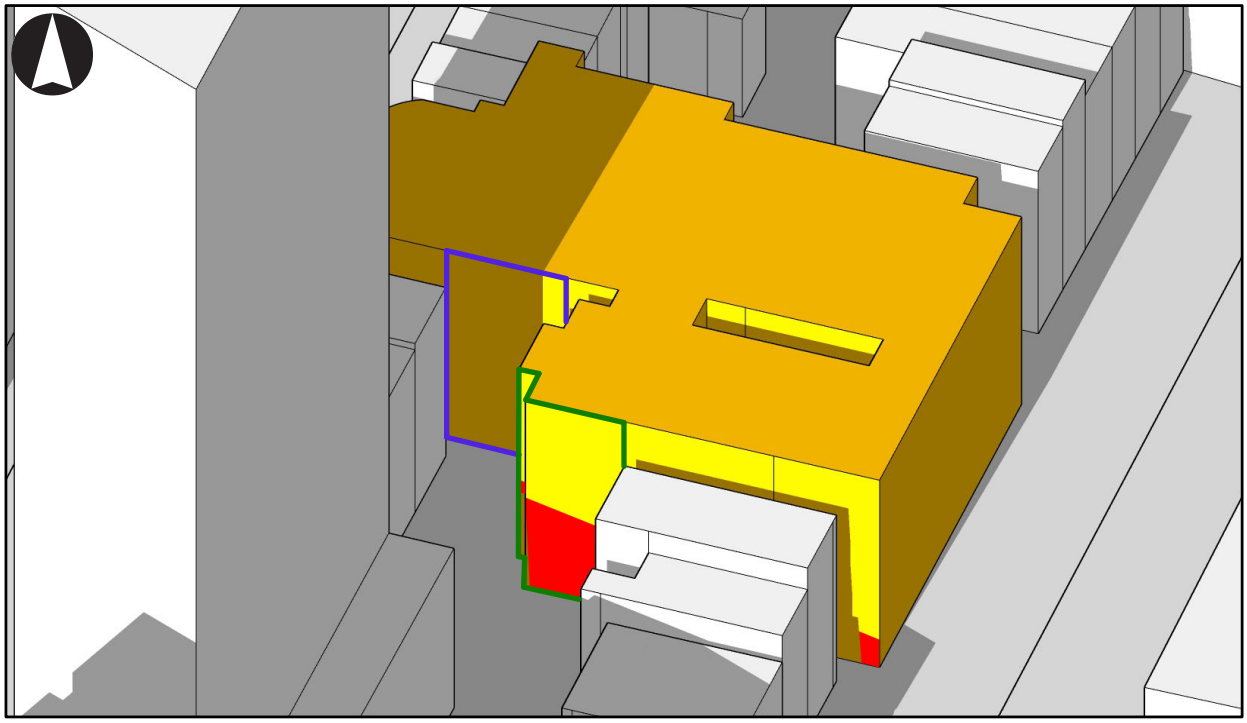
Historic Resource

Incremental Shadow

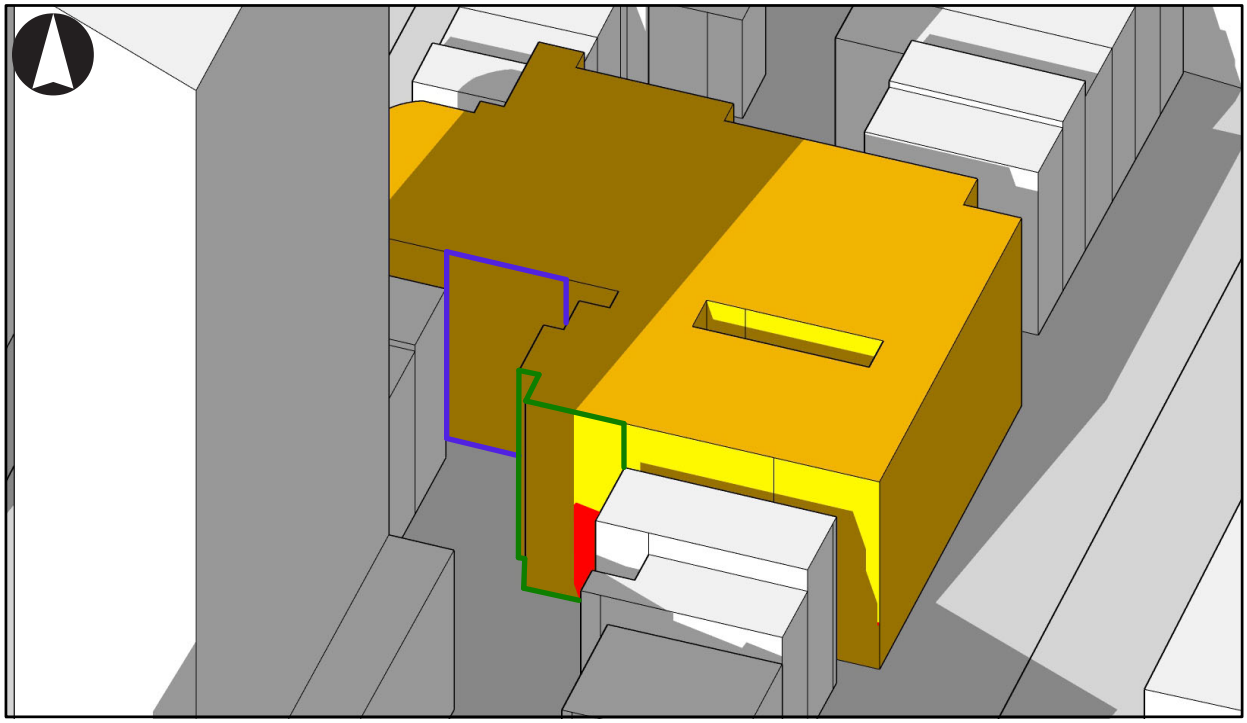
Approximate location of Church Transept Windows

Approximate location of Rectory Arch Windows

The Church of St. Luke and St. Matthew
Incremental Shadows on December 21



11:30 AM



12:00 PM

Proposed Project
(Not shown in this figure)

Historic Resource

Incremental Shadow

Approximate location of Church Transept Windows

Approximate location of Rectory Arch Windows

Source: Google Earth

I. INTRODUCTION

Historic and cultural resources include both architectural and archaeological resources. The *City Environmental Quality Review* (CEQR) *Technical Manual* identifies historic and cultural resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes designated New York City Landmarks (NYCL); properties calendared for consideration as landmarks by the New York City Landmarks Preservation Commission (LPC); properties listed on the State/National Registers of Historic Places (S/NR) or contained within a district listed in or formally determined eligible for S/NR listing; properties recommended by the New York State Board for listing on the S/NR; National Historic Landmarks; and properties not identified by one of the programs listed above, but that meet their eligibility requirements. An assessment of architectural and/or archaeological resources is usually needed for projects that are located adjacent to historic or landmark structures or within historic districts, or projects that require in-ground disturbance, unless such disturbance occurs in an area that has already been excavated.

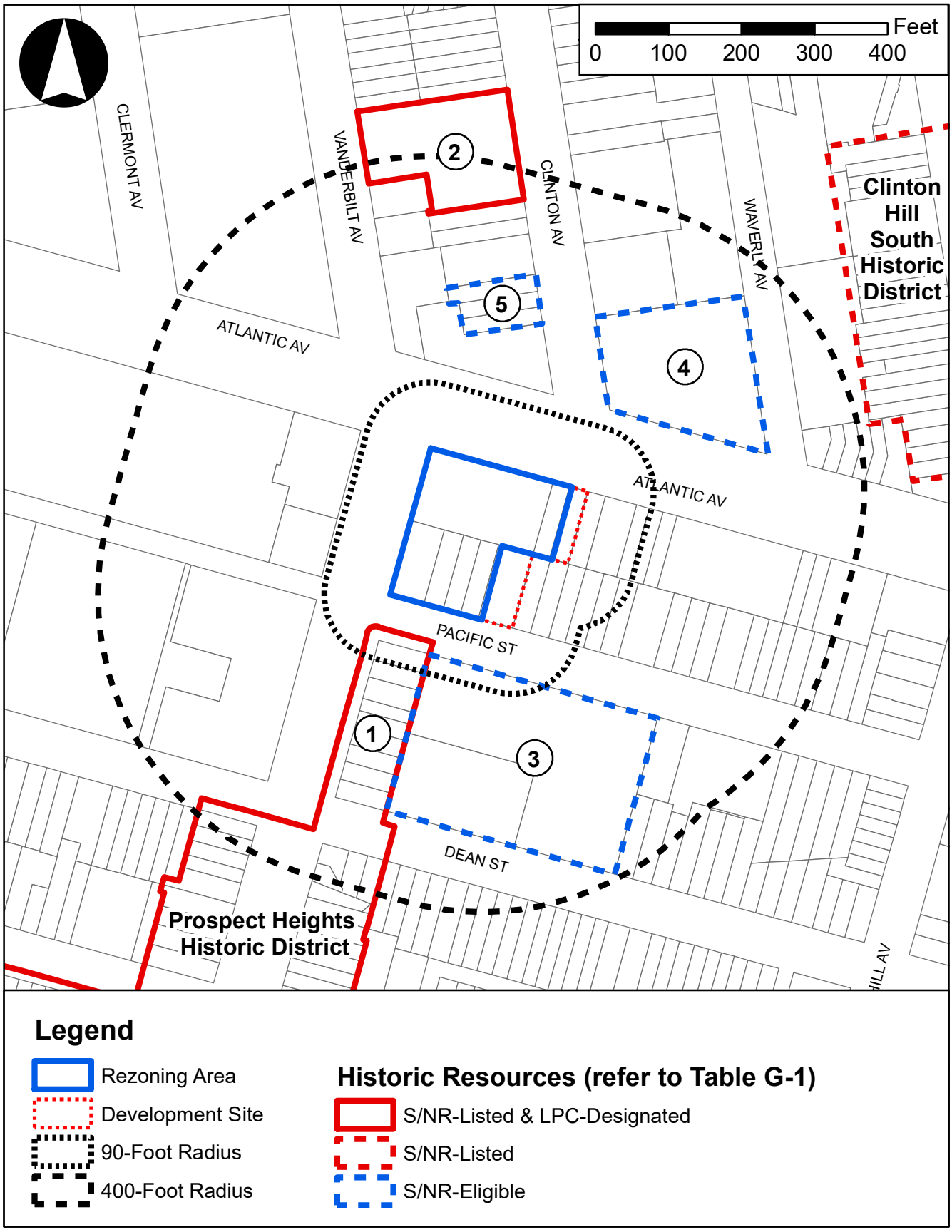
As the Development Site is located in close proximity to several designated and eligible historic resources, it is necessary to assess the potential impacts of the Proposed Actions on historic architectural resources. According to *CEQR Technical Manual* guidance, impacts on historic architectural resources are considered on the site affected by the Proposed Actions and in the area surrounding the Development Site. The historic resources study area is therefore defined as the Development Site plus an approximately 400-foot radius around the Development Site (refer to **Figure G-1**), which is typically adequate for the assessment of historic architectural resources in terms of physical, visual, and historical relationships.

Archaeological resources are considered only in those areas where new excavation is likely and would result in new in-ground disturbances as compared to No-Action conditions. The Development Site at 840 Atlantic Avenue in Brooklyn is expected to be redeveloped as a result of the Proposed Actions with new in-ground disturbance. However, in a letter dated November 28, 2018, LPC determined that none of the lots that comprise the Development Site are archaeologically sensitive (refer to **Appendix A**). Therefore, the Proposed Actions would not result in any significant adverse archaeological impacts and a detailed archaeological analysis is not warranted. As such, this attachment focuses exclusively on historic architectural resources.

II. PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in any significant adverse impacts to historic architectural resources. As detailed below, the Development Site does not contain any identified historic resources. Additionally, as the Proposed Actions are site-specific, they would not result in any direct impacts to surrounding historic resources. As shown in **Figure G-1**, the Development Site is located to the north of the S/NR-listed and LPC-designated Prospect Heights Historic District and the S/NR-eligible St. Joseph's R.C. Church Complex. Construction period impacts on these historic resources would be minimized, and

Figure G-1
Historic Resources



the historic structures would be protected, by ensuring that construction on the Development Site adheres to all applicable construction guidelines and follows the requirements laid out in the New York City Department of Buildings (DOB)'s Technical Policy and Procedure Notice (TPPN) #10/88. Under TPPN #10/88, a Construction Protection Plan would be provided to the LPC for review and approval prior to any demolition and construction on the Development Site. As such, no construction-related impacts on historic resources would be anticipated as a result of the Proposed Actions.

Additionally, the Proposed Actions would not result in significant adverse indirect impacts on existing historic resources. As detailed below, the Proposed Actions would facilitate the demolition of the existing low-rise buildings on the Development Site, and the construction of an 18-story mixed-use building on the property. No incompatible, visual, audible, or atmospheric elements would be introduced by the Proposed Actions to any historic architectural resource's setting under With-Action conditions. The Proposed Development would not alter the relationship of any identified historic architectural resources to the streetscape, as all streets in the study area would remain open and each resource's relationship with the street would remain unchanged in the future with the Proposed Actions. Although the existing views of the bell towers of St. Joseph's R.C. Church Complex (Resource #3 in **Figure G-1**) from Atlantic and Vanderbilt Avenues, the existing views of the Telephone Building (Resource #4) from Vanderbilt Avenue and Pacific Street, and the existing views of the Church of St. Luke and St. Matthew's bell tower (Resource #2) from Pacific Street would be obstructed by the Proposed Development, none of these eliminated viewsheds are significant, as more proximate views of these historic buildings exist from adjacent public streets and sidewalks. Additionally, all significant elements of these buildings would remain visible as no primary façades, significant architectural ornamentation, or notable features of these historic resources would be obstructed by the proposed With-Action building on the Development Site.

Although the Proposed Actions would facilitate the construction of a new building just north of the S/NR-listed and LPC-designated Prospect Heights Historic District, this change would not be significant or adverse. The Proposed Development would be built-out to the lot lines and would contain ground-level retail space, expanding the established streetscape and historic commercial corridor of Vanderbilt Avenue, which is currently interrupted by the Development Site's existing setback commercial building and adjacent parking lot. The proposed building's mass would be centered on Atlantic Avenue, with a series of step-downs as the building mass moves towards the midblock of Pacific Street. The building would be setback above the seventh story along Vanderbilt Avenue and the corner with Pacific Street, and the midblock portion of the building fronting Pacific Street would rise to four stories, reflecting the lower heights of the adjacent historic neighborhood.

Additionally, there is already a considerable amount of new construction in the area, including several high-rise buildings detailed below. As such, the construction of the Proposed Development would not be incompatible with existing neighborhood development, and would not significantly alter the visual setting and historic context of the nearby Prospect Heights Historic District or other surrounding historic resources. As the Proposed Actions would not detract from surrounding historic buildings or affect those characteristics that make surrounding buildings eligible for listing on the S/NR or for designation by the LPC, the Proposed Actions would not result in any significant adverse indirect or contextual impacts on historic architectural resources.

As discussed in detail in **Attachment F, "Shadows,"** the detailed shadows analysis determined that the duration and coverage of incremental shadows on the Church of St. Luke and St. Matthew from the Proposed Project would be limited and would not affect portions of the building with sunlight sensitive features. The Proposed Actions would result in new incremental shadows on this historic resource on the

December 21 representative analysis day for a total duration of two hours and four minutes during the late morning to early afternoon hours. While the church contains large stained glass windows on its southern facade, incremental shadows would be limited to the lower portions of the southern facade and would not have the potential to affect any of the church's sunlight-sensitive features. Therefore, the Proposed Actions would not result in significant adverse shadow impacts on the Church of St. Luke and St. Matthew.

III. DEVELOPMENT BACKGROUND

Prior to the arrival of the European colonists, Brooklyn was inhabited by the Canarsie Indians, a largely autonomous tribe of the Leni Lenape. In the 17th century, Dutch settlers established villages in Brooklyn, including Breukelen to the northwest of the Development Site, and Bedford to the northeast. The area that is now Prospect Heights, to the south of the Development Site, was the location of the Revolutionary War Battle of Brooklyn/Long Island in August 1776. In 1834, Brooklyn was incorporated as a city, and in 1839, a standard street grid for the new city was mapped. Concurrently, the Brooklyn & Jamaica Railroad, which connected the study area to the Manhattan ferries, started running along Atlantic Avenue just north of the Development Site. However, the extremely slow-moving railroad did little to stimulate the surrounding area's growth, and the study area remained predominately woodland and farmland until the mid-19th century.

During the course of the 19th century, Brooklyn grew from a collection of small rural villages and farms into the third most populous city in America. In 1866, construction of Prospect Park began to the south of the Development Site. The park, designed by nationally prominent landscape architects Calvert Vaux and Frederick Law Olmsted, opened to the public in 1871, spurring the speculative development of rowhouses in the surrounding areas, including Prospect Heights. By 1880, much of the secondary study area contained small residential buildings on the standard, narrow lots laid out in the 1839 plan. At the time, Clinton Avenue to the north of the Development Site was considered one of the most fashionable residential streets in Brooklyn. Concurrently, most of the buildings along Vanderbilt Avenue contained lower level shops, reflecting the avenue's development as one of the area's most important commercial thoroughfares.

In 1898, Brooklyn was incorporated into the City of New York. By 1903, the rail yards for the Long Island Railroad (LIRR) were established on the block immediately east of the Development Site (fronting Atlantic Avenue, Vanderbilt Avenue, and Pacific Street). The former at-grade rail lines on Atlantic Avenue were moved underground, and the avenue continued to serve as a major traffic artery throughout the 20th century as the only east-west through truck route in Brooklyn. As a result, much of Atlantic Avenue was redeveloped with factories, automotive repair shops, and similar commercial and light industrial establishments over the course of the 20th century.

During the 1960s and 1970s, Prospect Heights, like many other neighborhoods in New York City, experienced an increase in unemployment and crime rates, and a concurrent deterioration of its historic building stock. In response to the disinvestment in the community, the Prospect Heights Neighborhood Corporation was formed in 1980 to restore buildings and provide low- and middle-income housing in the area. The New York City Planning Commission subsequently designated Prospect Heights as a Neighborhood Preservation Area, making it eligible for special housing finance assistance from the New York City Community Preservation Corporation, spurring new investment in the area.

Since the turn of the 21st century, the study area has experienced a significant amount of residential and commercial redevelopment, reflecting larger trends throughout much of western Brooklyn. Immediately west of the Development Site is Pacific Park, a large-scale, mixed-use commercial and residential development project (fronting Atlantic Avenue, Vanderbilt Avenue, and Dean Street). When completed in 2025, the 22-acre site will contain 17 high-rise buildings, several of which will be located over the LIRR train yard (Atlantic Yards) immediately west of the Development Site. In 2016, a 17-story residential tower with ground-floor retail space was completed at 540 Vanderbilt Avenue, just southwest of the Development Site in the southeastern section of Pacific Park. Other examples of recent construction in the study area include four- to five-story residential buildings at 525 Vanderbilt Avenue, 869 Pacific Street, and 879 Pacific Street; a seven-story residential building at 531 Vanderbilt Avenue; a 13-story mixed residential/commercial building at 525 Clinton Avenue; and the recent renovation of the 10-story warehouse at 470 Vanderbilt Avenue into Class A office space. As detailed below in Section V: "The Future without the Proposed Actions," there are also several residential and commercial buildings currently under construction in the 400-foot secondary study area.

IV. EXISTING CONDITIONS

Development Site

The approximately 38,800 square foot (sf) Development Site is comprised of Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71 in the Prospect Heights neighborhood of Brooklyn. As shown in **Figure G-1**, the Development Site has frontage along Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. In a letter dated November 28, 2018, LPC determined that none of the lots that comprise the Development Site contain architectural significance (refer to **Appendix A**).

Secondary Study Area

As shown in **Figure G-1**, there are several designated and eligible historic resources within 400 feet of the Development Site. **Table G-1** provides a list of these resources, photos of which are presented in **Figures G-2** and **G-3**. The following provides a brief description of each of the designated and eligible historic resources identified in the 400-foot historic resources study area.

Table G-1: Historic Resources Located in the 400-Foot Study Area

Map No.[1]	Name	Location	S/NR-Listed	S/NR-Eligible	LPC-Designated	LPC-Eligible
1	Prospect Heights Historic District	Roughly bounded by Pacific Street to the north, Washington Avenue to the east, Sterling Place to the south, and Flatbush Avenue to the west	X		X	
2	Church of St. Luke and St. Matthew	520 Clinton Avenue *(Block 2010, Lot 10)*	X		X	
3	St. Joseph's R.C. Church Complex	834-856 Pacific Street *(Block 1130, Lots 11 & 75)*		X		
4	Telephone Building	547-555 Clinton Avenue *(Block 211, Lot 1)*		X		
5	536-540 Clinton Avenue Buildings	536-540 Clinton Avenue *(Block 2010, Lots 56-58)*		X		

Note: [1] Refer to **Figure G-1**.

Designated Historic Resources

1. Prospect Heights Historic District (S/NR-Listed, LPC-Designated): *Bounded by Pacific Street to the north, Washington Avenue to the east, Sterling Place to the south, and Flatbush Avenue to the west*.

As shown in **Figure G-1**, the northernmost portion of the Prospect Heights Historic District is located in the 400-foot study area. The historic district includes approximately 850 buildings, most of which are single-family row houses and apartment buildings, largely constructed between the 1860s and 1910s. The area also includes some significant institutional buildings, constructed to accommodate the burgeoning residential neighborhood in the late-19th and early-20th centuries. Prospect Heights retains some of Brooklyn's most well-preserved residential streetscapes featuring a variety of architectural styles, including Italianate, Neo-Grec, Queen Anne, Romanesque, and Renaissance Revival styles. Most of the buildings along Vanderbilt Avenue also contain ground-floor retail space, reflecting the avenue's development as one of Prospect Height's most important commercial thoroughfares (refer to **Figure G-2**).

The 16 buildings in the Prospect Heights Historic District located within the 400-foot study area are three- to four-stories tall, and all but one were constructed in the 1870s-80s. Most of the architects of these structures are unknown. 678-680 Dean Street and 552-554, 565, 569-571, 581-587 Vanderbilt Avenue are Italianate buildings with brick facades and brownstone trim with minimal ornament, many of which retain their original wood cornices (refer to **Figure G-2**). 573 Vanderbilt Avenue is a Queen Anne style building with a brick façade, stone trim, and wood cornice. 567, 577, and 579 Vanderbilt Avenue are Neo-Grec style buildings with brick facades, stone trim, and wood cornices designed by John W. Bailey, Thomas F. Houghton, and L.R. Holske, respectively. 575 Vanderbilt Avenue was constructed in 1912-22 in the Colonial Revival style, and features a brick façade, stone trim, iron cornice, and ground-level pilasters and freestanding columns.

2. Church of St. Luke and St. Matthew (S/NR-Listed, LPC-Designated): *520 Clinton Avenue (Block 2010, Lot 10)*

The Church of St. Luke and St. Matthew was built in 1888-91 as St. Luke's Protestant Episcopal Church, and contains a chapel and former Sunday school as well as the main church structure. At the time, Clinton Avenue was one of the most prestigious residential streets in Brooklyn, and the church is among the largest and finest of the ecclesiastical structures built in the City during the 19th century. Local Brooklyn architect John Welch designed the church in the Romanesque Revival style with motifs adopted from the 12th century Romanesque churches of northern Italy. As shown in **Figure G-2**, the front façade of the building, fronting Clinton Street, contains a wide nave with a projecting, tripartite, round-arched entrance porch, a large stained-glass rose window, a corbelled cornice, and octagonal "towerlettes." One of the more unusual features of the church façade is the use of six different building materials, creating a remarkably colorful and textured design (refer to **Figure G-2a**). The adjoining chapel is a two-story, peaked-roof structure anchored by a tall square bell tower with a pyramidal roof. The rear of the church, fronting Vanderbilt Avenue, is a three-story brick structure with minimal ornament and simple round-arched, stained-glass windows.

Resource #1: Prospect Heights Historic District, looking down Vanderbilt Avenue from Dean Street.

Resource #2: Church of St. Luke and St. Matthew at 520 Clinton Avenue.

Resource #1: Prospect Heights Historic District, looking southeast down Vanderbilt Avenue from Pacific Street.

Resource #3: St. Joseph's R.C. Church Complex at 834-856 Pacific Street.

Resource #3: St. Joseph's R.C. Church Complex.

Resource #4: Telephone Building at 547-555 Clinton Avenue.

Resource #5: Buildings at 536-540 Clinton Avenue.

Eligible Historic Resources

According to the *CEQR Technical Manual*, historic resources can be considered significant if they meet the criteria for listing on the S/NR, established by the U.S. Secretary of the Interior, or criteria for local designation set forth in the New York City Landmarks Law. The S/NR criteria address both historic and architectural significance: a property may be associated with significant events or persons, or may be a notable representation of a particular architectural style or the work of an important architect or builder. Similarly, the criteria of the New York City Landmarks Law include historical, architectural, aesthetic, and cultural value. There are three historic resources in the study area that are eligible for listing on the S/NR, detailed below.

3. St. Joseph's R.C. Church Complex (S/NR-eligible): *834-856 Pacific Street/683 Dean Street (Block 1130, Lots 11 & 75)*

St. Joseph's Roman Catholic (R.C.) Church Complex fronts on Pacific and Dean Streets to the south of the Development Site, and contains a church, parish house and rectory, former school, and former convent, as well as a garden and shrine. St. Joseph's parish was founded on the site in 1850, and the 3.5-story, redbrick, former school building on Pacific Street appears to be contemporaneous with the original church structure on the site. The current church building in the eastern portion of the complex was erected in 1912 to the designs of Francis J. Berlenbach. As shown in **Figure G-3**, the light-colored brick church was constructed in the Italian Renaissance Revival style. The main church entrance on Pacific Street contains a projecting, tripartite, round-arched entrance porch, and a large stained-glass window set within a pair of round-arches flanked by round and square pilasters and topped with a large bracketed pediment. As shown in **Figure G-3**, the church features two square bell towers with round-arched openings flanked by pilasters and topped with bracketed pediments, mimicking the center of the church's main façade. The sides and rear of the church contain multiple round-arched, stained-glass windows. The complex's four-story, light-brick, former convent facing Dean Street was converted into the Bishop Thomas V. Daily senior residence in the late 20th century.

4. Telephone Building (S/NR-eligible): *547-555 Clinton Avenue (Block 2011, Lot 1)*

The building at 547-555 Clinton Avenue was constructed for the New York and New Jersey Telephone Company (now Verizon) in 1902-05 as a transfer station, equipment location, and office building. It was the telephone company's second largest building, located at the end of Clinton Avenue, the fashionable residential street at the time with a high demand for private telephones. The Beaux-Arts style structure was built to the designs of architect William B. Claflin, the company's in-house architect. As shown in **Figure G-3**, the redbrick building is six stories tall and five bays wide, and has a limestone base. The windows are flanked by five-story-tall brick pilasters topped with a limestone belt course below the sixth story. The building features a large, ornate copper cornice held up by pairs of corbels (refer to **Figure G-3**). The building is still owned by Verizon, and is currently used as a data center for the company.

5. 538-542 Clinton Avenue Buildings (S/NR-eligible): *536-540 Clinton Avenue (Block 2010, Lots 56-58)*

The four rowhouses at 536-542 Clinton Avenue were built in 1872 to the design of architect Alfred Smith Barnes, who lived in a mansion across the street (the Barnes residence and the fourth rowhouse at 536 Clinton Avenue no longer exist). As shown in **Figure G-3**, the three remaining 3.5-story residences were built in the French Neo-Grec style with Beton Coignet cast stone and Second Empire

mansard roofs. Each rowhouse has two-story, three-sided bays and two asymmetrical top floor dormers. All doors and windows on the buildings are framed with substantial lintels and decorative ornament, likely created with molds (refer to **Figure G-3**). The cast-iron railings on the rowhouses' stoops and cast-iron fencing around the front patios are original, and the buildings also formerly had cast-iron cresting on the roofs which were removed in the 20th century.

V. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

Under No-Action conditions, the status of historic resources could change. S/NR-eligible resources could be listed on the S/NR, and properties found eligible for consideration for designation as NYCLs could be calendared and/or designated. Changes to the historic resources identified above or to their settings could also occur irrespective of the Proposed Actions. Future projects could affect the settings of architectural resources. It is possible that some architectural resources in the 400-foot study area could deteriorate, while others could be restored. In addition, future projects could accidentally damage architectural resources through adjacent construction.

Properties that are designated NYCLs are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition of those resources can occur. All properties within LPC-designated historic districts also require LPC review and approval prior to new construction, addition, enlargement, or demolition. The owners of a property may work with LPC to modify their plans to make them appropriate. Properties that have been calendared for consideration for designation as NYCLs are also afforded a measure of protection insofar as, due to their calendared status, permits may not be issued by DOB for any structural alteration to the buildings for any work requiring a building permit, without at least 40 days prior notice being given to LPC. During the 40-day period, LPC has the opportunity to consider the case and, if it so chooses, schedule a hearing and move forward with designation.

The New York City Building Code provides some measures of protection for all properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported. Additional protective measures apply to designated NYCLs and S/NR-listed historic buildings located within 90 linear feet of a proposed construction site. For these structures, DOB's TPPN #10/88 applies. TPPN #10/88 supplements the standard building protections afforded by the Building Code by requiring, among other things, a monitoring program to reduce the likelihood of construction damage to adjacent NYCL-designated or S/NR-listed historic resources (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed.

Additionally, historic resources that are listed on the S/NR or that have been found eligible for listing are given a measure of protection from the effects of federally-sponsored, or federally-assisted projects under Section 106 of the National Historic Preservation Act, and are similarly protected against impacts resulting from state-sponsored or state-assisted projects under the New York State 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. Private property owners using private funds can, however, alter or demolish their S/NR-listed or S/NR-eligible properties without such a review process.

Anticipated Developments in the No-Action Condition

As detailed in **Attachment A, "Project Description,"** in the 2023 future without the Proposed Actions, none of the Development Site lots are anticipated to be redeveloped. Under No-Action conditions, it is anticipated that the three low-rise residential and commercial buildings would remain on the Development Site, as under existing conditions.

In the future with the Proposed Actions, there are three known projects that are expected to be completed within the 400-foot study area. As detailed in **Attachment C, "Land Use, Zoning, & Public Policy,"** these projects include: a four-story residential building at 860 Pacific Street; a five-story residential building at 873 Pacific Street; a six-story residential building at 834 Pacific Street; and a 29-story mixed-use residential and commercial building at 809 Atlantic Avenue. The construction of these No-Action developments will alter the context and setting of surrounding designated and eligible historic architectural resources in the future without the Proposed Actions.

VI. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

According to the *CEQR Technical Manual*, generally, if a project would affect those characteristics that make a resource eligible for NYCL designation or S/NR listing, this could be a significant adverse impact. As described above, the historic architectural resources within the 400-foot study area are significant for both their architectural quality and for their historic value as part of the City's development. This section assesses the Proposed Actions' potential to result in significant adverse impacts on identified architectural resources in the study area, including impacts resulting from the construction of the Proposed Development, project-generated shadows, or other indirect effects on existing historic resources in the study area.

The Proposed Actions were assessed in accordance with guidance established in the *CEQR Technical Manual* (Chapter 9, Part 420), to determined (a) whether there would be a physical change to any designated or listed property as a result of the Proposed Actions; (b) whether there would be a physical change to the setting of any designated or listed resource, such as context or visual prominence, as a result of the Proposed Actions; and (c) if so, whether the change is likely to diminish the qualities of the resource that make it important. Whereas this attachment focuses specifically on the Proposed Actions' effects on the visual context of historic resources, an assessment of the Proposed Action's effect on the urban design and visual character of the study area in general is provided separately in **Attachment H, "Urban Design & Visual Resources."**

As discussed in **Attachment A, "Project Description,"** the Proposed Actions include zoning map and text amendments that would facilitate the demolition of the existing low-rise buildings on the Development Site, and the construction of an 18-story (195-foot-tall) mixed-use residential and commercial building on the site. The proposed building would include approximately 316 residential dwelling units, approximately 55,715 gross square feet (gsf) of retail space, approximately 7,800 gsf of community facility space, and 90 accessory parking spaces. As detailed in **Attachment A**, the proposed building's mass would be centered on Atlantic Avenue, with a series of step-downs as the building mass moves towards the midblock of Pacific Street. The midblock portion of the building fronting Pacific Street would rise to four stories, reflecting the lower heights of the adjacent neighborhood.

Direct (Physical) Impacts

Historic resources can be directly affected by physical destruction, demolition, damage, alteration, or neglect of all or part of a historic resource. For example, alterations, such as the addition of a new wing to a historic building or replacement of the resource's entrance, could result in significant adverse impacts, depending on the design. Direct effects also include changes to an architectural resource that cause it to become a different visual entity, such as a new location, design, materials, or architectural features. As shown in **Figure G-1**, there are no historic architectural resources on the Development Site. Therefore, the Proposed Actions would not result in direct impacts to historic architectural resources.

Indirect (Contextual) Impacts

Contextual impacts may occur to architectural resources under certain conditions. According to the *CEQR Technical Manual*, possible impacts to architectural resources may include isolation of the property from, or alteration of, its setting or visual relationships with the streetscape. This includes changes to the resource's visual prominence so that it no longer conforms to the streetscape in terms of height, footprint, or setback; is no longer part of an open setting; or can no longer be seen as part of a significant view corridor. Significant indirect impacts can occur if a proposed action would cause a change in the quality of a property that qualifies it for listing on the S/NR or for designation as a NYCL.

The Proposed Actions would not result in significant adverse indirect impacts on existing historic resources in the study area. No incompatible, visual, audible, or atmospheric elements would be introduced by the Proposed Actions to any historic architectural resource's setting under With-Action conditions. The Proposed Development would not alter the relationship of any identified historic architectural resource to the streetscape, since all streets in the study area would remain open and each resource's relationship with the street would remain unchanged in the future with the Proposed Actions. As detailed in **Attachment A, "Project Description,"** the Proposed Actions would facilitate the demolition of the existing low-rise buildings on the Development Site, and the construction of an 18-story mixed-use residential and commercial building on the site. As such, the existing views of the bell towers of St. Joseph's R.C. Church Complex (Resource #3 in **Figure G-1**) from Atlantic and Vanderbilt Avenues, the existing views of the Telephone Building (Resource #4) from Vanderbilt Avenue and Pacific Street, and the existing views of the Church of St. Luke and St. Matthew's bell tower (Resource #2) from Pacific Street will be obstructed. However, none of these eliminated viewsheds are significant, as more proximate views of these historic buildings exist from adjacent public streets and sidewalks. Additionally, all significant elements of these buildings would remain visible as no primary façades, significant architectural ornamentation, or notable features of these historic resources would be obstructed by the new building on the Development Site.

Although the Proposed Actions would facilitate the construction of a new building just north of the S/NR-listed and LPC-designated Prospect Heights Historic District, this change would not be significant or adverse. The proposed building would be visible when looking north from points along Vanderbilt Avenue in the historic district. The Proposed Development would be built-out to the lot lines and would contain ground-level retail space, expanding the established streetscape and historic commercial corridor of Vanderbilt Avenue which is currently interrupted by the Development Site's existing setback commercial building and adjacent parking lot. As shown in **Figure A-8** in **Attachment A, "Project Description,"** the proposed building's mass would be centered on Atlantic Avenue, with a series of step-downs as the building mass moves towards the midblock of Pacific Street. The building would be setback above the seventh story along Vanderbilt Avenue and the corner with Pacific Street, and the midblock portion of the

building fronting Pacific Street would rise to four stories, reflecting the lower heights of the adjacent historic neighborhood. The proposed building would not detract from surrounding historic buildings or diminish the qualities that make the surrounding designated and eligible resources historically and/or architecturally important.

Additionally, as discussed above, there is already a considerable amount of new development in the area, including a number of high-rise buildings, such as the 17-story building at 540 Vanderbilt Avenue to the southwest of the Development Site, the 13-story building at 525 Clinton Avenue, and the 29-story building under construction at 809 Atlantic Avenue. As such, the construction of the Proposed Development would not be incompatible with existing neighborhood development, and would not significantly alter the visual setting and historic context of the adjacent Prospect Heights Historic District or other surrounding historic resources. As the Proposed Actions would not affect those characteristics that make surrounding buildings eligible for listing on the S/NR or for designation by the LPC, the Proposed Actions would not result in any significant adverse indirect or contextual impacts on historic architectural resources.

Construction-Related Impacts

Any new construction taking place adjacent to historic districts has the potential to cause damage to contributing buildings from ground-borne construction vibrations. As noted above, the New York City Building Code provides some measure of protection for all properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported. Additional protective measures apply to NYCL-designated and S/NR-listed historic resources located within 90 linear feet of a proposed construction site. For these structures, DOB's TPPN #10/88 applies. TPPN #10/88 supplements the standard building protections afforded by the Building Code by requiring, among other things, a monitoring program to reduce the likelihood of construction damage to adjacent LPC-designated or S/NR-listed resources (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed.

As shown in **Figure G-1**, the Development Site is located within 90-feet of the LPC-designated and S/NR-listed Prospect Heights Historic District (Resource #1) and the S/NR-eligible St. Joseph's R.C. Church Complex (Resource #3). Therefore, the Proposed Development would include a Construction Protection Plan in order to protect adjacent historic resources from potential construction damage. The Construction Protection Plan would be developed in consultation with LPC and/or SHPO and would take into account the guidance provided in the *CEQR Technical Manual*, Chapter 9, Section 523, "Construction Protection Plan" and requirements laid out in TPPN #10/88. With the implementation of the construction protection measures outlined in the Construction Protection Plan for the Development Site, no construction-related impacts on historic resources would be anticipated as a result of the Proposed Actions.

Shadows Impacts

As discussed in detail in **Attachment F, "Shadows,"** the detailed shadows analysis determined that the duration and coverage of incremental shadows on the Church of St. Luke and St. Matthew from the Proposed Project would be limited and would not affect portions of the building with sunlight sensitive features. The Proposed Actions would result in new incremental shadows on this historic resource on the December 21 representative analysis day for a total duration of two hours and four minutes during the late morning to early afternoon hours. While the church contains large stained glass windows on its southern facade, incremental shadows would be limited to the lower portions of the southern facade and would not have the potential to affect any of the church's sunlight-sensitive features. Therefore, the

Proposed Actions would not result in significant adverse shadow impacts on the Church of St. Luke and St. Matthew.

I. INTRODUCTION

An open space assessment may be necessary if a proposed action could potentially have a direct or indirect effect on open space resources in the project area. A direct effect would "physically change, diminish, or eliminate an open space or reduce its utilization or aesthetic value." An indirect effect may occur when the population generated by a proposed development would be sufficient to noticeably diminish the ability of an area's open space to serve the existing or future population. According to *City Environmental Quality Review* (CEQR) *Technical Manual* guidance, as the Rezoning Area is located in an area considered well-served by open space, a project that would introduce fewer than 350 residents or 750 employees, or a similar number of other users, is typically not considered to have indirect effects on open space.

Although the Proposed Actions would not have a direct effect on existing open space resources, the Applicant-proposed development facilitated by the Proposed Actions (Scenario 1) is expected to result in an incremental increase of 306 dwelling units (DUs) over the 2023 No-Action condition. This would result in a net increase of 692 residents[1], which exceeds the *CEQR Technical Manual* threshold for a detailed indirect open space analysis. A quantitative assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area's residential population.

The commercial development under Scenario 2 would result in a net increase in approximately 811 employees[2], which exceeds the *CEQR Technical Manual* Threshold for a detailed indirect open space analysis. A quantitative assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area's worker population.

II. PRINCIPAL CONCLUSIONS

According to the *CEQR Technical Manual*, a proposed action may result in a significant adverse impact on open space resources if (a) there would be direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing users; or (b) it would reduce the open space ratio and consequently overburden existing facilities or further exacerbate deficiency in open space. The *CEQR Technical Manual* also states that "if the area exhibits a low open space ratio indicating a shortfall of open space, even a small decrease in the ratio as a result of the action may cause an adverse effect." A five percent or greater decrease in the open space ratio is considered to be "substantial", and a decrease of less than one percent is generally considered to be insignificant unless open space resources are extremely limited. The open space study area analyzed in this attachment is located in an area considered well-served by open space.

[1] Based on the average household size of 2.27 for for the 1/2 –mile study area.
[2] Based on 3 employees/1,000 sf of retail and community facility; 4 employees/1,000 sf of office

I. INTRODUCTION

This attachment assesses the potential effects of the Proposed Actions and associated reasonable worst-case development scenario (RWCDS) on urban design and visual resources. As described in **Attachment A, "Project Description,"** the Applicant is seeking several discretionary zoning actions in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (refer to **Figure H-1**). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to a C6-3X district;(ii) a zoning text amendment to ZR Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall. As shown in **Figure H-1**, the proposed rezoning area would encompass the entirety of Lots 9, 68, 69, 70, 71 and a portion of Lots 1 and 10 on Brooklyn Block 1122.

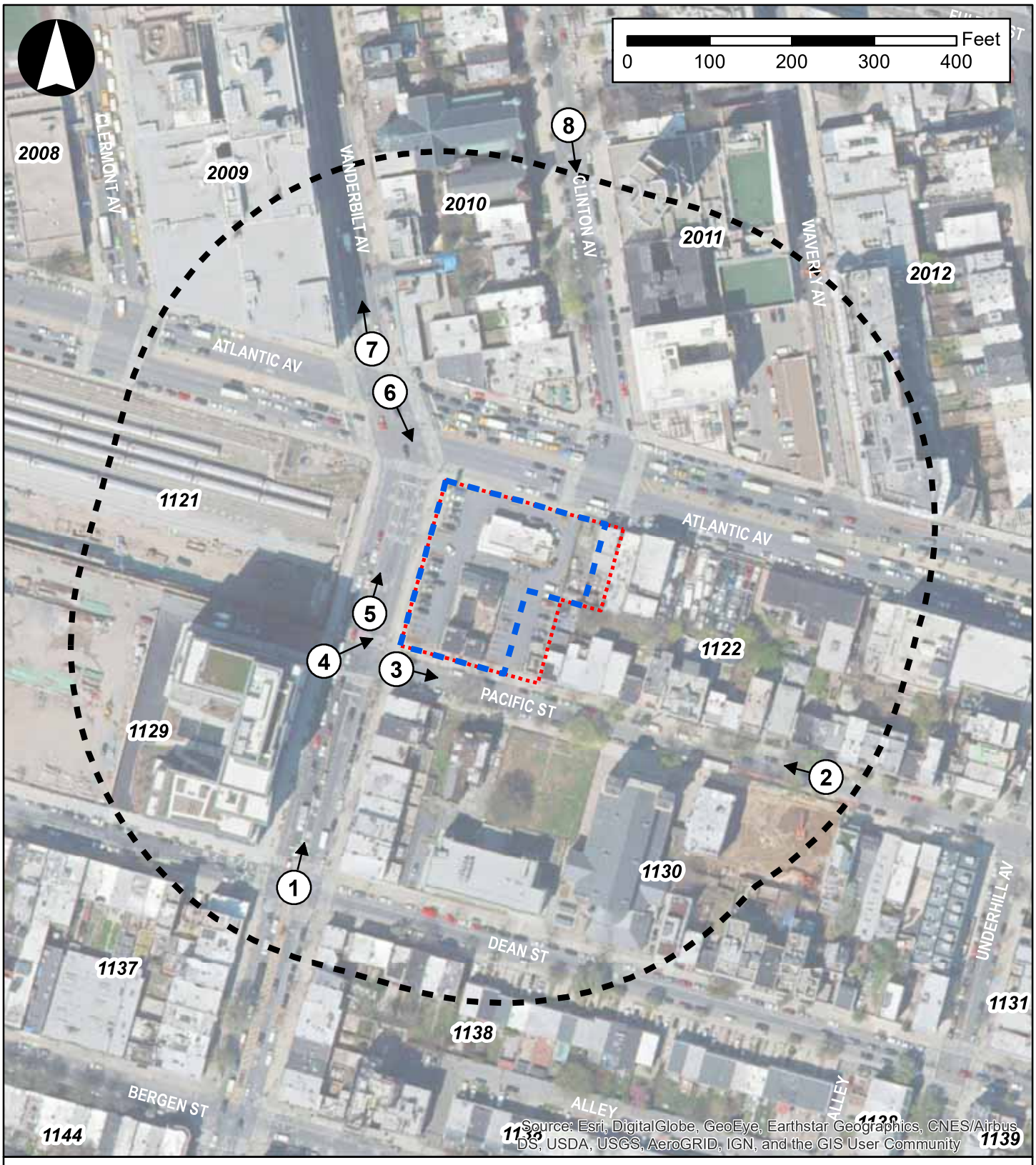
The Proposed Actions would facilitate the construction of a new 18-story (195-foot tall; 205 feet to the bulkhead) mixed-use building on the Development Site, with approximately 312,917 gsf of residential uses (approximately 316 dwelling units [DUs], of which approximately 95 would be affordable); approximately 55,715 gsf of commercial retail uses; approximately 7,800 gsf of community facility uses; and 90 accessory parking spaces. The Proposed Development is expected to be complete and fully occupied by 2023. Absent approval of the Proposed Actions, no changes would occur on the Development Site.

Per the *City Environmental Quality Review* (CEQR) *Technical Manual*, urban design is defined as the total of components – including streets, buildings, open spaces, wind, natural resources, and visual resources – that may affect a pedestrian's experience of public space. A visual resource is defined as the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources. In an urban design and visual resources assessment pursuant to CEQR, one considers whether and how a project or action may change the visual experience of a pedestrian, focusing on the components of the project or action that may have the potential to significantly and adversely affect the arrangement, appearance, and functionality of the built and natural environment. A detailed analysis of the potential impacts of the Proposed Actions and associated reasonable worst-case development scenario (RWCDS) on urban design and visual resources was prepared in conformance to the *CEQR Technical Manual*. This analysis describes existing conditions and compares conditions in the future without and with the Proposed Actions to determine potential urban design and visual resource impacts. The urban design and visual resources analysis is based on field visits, photography, and computer imaging.

II. PRINCIPAL CONCLUSIONS

No significant adverse impacts to urban design or visual resources would occur as a result of the Proposed Actions. The building facilitated by the Proposed Actions on the Development Site would not be incompatible with the existing built character of the surrounding study area. The Proposed Development

Figure H-1
Aerial Map & Photo Key



Legend

Rezoning Area | Development Site | 400-Foot Study Area | 1 → Photo Location (see Figure H-2)

would contain ground-level retail space, expanding the established streetscape and historic commercial corridor of Vanderbilt Avenue, which is currently interrupted by the Development Site's existing setback commercial drive-through and adjacent parking lot. The proposed building's mass would be concentrated on Atlantic Avenue, a wide street (120 feet wide) lined with existing and planned high-rise buildings directly to the west, and would contain a series of step-downs as the building mass moves towards the midblock of Pacific Street. The proposed building would be setback above the seventh story along Vanderbilt Avenue and the corner with Pacific Street, and the midblock portion of the building fronting Pacific Street would rise to four stories, reflecting the lower heights of the adjacent context.

The additional height and density on the Development Site in the future with the Proposed Actions would be in keeping with the existing and emerging built environment of the study area. As discussed below, there is already a considerable amount of new development in the area to the west of the Development Site, including a number of high-rise buildings, such as the 17-story residential/commercial building at 550 Vanderbilt Avenue to the southwest of the Development Site, the 13-story residential/commercial building at 525 Clinton Avenue, and the 29-story residential/commercial building planned at 809 Atlantic Avenue. In addition, the area to the west of the Development Site includes the Atlantic Yards railyard, which is currently being developed as a large-scale residential and commercial project (known as Pacific Park), which has a target completion date of 2035. These new residential buildings would be approximately 25 to 27 stories tall, and would also include commercial uses and open spaces. Two of the buildings (550 Vanderbilt Avenue and 535 Carlton Avenue) have been recently completed; the remaining buildings are currently in the beginning stages of construction and are not expected to be complete by the Proposed Actions' analysis year of 2023. The proposed building on the Development Site would be in keeping with these trends.

Additionally, the proposed With-Action building would not obstruct significant view corridors in the surrounding area. As detailed in **Attachment G, "Historic & Cultural Resources,"** although some existing views of St. Joseph's R.C. Church Complex, the Telephone Building, and the Church of St. Luke and St. Matthew would be obstructed by the Proposed Development, none of these eliminated viewsheds are significant, as more proximate views of these visual resources exist from adjacent public streets and sidewalks. Additionally, there is already a considerable amount of new construction in the study area, including the high-rise buildings listed above. As such, the construction of the Proposed Development would not be incompatible with existing neighborhood development, and would not significantly alter the visual setting and historic context of surrounding visual landmarks.

As such, the proposed additional height and bulk on the Development Site would not result in any significant adverse impacts to urban design and visual resources, but rather, is expected to enhance the pedestrian experience in the vicinity of the Development Site with the introduction of ground-floor retail and community facility uses, extending the commercial corridor of Vanderbilt Avenue north to Atlantic Avenue, as well as the planting of street trees along the Pacific Street, Vanderbilt Avenue, and Atlantic Avenue frontages of the Development Site. Further, the proposed text amendment to Section 35-662 would allow provision of wider sidewalks along Atlantic Avenue and Pacific Street, which would enhance the pedestrian experience along the Development Site's frontages.

III. METHODOLOGY

In general, an assessment of urban design is needed when a project may have effects on one or more of the elements that contribute to a pedestrian's experience of public space. These elements, the totality of which defines the concept of urban design, are described below:

- *Streets*. For many neighborhoods, streets are the primary component of public space. The arrangement and orientation of streets define the location and flow of activity in an area, set street views, and create the blocks on which buildings and open spaces are organized. The apportionment of streetscape between cars, bicycles, transit, and sidewalk is critical to making a successful streetscape, as is the careful design of street furniture, grade, materials used, and permanent fixtures, including plantings, streetlights, fire hydrants, curb cuts, and newsstands.
- *Buildings.* Buildings support streets. A building's streetwalls form the most common backdrop in the City for public space. A building's size, setbacks, lot coverage, placement on the zoning lot and block, the orientation of active uses, and pedestrian and vehicular entrances all play major roles in the vitality of the streetscape. The public realm also extends to building facades and rooftops, offering more opportunity to enrich the visual character of an area.
- *Visual Resources*. A visual resource is the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources.
- *Open Space*. For the purposes of urban design, open space includes public and private areas, such as parks, yards, cemeteries, parking lots, and privately owned public spaces.
- *Natural Features*. Natural features include vegetation and geologic, topographic, and aquatic features. Rock out-croppings, street slopes, or varied ground elevation, beaches, or wetlands may help define the overall visual character of an area.
- *Wind*. Channelized wind pressure from between tall buildings and downwashed wind pressure from parallel tall buildings may cause windows that jeopardize pedestrian safety.

The Proposed Actions would facilitate development on the Development Site that would differ from existing zoning envelopes, and would result in physical changes beyond the bulk and form currently permitted as-of-right. This has the potential to change pedestrians' experience of public space. Therefore, it is appropriate to assess the Proposed Actions' potential impacts on urban design and visual resources.

A pedestrian wind condition analysis is not warranted for the Proposed Actions pursuant to *CEQR Technical Manual* methodology. As stated in the *CEQR Technical Manual*, construction of large buildings at locations that experience high wind conditions may result in an exacerbation of wind conditions due to "channelization" or "downwash" effects that may affect pedestrian safety. The need for a wind analysis is based on a number of factors, including whether the location is exposed to high wind conditions, such as along west and northwest-facing waterfronts, as well as the size and orientation of the buildings that are proposed to be constructed. As shown in **Figure H-1**, the Development Site is not located along the

waterfront, and therefore, is not exposed to high wind conditions. As such, a pedestrian wind condition analysis is not warranted for the Proposed Actions pursuant to *CEQR Technical Manual* methodology.

Study Areas

The study areas for the assessment of urban design and visual resources correspond to the areas where the Proposed Actions may influence the built environment, and is consistent with that used for the land use analysis. For visual resources, the view corridors within the study area from which such resources are publicly viewable have been identified. The urban design analysis considers both a primary study area, which is generally coterminous with the boundaries of the Development Site, and a secondary study area, which extends a 400 feet from the Development Site's boundary (refer to **Figure H-1**).

IV. EXISTING CONDITIONS

The following section discusses existing urban design components in the primary and secondary study areas. The assessment focuses on streets, buildings, open space, natural resources, and visual resources; a pedestrian wind condition analysis is not warranted, as discussed above. The visual resources assessment considers important views of landmark structures and other distinct buildings and resources within, or viewable from, the primary study area, that may be obstructed due to development facilitated by the Proposed Actions. Two figures are referenced throughout the existing conditions discussion below: **Figure H-3** shows the existing density in floor area ratio (FAR) for the primary and secondary study areas, and **Figure H-4** shows the existing building heights in the two study areas.

Primary Study Area (Development Site)

The approximately 38,800 sf Applicant-owned Development Site at 840 Atlantic Avenue (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) is an irregularly-shaped lot with frontage along Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south (refer to **Figure H-1**). Lot 1 of the Development Site contains a fast food drive-through with an adjacent parking lot on Atlantic and Vanderbilt Avenues (see **Figure H-2**). Lot 9, fronting Atlantic Avenue, is a vacant lot utilized as open storage. Lot 10 contains with a three-story residential building with ground floor retail, fronting Atlantic Avenue. Lot 68, fronting Pacific Street, is vacant and currently utilized as open storage. All of these lots have FARs below 1.0. Additionally, Lots 69 and 70 of the Development Site, fronting Pacific Street, each contain a three-story residential building with an FAR of 1.2, flanked by vehicular entrances to the fast food establishment parking lot (see **Figure H-2**). The existing widths of the sidewalks adjacent to the Development Site are 12 feet on Atlantic Avenue, 21 feet on Vanderbilt Avenue, and 18 feet on Pacific Street. There are no streets, natural resources, open space resources, or significant visual resources on the Development Site.

Secondary Study Area

Streets & Streetscape

As shown in **Figure H-1**, two separate standard street grids converge at Atlantic Avenue, creating a somewhat irregular street grid in the 400-foot area surrounding the Development Site. Atlantic Avenue is the primary thoroughfare in the area. It is 120-feet wide with multiple lanes of both eastbound and

1. View north on Vanderbilt Avenue from Dean Street.

2. View west from mid-block on Pacific Street between Vanderbilt and Underhill Avenues.

3. View east on Pacific Street from Vanderbilt Avenue, with the Development Site to the far left.

4. View northeast of the Development Site from Pacific Street and Vanderbilt Avenue.

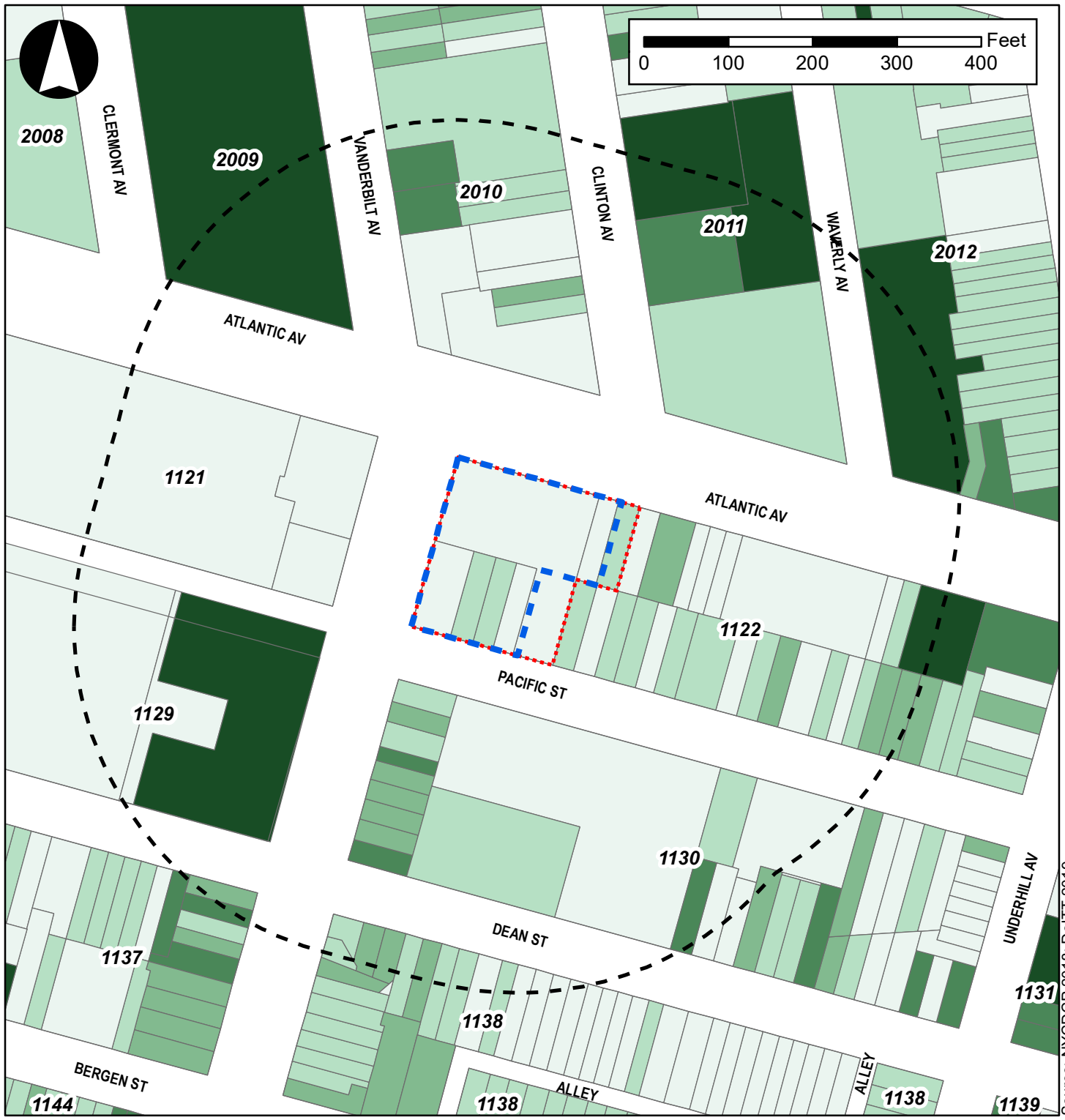
5. View north on Vanderbilt Avenue from Pacific Street, with the Development Site to the far right.

6. View southeast towards the Development Site at the intersection of Vanderbilt and Atlantic Avenues.

7. View north on Vanderbilt Avenue from Atlantic Avenue.

8. View south on Clinton Avenue mid-block between Atlantic Avenue and Fulton Street.

Figure H-3
Existing Building Densities



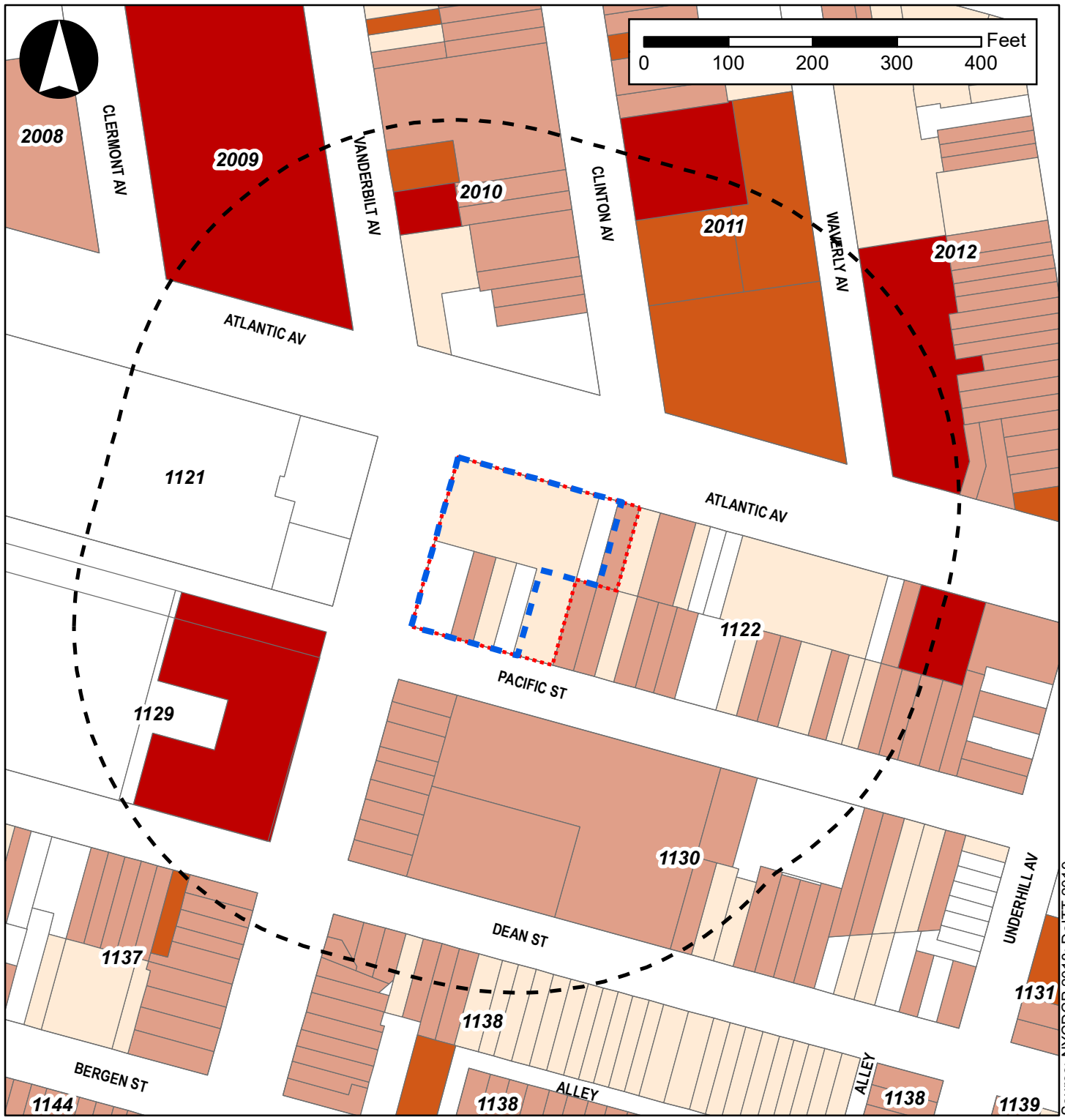
Legend

- Rezoning Area
- Development Site
- 400-Foot Radius

Built FAR

- Up to 1.0 FAR
- 1.1 - 2.0 FAR
- 2.1 - 3.0 FAR
- 3.1 - 4.0 FAR
- 4.1+ FAR

Figure H-4
Existing Building Heights



Legend

- Rezoning Area
- Development Site
- 400-Foot Radius

Number of Floors

- Vacant Lot
- Up to 2 Floors
- 3 - 4 Floors
- 5 - 6 Floors
- 7+ Floors

westbound vehicular traffic, separated by a raised concrete median. It is also a designated through truck route in Brooklyn.

All of the other streets in the secondary study area largely accommodate local traffic. Vanderbilt Avenue is the second-widest road in the study area, with lanes of both northbound and southbound vehicular traffic. North of Atlantic Avenue, Vanderbilt Avenue is 80 feet wide with bike lanes on both sides of the street and no parallel parking. To the south of Atlantic Avenue, Vanderbilt Avenue expands to 100 feet, and contains a bike lane on the western side of the street and parallel parking on the eastern side (see **Figure H-2**).

To the north of Atlantic Avenue are Clinton and Waverly Avenues (refer to **Figure H-1**). Clinton Avenue is 80 feet wide, with both northbound and southbound vehicular lanes flanked by parallel parking lanes, and a speed bump near the northern boundary of the secondary study area. Waverly Avenue is 55 feet wide, with one lane of southbound vehicular traffic, and parallel parking on the western side of the street. To the south of Atlantic Avenue are Pacific and Dean Streets, which are both 70 feet wide (see **Figure H-1**). Pacific Street accommodates both eastbound and westbound vehicular traffic, flanked by parallel parking on both sides of the road. Dean Street contains one eastbound vehicular lane, one bike lane, and parallel parking on both sides of the street.

All roads in the secondary study area are lined with sidewalks, which accommodate traffic signs, streetlights, fire hydrants, and some street furniture, including mailboxes, bike racks, and garbage cans. Street trees are predominately located adjacent to residential and institutional buildings in the secondary study area, while curb cuts are largely located adjacent to commercial, industrial/manufacturing, and transportation/utility properties. There is a bus stop for the B45 bus along Atlantic Avenue and for the B69 bus along Vanderbilt Avenue. There are also a number of construction sites in the secondary study area with sidewalk scaffolding and concrete traffic barriers. These No-Action development sites are discussed further in Section V: "The Future without the Proposed Actions," below.

Buildings

The secondary study area is an urban environment with a variety of different building heights, bulks, and styles resulting in diverse streetscapes throughout the area. As detailed in **Attachment C, "Land Use, Zoning, & Public Policy,"** land uses within 400-feet of the Development Site consist of a mix of residential, commercial, transportation/utility, and institutional uses. Most residential and mixed residential/ commercial buildings in the study area are built out to the lot lines without front or side yards, creating rows of continuous streetscapes along sections of Vanderbilt, Clinton, and Waverly Avenues and portions of Pacific and Dean Streets. In contrast, transportation/utility uses and some commercial properties in the area have open storage, vehicle parking, and loading areas, including the Development Site detailed above; the Pacific Park site immediately across from the Development Site on Lot 1121; the A Class Auto Sales at 878 Atlantic Avenue; and the southeastern portion of the Verizon property on Block 2011.

As shown in **Figures H-3** and **H-4**, the blocks north of Atlantic Avenue and west of Vanderbilt Avenue in the secondary study area are generally taller and denser than those in the southeastern section of the study area. Some of the larger buildings north of Atlantic Avenue include 487 Clermont Avenue on Block 2009, a 10-story commercial office building with an FAR of 8.67; 525 Clinton Avenue, a 13-story mixed residential/commercial building (4.34 FAR) on Block 2011; 510 Waverly Avenue, a six-story school (4.22 FAR) on Block 2011; and 555 Waverly Avenue on Block 2012, an eight-story mixed residential/commercial building with an FAR of 5.84. The largest existing building to the south of Atlantic Avenue is 550 Vanderbilt

Avenue (Block 1129), which is part of the Pacific Park development. The mixed residential/commercial building to the southwest of the Development Site is 17 stories tall with an FAR of 10.1.

Open Space & Natural Resources

The topography of the secondary study area is generally flat. There are no open space resources within 400-feet of the Development Site. Additionally, other than the street trees discussed above and an open lawn area in the St. Joseph R.C. Church Complex just south of the Development Site, there are no natural resources in the study area.

Visual Resources

As noted above and detailed in **Attachment G, "Historic & Cultural Resources,"** several significant historic architectural resources within 400 feet of the Development Site are important visual resources within the secondary study area. The northern section of the Landmarks Preservation Commission (LPC)-designated and State/National Registers of Historic Places (S/NR)-listed Prospect Heights Historic District and the southern portion of the LPC-designated and S/NR-listed Church of St. Luke and St. Matthew at 520 Clinton Avenue are located within the 400-foot secondary study area. Additionally, the S/NR-eligible St. Joseph's R.C. Church Complex at 834-856 Pacific Street; the S/NR-eligible Telephone Building at 547-555 Clinton Avenue; and the S/NR-eligible 536-540 Clinton Avenue Buildings are also located within the secondary study area (refer to **Figure G-1** in **Attachment G**).

V. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

In the future without the Proposed Actions, it is anticipated that current land use trends and general development patterns in the primary and secondary study areas would continue. No streetscape changes or improvements are expected to be completed within the secondary study area in the 2023 future without the Proposed Actions.

Primary Study Area (Project Area)

As detailed in **Attachment A, "Project Description,"** in the 2023 future without the Proposed Actions, the primary study area's R6B and M1-1 zoning designations would remain in place. The maximum allowable FAR in the M1-1 district would remain at 1.0 (or up to 2.4 for allowed community facility uses). Residential uses are not permitted in M1-1 districts. The maximum allowable FAR in the R6B district would remain 2.0 for residential and community facility uses. Under the No-Action scenario, none of the lots within the proposed rezoning area are anticipated to be redeveloped. It is anticipated that the McDonald's and two existing residential buildings would remain on the Development Site in the future without the Proposed Actions, as under existing conditions.

Secondary Study Area

In the future with the Proposed Actions, there are three known projects that are expected to be completed within the 400-foot study area. As detailed in **Attachment C, "Land Use, Zoning, & Public Policy,"** these projects include: a four-story residential building at 860 Pacific Street; a five-story residential building at 873 Pacific Street; a six-story residential building at 834 Pacific Street; and a 29-story mixed-use residential and commercial building at 809 Atlantic Avenue. The construction of these

No-Action developments will alter the context and setting of surrounding designated and eligible historic architectural resources in the future without the Proposed Actions. The construction of these projects would result in additional street trees within the study area.

No changes to streets, open space, natural resources, or visual resources in the secondary study area are expected to occur in the 2023 future without the Proposed Actions.

VI. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

Primary Study Area (Project Area)

Under the With-Action RWCDS, the Applicant-owned Development Site would be redeveloped with an 18-story (195-foot tall; 205 feet to the bulkhead), approximately 376,432 gsf mixed-use building. The Proposed Actions would result in a net increment of 306 DUs, 50,922 gsf of commercial retail uses, and 7,800 gsf of community facility uses. The residential lobby would be on Vanderbilt Avenue, entrances to the commercial uses would be located on Atlantic and Vanderbilt Avenues, and the entrance to the community facility use would be along Pacific Street.

The proposed With-Action building on the Development Site would be constructed on an existing block and would not entail any changes to topography, street pattern or hierarchy, block shapes, open space, or natural features. As detailed in **Attachment A, "Project Description,"** in the 2023 future with the Proposed Actions, the proposed zoning map amendment and zoning text amendments would be implemented in the proposed rezoning area. For residential uses, C6-3X districts follow Quality Housing height and setback regulations for R9X districts, which allow, in Mandatory Inclusionary Housing areas, a minimum base height of 105 feet and a maximum base height of 145 feet, above which a 15-foot setback is required along narrow streets, and a 10-foot setback is required along wide streets. Above the required setback, buildings in C6-3X districts mapped as MIH areas may reach a maximum building height of 195 feet (along a narrow street) or 205 feet (along a wide street) if a Quality Ground Floor is provided. The maximum number of stories permitted is 19 along a narrow street, and 20 along a wide street. R6B height and setback regulations allow a maximum base height of 40 feet, above which a 15-foot setback must be provided along Pacific Street (a narrow street). Buildings in R6B districts may rise to a maximum height of 55 feet and a maximum of five stories if a Quality Ground Floor is provided.

On Vanderbilt Avenue, the Proposed Development's street wall will rise to a base height of approximately 113 feet, above which a 10-foot setback will be provided. On Pacific Street, the street wall will rise to a base height of approximately 82 feet, above which a 15-foot setback will be provided. The Proposed Development's mass will be concentrated on Atlantic Avenue, with a series of step-downs as the building mass moves toward Pacific Street. At its lowest height, a portion of the Proposed Development will rise to only four stories (approximately 50 feet in height), in compliance with the R6B district covering that portion of the Development Site, and respecting the lower-density townhouses on the midblock of Pacific Street. As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area, with mixed-use building with an overall blended FAR of 8.83.

As mentioned above, the existing widths of the sidewalks adjacent to the Development Site are 12 feet on Atlantic Avenue, 21 feet on Vanderbilt Avenue, and 18 feet on Pacific Street. The 12-foot sidewalk

width on Atlantic Avenue is not ideal, considering Atlantic Avenue is 120 feet wide, and the Proposed Development will have 18 stories. Therefore, the Applicant proposes to create ZR 35-662 to allow the street wall to be set back from the street line by up to 8 feet for 70% of the aggregate width of the street walls, for developments in C6-3X zoning districts in Community District 8 in the Borough of Brooklyn. Allowing an 8-foot street wall setbacks on all street frontages of the Development Site will allow for a 20-foot sidewalk on Atlantic Avenue, a 29-foot sidewalk on Vanderbilt Avenue, and a 26-foot sidewalk on Pacific Street.

Secondary Study Area

As the Proposed Actions are site-specific, they would not alter building uses, bulks, or arrangements in the surrounding area, or result in any changes to topography, open spaces, natural features, streets, or buildings in the secondary study area under 2023 With-Action conditions. Additionally, no changes to visual resources would occur in the surrounding study area in the future with the Proposed Actions.

Assessment

No significant adverse impacts to urban design or visual resources would occur in the future with the Proposed Actions. The building facilitated by the Proposed Actions on the Development Site would not be incompatible with the existing built character of the secondary study area. The Proposed Development would be built-out to the lot lines and would contain ground-level retail space, expanding the established streetscape and historic commercial corridor of Vanderbilt Avenue, which is currently interrupted by the Development Site's existing setback commercial drive-through and adjacent parking lot. As shown in **Figures H-5 through H-8**, the proposed building's mass would be concentrated on Atlantic Avenue, a 120-foot wide street lined with existing and planned high-rise buildings, such as the 29-story mixed residential/commercial building under construction at 809 Atlantic Avenue and the 17-story buildings planned for the Pacific Park site. The proposed text amendment to Section 35-662 would allow provision of wider sidewalks along Atlantic Avenue and Pacific Street, which would enhance the pedestrian experience along the Development Site's frontages in addition to supporting the height of the Proposed Development. On Vanderbilt Avenue, the Proposed Development's street wall will rise to a base height of approximately 113 feet, above which a 10-foot setback will be provided. On Pacific Street, the street wall will rise to a base height of approximately 82 feet, above which a 15-foot setback will be provided. The Proposed Development's mass will be concentrated on Atlantic Avenue, with a series of step-downs as the building mass moves toward Pacific Street. At its lowest height, a portion of the Proposed Development will rise to only four stories (approximately 50 feet in height), in compliance with the R6B district covering that portion of the Development Site, and respecting the lower-density townhouses on the midblock of Pacific Street (see **Figure H-9**).

This additional height and density on the Development Site would be in keeping with the existing and emerging built environment of the study area. The 8.83 permitted FAR (blended) that would result after the proposed rezoning is also in line with recent nearby rezonings on Atlantic Avenue. 809 Atlantic Avenue was rezoned in early 2019 from R7A/C2-4, R7A and R6A zoning districts to an R9/C2-5 zoning district and an R6A zoning district, which permits up to an 8.0 FAR for residential use within an MIH area. 809 Atlantic Avenue is slated to be developed with a four-story building and a 29-story tower. In addition, 470 Vanderbilt, directly to the northwest of the Development Site, was rezoned in 2009 from M1-1 and R6/C2-3 zoning districts to a C6-3A zoning district, which allows up to an 8.5 residential FAR. At 470 Vanderbilt,

No-Action vs. With-Action Illustrative Rendering

No-Action condition on the Development Site looking south east along Atlantic Avenue.

With-Action condition on the Development Site looking south east along Atlantic Avenue.

Photo taken on 5/13/2020

No-Action vs. With-Action Illustrative Rendering

No-Action condition on the Development Site looking west along Pacific Street.

With-Action condition on the Development Site looking west along Pacific Street.

Photo taken on 5/13/2020

No-Action condition on the Development Site looking north east from Vanderbilt Avenue.

With-Action condition on the Development Site looking north east from Vanderbilt Avenue.

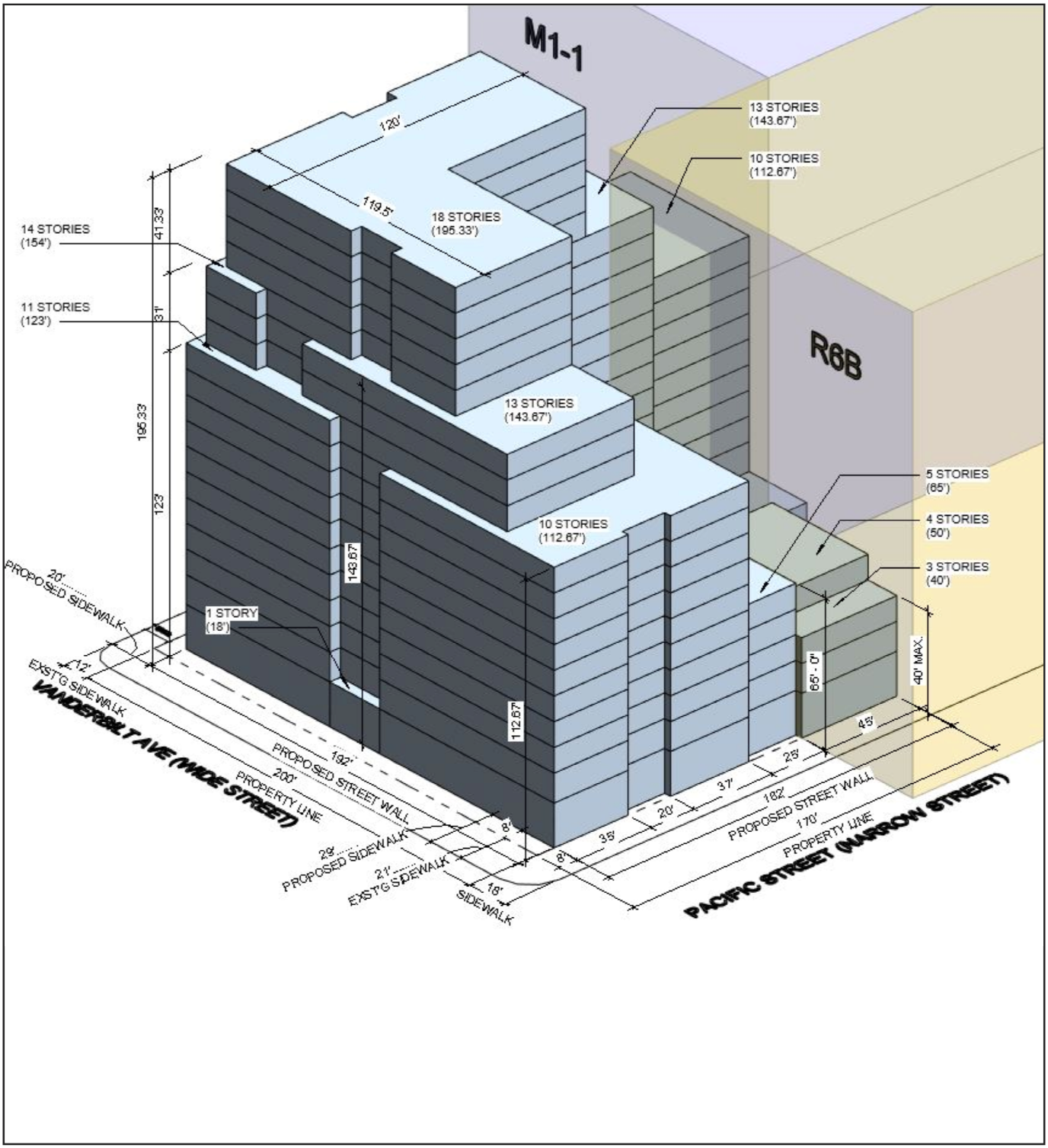
Photo taken on 5/13/2020

No-Action vs. With-Action Illustrative Rendering

No-Action condition on the Development Site looking east from Pacific Street and Vanderbilt Avenue.

With-Action condition on the Development Site looking east from Pacific Street and Vanderbilt Avenue.

Photo taken on 5/13/2020


M1-1
R6B
120'
119.5'
18 STORIES
(195.33')
13 STORIES
(143.67')
10 STORIES
(112.67')
14 STORIES
(154')
11 STORIES
(123')
41.33'
31'
195.33'
123'
13 STORIES
(143.67')
10 STORIES
(112.67')
143.67'
112.67'
5 STORIES
(65')
4 STORIES
(50')
3 STORIES
(40')
1 STORY
(18')
65' - 0"
40' MAX.
20'
PROPOSED SIDEWALK
12'
EXST'G SIDEWALK
VANDERBILT AVE (WIDE STREET)
192'
PROPOSED STREET WALL
200'
PROPERTY LINE
28'
PROPOSED SIDEWALK
21'
EXST'G SIDEWALK
18'
SIDEWALK
8'
35'
8'
20'
37'
25'
45'
182'
PROPOSED STREET WALL
170'
PROPERTY LINE
PACIFIC STREET (NARROW STREET)

the existing 10-story, 565,700 square foot loft building at 470 Vanderbilt would be renovated for retail and office use, while a new building with 12 stories and 376 residential units is slated for development.

As discussed above, the five-block Pacific Park, while approved pursuant to a General Project Plan and not a rezoning, will be located directly to the west of the Development Site. Buildings will range from 202 to 511 feet in height, and the total development will include approximately 6,430 apartments, of which 2,250 will be affordable. The proposed building on the Development Site would be in keeping with these trends.

Additionally, the proposed With-Action building would not obstruct significant view corridors in the surrounding area. As detailed in **Attachment G, "Historic & Cultural Resources,"** although existing views of the bell towers of St. Joseph's R.C. Church Complex from Atlantic and Vanderbilt Avenues, the existing views of the Telephone Building from Vanderbilt Avenue and Pacific Street, and the existing views of the Church of St. Luke and St. Matthew's bell tower from Pacific Street would be obstructed by the Proposed Development, none of these eliminated viewsheds are significant, as more proximate views of these visual resources exist from adjacent public streets and sidewalks. Additionally, there is already a considerable amount of new construction in the study area, including the high-rise buildings listed above. As such, the construction of the Proposed Development would not be incompatible with existing neighborhood development, and would not significantly alter the visual setting and historic context of the nearby Prospect Heights Historic District or other surrounding historic landmarks.

As such, the proposed additional height and bulk on the Development Site would not result in any significant adverse impacts to urban design and visual resources, but rather, is expected to enhance the pedestrian experience in the vicinity of the Development Site with the introduction of ground-floor retail and community facility uses, extending the commercial corridor of Vanderbilt Avenue north to Atlantic Avenue, as well as the planting of street trees along the Pacific Street, Vanderbilt Avenue, and Atlantic Avenue frontages of the Development Site. Further, the proposed text amendment to Section 35-662 would allow provision of wider sidewalks along Atlantic Avenue and Pacific Street, which would enhance the pedestrian experience along the Development Site's frontages.

I. INTRODUCTION

As defined in the *CEQR Technical Manual*, a hazardous material is any substance that poses a threat to human health or the environment. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semivolatile organic compounds, methane, polychlorinated biphenyls and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the *CEQR Technical Manual*, the potential for significant adverse impacts from hazardous materials can occur when: (a) hazardous materials exist on a site, and (b) an action would increase pathways to their exposure; or (c) an action would introduce new activities or processes using hazardous materials.

Phase I Environmental Site Assessments (ESA) was conducted for the Applicant's Development Site. This assessment was undertaken to determine whether additional investigations are necessary and whether an (E) designation should be placed on the Development Site (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) under the Proposed Actions to avoid the potential for impacts pertaining to hazardous materials.

II. PRINCIPAL CONCLUSIONS

The hazardous materials assessment identified that the Development Site has some associated concern regarding environmental conditions. As a result, the proposed zoning map actions may include an (E) designation for the Development Site. Therefore the Proposed Actions are not expected to result in significant adverse impacts for hazardous materials.

With the requirements of the (E) designation (E-XXX) on the Development Site, it is expected that there would be no impact from the potential presence of contaminated materials. The implementation of the preventative and remedial measures outlined below would reduce or avoid the potential that significant adverse hazardous materials impacts would result from potential construction in the rezoning area resulting from the Proposed Actions. Following such construction, there would be no potential for significant adverse impacts.

III. METHODOLOGY

As per Chapter 24 of Title 15 of the Rules of the City of New York, reviews of the regulatory database and/or Sanborn maps and city directories were used to determine past uses of the property and enable an assessment of whether the Development Site should receive an (E) designation.

Chapter 24 of Title 15 of the Rules of the City of New York specifies the process for determining if an (E) designation should be placed on a specific site. Section 24-04 describes the preliminary screening process, which includes reviewing historical documentation for past or current uses that may have affected or be

affecting a projected or potential development site or an adjacent site. Appendix A of the Hazardous Materials Appendix 5 (Chapter 24 of Title 15 of the Rules of the City of New York) provides a list of types of facilities, activities or conditions which would lead to a site receiving an (E) designation.

Phase I ESAs were conducted for the Development Site using the following parameters:

- *Historical Land Use* – The land use history was evaluated using available historical Sanborn fire insurance maps. Sanborn Maps from the years 1906 through 2007 were obtained and reviewed for the Development Site, as well as the adjacent and surrounding areas.

- *Regulatory Agency List Review* – A review of the federal and state hazardous materials databases, maintained by the United States Environmental Protection Agency (US EPA) and New York State Department of Environmental Conservation (NYSDEC), respectively, was performed. This review identified the sites where storage, handling, emission, and /or spill cleanup of hazardous or toxic materials have been performed in order to determine whether they may have impacted the Development Site.

IV. EXISTING CONDITIONS

Phase I ESAs were prepared for the Development Site in October 2017 (Block 1122, Lots 1, 68, 71) and in June 2019 (Block 1122, Lots 9, 10, 69, & 70) by Environmental Business Consultants.

The Phase I ESA for Lots 1, 68, and 71 did not identify any recognized environmental conditions (REC) based on the current usage of the surrounding properties. The Phase I ESA for these lots did identify one historic recognized environmental condition (HREC) for the Development Site. The historic use of the Development Site as a gas station/auto repair shop from at least 1926 through the late-1990s is considered a HREC. The Development Site was listed on the PBS-UST and NYSPILLs databases related to multiple underground storage tanks (UST) and one closed spill incident. Although no formal tank closure reports were provided for review, the tank removals were reportedly conducted in 1998, with NYSDEC oversight and a spill number (No. 97-14110) was assigned to the Development Site based on the discovery of petroleum impacted soils discovered during the tank removals. The database report indicates that approximately 200-300 cubic yards of impacted soils were removed during the tank removal project, with a subsurface investigation conducted in August 1998 and additional remediation conducted in 1999 (May 1999 report). Based upon a review of the 1998 and 1999 reports, the NYSDEC granted closure of the spill in 2010, although residually impacted soils were noted to remain at several areas on the Development Site.

Based upon the closed status of the spill, the depth of groundwater beneath the Development Site, and that approximately 20 years of natural attenuation has occurred since the completion of the tank removal and soil remediation activities, the historic use of the Development Site, including the former USTs and the closed spill incident to be a HREC that does not warrant further investigation. However, the Phase I ESA recommends that any future redevelopment of the Development Site that involves excavation or other intrusive work be conducted under a contingency plan, should residually impacted soils be encountered to ensure work protection and proper handling and disposal of the soils. Based on the HREC disclosed in the Phase I ESA for Lots 1, 68, and 71, more work is required to determine the nature and extent of the contamination so that the potential for significant adverse impacts can be fully disclosed

and mitigation developed, as appropriate. A Phase II ESA (described in Section 330) should be performed to determine the nature and extent of any contamination.

The Phase I ESA for Lots 9, 10, 69, & 70 did not identify any RECs, HRECs, or controlled recognized environmental conditions (CRECs) identified for these lots. However, the Phase I ESA identified the following environmental concerns (ASTM Non-Scope issues/Business Environmental Risks [BERs]):

- A vent pipe and a possible sealed fill pipe were observed on the exterior of the rear (northern) residence at 851 Pacific Street (Lot 69). According to the owner's representative, the vent and fill are associated with a former fuel oil, which was removed and the building converted to natural gas heating. A review of available NYCDOB records indicates a new gas service was connected to this building in 2004. However, as the basement of this structure was not accessible during the site inspection, it is recommended that the presence/absence of this above-ground storage tank (AST) be confirmed and the vent pipe removed. If present any AST should also be removed in accordance with applicable regulations.

- Fluorescent light ballasts were observed throughout portions of buildings, which based on the ages of the structures, may contain PCBs. It is recommended that a PCB survey be performed prior to demolition and/or renovation activities. Any PCB-containing equipment affected by the development of the site must be properly managed during demolition and/or renovation activities. In addition, while the disposal of non-leaking PCB ballasts is not currently regulated by the USEPA, it is recommended that the PCB ballasts be packaged in a lined, steel drum containing an absorbent material and disposed of as PCB-waste to reduce the potential for environmental contamination and potential liability for cleanup of any environmental release of PCBs from the ballasts.

- Interior paint within the accessible buildings was in good to fair condition, with minor evidence of chipping and peeling in the stairway and hallway areas of the residences. The building exterior walls were finished with unpainted brick, painted and unpainted stucco, and unpainted asphalt shingles. Exterior painted surfaces were generally in good condition. The lead contents of the paints are unknown, but due to the ages of the buildings, the presence of lead-based paint (LBP) is possible. Therefore, it is recommended that a lead paint survey be conducted prior to any renovation/demolition activities. The disposal of lead paint waste resulting from renovation or demolition activities may be subject to federal and NYS regulations.

- Suspect asbestos-containing vinyl floor tile/sheet flooring and sheetrock/plaster were observed throughout the accessible buildings. In addition, suspect asbestos-containing shingles were observed on the exterior of the mixed-use building. Most of the suspect asbestos-containing material (ACM) were in good to fair condition at the time of the site inspection with the exception of several damaged/missing floor tiles and exterior shingles. Further, due to the ages of the buildings, it is possible that roofing, roof flashing and other (inaccessible) building materials may contain asbestos.

If activities in the building (i.e., renovation or demolition) will disturb any suspect asbestos material, then it is recommended that an asbestos survey be performed to determine if ACM are present prior to the proposed work. If ACM are present, then a New York City-licensed contractor must be retained to remove the asbestos in accordance with federal, NYS regulations. In addition, an Asbestos Operations and

Maintenance (O&M) Program should be implemented to manage the suspect ACM in place. The purpose of the O&M Program is to outline elements such as continued in-place management of the material, labeling, record keeping, training and response actions should asbestos become damaged or is otherwise encountered onsite.

V. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

In the future without the Proposed Actions, the Development Site would not be rezoned and an (E) designation would not be assigned to the affected lots. The existing uses would remain on the Development Site.

VI. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDTION)

In the future with the Proposed Actions, the rezoning would convert the area to a C6-3X zoning district from the existing R6B and M1-1 zoning. The assessment above established that the Development Site has some potential of hazardous material contamination. The New York City Department of Environmental Protection (DEP) will review the Phase I ESAs to determine whether further investigation is required. If further testing is required, it would be performed after the approval of the Proposed Actions as the Development Site currently contains active uses (McDonald's fast-food restaurant, residential uses, mixed commercial/residential uses, and vehicle storage. Therefore, if DEP determines that further investigation is required, the Proposed Actions would include assigning a hazardous materials (E) designation on Lots 1, 9, 10, 68, 69, 70, and 71 on Block 1122. The (E) designations that would be assigned to these lots would require that further investigation be performed to determine the presence and nature of contaminants of concern and the proper remedial and/or health and safety measures that would be employed during construction.

The New York City Office of Environmental Remediation (OER) will be notified at least one week prior to the start of investigative activities on the Development Site. Such obligations will be made binding through the Restrictive Declaration tied to the Applicant's Development Site (which will outline the timing for all obligations).

In addition, by assigning (E) designations on the Development Site, the potential for an adverse impact to human health and the environment resulting from the Proposed Actions would be reduced or avoided. The (E) designation provides the impetus to identify and address environmental conditions so that significant adverse impacts during site development would be reduced, with OER providing the regulatory oversight of the environmental investigation and remediation during the process. Building permits are not issued by the New York City Department of Buildings (DOB) without prior OER approval of the investigation and/or remediation pursuant to the provisions of Section 11-15 of the New York City Zoning Resolution (Environmental Requirements).

The text of the hazardous materials (E) designation (E-604) for the Development Site (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) would be as follows:

Task 1: Sampling Protocol

> **Prior to construction, the applicant must submit to the New York City Mayor's Office of Environmental Remediation (OER), for review and approval, a Phase II Investigation**

protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented.

No sampling should begin until written approval of a protocol is received by OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2: Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated for the test results, a proposed remedial action plan (RAP) must be submitted by OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation that the work has been satisfactorily completed.

An OER-approved construction-related health and safety plan (CHASP) would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

With these measures in place, the Proposed Actions would not result in any significant adverse impacts related to hazardous materials.

I. INTRODUCTION

This attachment presents the findings of the analyses of traffic, parking, transit, and pedestrian conditions for the Reasonable Worst Case Development Scenario (RWCDS). As discussed in Attachment A, "Project Description," the applicant is seeking a zoning map and a zoning text amendment from the New York City Planning Commission (CPC) in order to facilitate the construction of a new 18-story (195-foot tall) mixed-use building located at 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (the "Development Site"). The proposed project would rezone a portion of the Development Site from M1-1 and R6B to a C6-3X district, and would also include a zoning text amendment to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area ("Proposed Actions"). The project site is bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south (refer to **Figure J-1**).

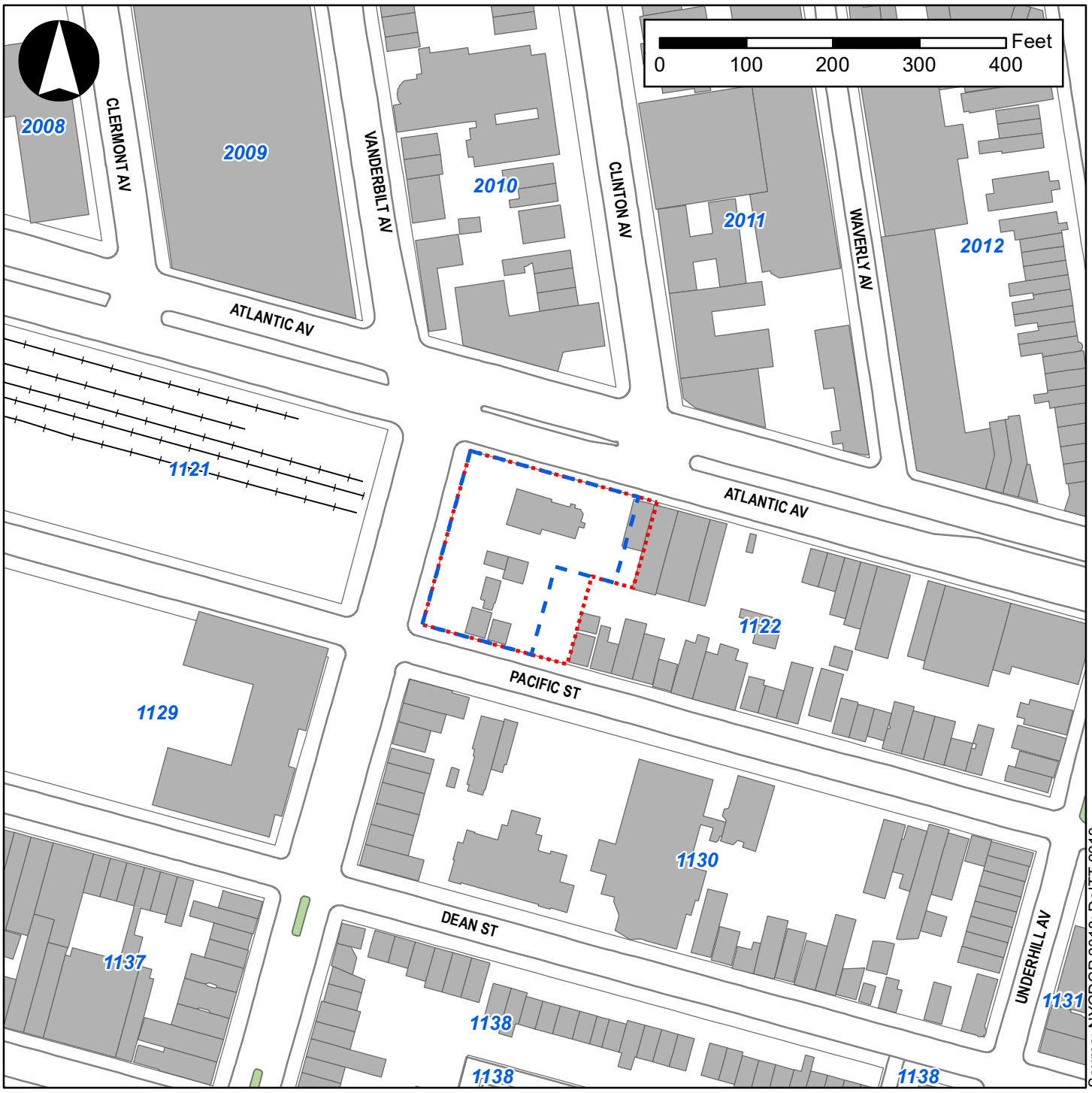
In the future with the Proposed Actions, the Applicant proposes to construct a new mixed-use approximately 376,432 gross square foot (gsf) building consisting of approximately 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. Vehicle access would be provided to the Proposed Development along Pacific Street, and pedestrian entrances for the residential, commercial, and community facility uses would be located along Vanderbilt Avenue, Atlantic Avenue, and Pacific Street, respectively.

However, while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case development scenario (RWCDS) was developed for conservative analysis purposes. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet ("Scenario 2"). Scenario 2, which would maximize the FAR under the proposed zoning, represents the worst-case scenario for transportation analysis purposes and was selected for detailed analysis.

As discussed in Attachment A, "Project Description," under existing conditions, the development site currently contains an approximately 3,948 gsf McDonald's fast food restaurant with a drive-thru and parking lot, three residential buildings containing a total of 10 DUs and approximately 845 gsf of ground floor local retail, and open storage. In the absence of the proposed project, none of the lots within the proposed development are anticipated to be redeveloped.

The proposed development is expected to be completed and fully operational by 2023. The incremental difference between the No-Action and With-Action scenarios serve as the basis of the transportation impact analysis, which was conducted in accordance with the City Environmental Quality Review (*CEQR) Technical Manual*.

Figure J-1
Project Location Map



Legend

- Rezoning Area
- Development Site
- 1130 Tax Blocks
- Existing Building Footprints
- Open Space
- Railroad Tracks

II. PRINCIPAL CONCLUSIONS

Based on the following detailed analysis, the anticipated level of new transportation demand generated by the Proposed Actions is not expected to result in any significant adverse impacts to traffic, parking, transit or pedestrian conditions in the vicinity of the project site. As per *CEQR Technical* Manual criteria, detailed traffic, transit, and parking analysis were not warranted. However, a total of 15 pedestrian elements, including five sidewalks, six corners, and four crosswalks, were analyzed as part of a detailed pedestrian analysis. As discussed below, two elements were analyzed during the weekday AM peak hour, all 15 elements were analyzed during the weekday midday peak hour, and eight elements were analyzed during the weekday PM and Saturday midday peak hours. The analysis determined that no impacts are anticipated as a result of project-generated pedestrian trips.

Additionally, crash data for the traffic and pedestrian study area intersections were obtained from the New York City Department of Transportation (DOT) for the 3-year reporting period between January 1, 2015 and December 31, 2017. While no intersections were found to have experienced a total of 48 or more crashes in any one year during this period, the intersections of Atlantic Avenue and Underhill Avenue/Washington Avenue and Atlantic Avenue and Vanderbilt Avenue both experienced greater than five pedestrian and bicycle injury crashes within one year. Therefore, safety measures, such as restriping of pavement markings, will be coordinated with NYCDOT.

III. PRELIMINARY ANALYSIS METHODOLOGY

The *City Environmental Quality Review* (CEQR) *Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed below, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the number of person and vehicle trips attributable to the proposed project. According to the *CEQR Technical Manual*, 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 to be performed to estimate the incremental trips that could be incurred at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the proposed project would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area, or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, parking, and vehicular and pedestrian safety.

IV. LEVEL 1 SCREENING ASSESSMENT

A Level 1 trip generation screening assessment was conducted in order to estimate the number of person and vehicle trips by mode expected to be generated by the proposed project during the weekday AM, midday, PM, and Saturday midday peak hours. These estimates were then compared to the *CEQR Technical Manual* analysis thresholds of 50 peak hour vehicle trips, 200 peak hour subway/rail riders, 50 peak hour bus riders, and 200 peak hour pedestrian trips to determine if a Level 2 screening and/or quantified operational analyses

may be warranted. The travel demand assumptions used for this assessment are discussed below and a detailed travel demand forecast is provided.

Tables J-1a and J-1b below provide a comparison of the 2023 No-Action and 2023 With-Action conditions identified for analysis purposes under Scenario 1 and 2, respectively. As shown in **Table J-1a**, by 2023, the incremental (net) change that would result under Scenario 1 is a net increase of approximately 306 DUs, 7,800 gsf of community facility (medical office) space, and 50,922 gsf of local retail space, and a net decrease of approximately 3,948 of commercial (fast food restaurant) space. As shown in **Table J-1b**, the net change that would result under Scenario 2 is a net increase of approximately 9,450 gsf of community facility (medical office) space, 149,336 gsf of office space and 61,961 gsf of local retail space, and a net decrease of approximately 10 DUs and 3,948 of commercial (fast food restaurant) space. As mentioned above, Scenario 2 represents the worst-case scenario for transportation analysis purposes and the incremental differences under Scenario 2 serve as the basis for analysis. As the incremental development would have the potential to exceed *CEQR Technical Manual* analysis thresholds, preliminary travel demand forecasts were prepared.

Table J-1a
Comparison of 2023 No-Action and 2023 With-Action Conditions (Scenario 1)

Use	No-Action Scenario	With-Action Scenario	Increment
Residential	10 DUs	316 DUs	**+306 DUs**
Community Facility – Medical Office	0 gsf	7,800 gsf	**+7,800 gsf**
Commercial - Office	0 gsf	0 gsf	**0 gsf**
Commercial – Local Retail	4,793 gsf	55,715 gsf	**+50,922 gsf**
Commercial – Fast Food Restaurant	3,948 gsf	0 gsf	**-3,948 gsf**

Table J-1b
Comparison of 2023 No-Action and 2023 With-Action Conditions (Scenario 2)

Use	No-Action Scenario	With-Action Scenario	Increment
Residential	10 DUs	0 DUs	**-10 DUs**
Community Facility – Medical Office	0 gsf	9,450 gsf	**+9,450 gsf**
Commercial - Office	0 gsf	149,336 gsf	**+149,336 gsf**
Commercial – Local Retail	4,793 gsf	66,754 gsf	**+61,961 gsf**
Commercial – Fast Food Restaurant	3,948 gsf	0 gsf	**-3,948 gsf**

Transportation Planning Factors

Table J-2 shows the transportation planning factors that were used to forecast the travel demand generated by the proposed uses in the weekday AM, midday, PM and Saturday midday peak hours. These include trip generation rates, temporal and directional distributions, mode choice factors, vehicle occupancies, and truck trip factors for the incremental differences between the No-Action and With-Action scenarios under Scenario 2 (refer to **Table J-1b**). The factors in **Table J-2** were based on data cited in the *CEQR Technical Manual*, the 2013-2017 American Community Survey (ACS) Means of Transportation to Work data, data provided by the New York City Department of Transportation (NYCDOT), PHA surveys, and data from previously approved CEQR documents for projects with similar uses. As noted in **Table J-2**, PHA surveys were conducted at the existing McDonalds at the Development Site in order to determine trip generation rates, temporal distributions, modal and directional splits, and vehicle occupancies for the fast food restaurant use.

Travel Demand Forecast

Table J-3 summarizes the results of that travel demand forecast for the proposed development based on the factors shown in **Table J-1** and discussed above. **Table J-3** shows the weekday peak hour person trips, transit trips, walking trips, and vehicle trips that would be generated by each of the proposed uses in 2023 with the construction of the proposed project. As shown in **Table J-3**, the proposed development would generate an incremental increase of 385, 1,973, 985, and 840 person trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. During the weekday AM, midday, PM, and Saturday midday peak hours, the proposed development would generate -55, 26, -69, and -66 incremental vehicle trips (auto, taxi, and truck combined). The proposed development would also generate and incremental increase of 296, 416, 350, and 163 subway trips in the weekday AM, midday, PM and Saturday midday peak hours, respectively. The proposed development would also generate an incremental increase of 32, 68, 48, and 37 bus trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. In addition, the proposed development would generate a total of 458, 1,883, 1,046, and 959 pedestrian trips (including walk-only, subway, and bus trips) in the weekday AM, midday, PM, and Saturday midday peak hours, respectively. Of these incremental pedestrian trips, 130, 1,399, 648 and 759 are walk-only trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively.

As the number of peak hour subway and pedestrian trips resulting from the proposed development would exceed the *CEQR Technical Manual* analysis thresholds for subway and pedestrians (including walk-only, subway, and bus trips) during one or more peak hours, a Level 2 assessment was undertaken to identify specific transportation elements where additional detailed analysis may be warranted. As the number of incremental peak hour traffic and bus trips would not exceed the *CEQR Technical Manual* analysis threshold, additional detailed analysis is not required. As per the *CEQR Technical Manual*¸ a detailed parking assessment is not needed if the threshold for traffic analysis is not exceeded.

Table J-2
Transportation Planning Factors

Land Use:	Residential	Medical Office	Local Retail	Fast Food Restaurant	Office
Size/Units:	-10 DUs	9,450 gsf	61,961 gsf	-3,948 gsf	149,336 gsf
Trip Generation:	(1)	(4)	(1)	(6)	(1)
Weekday	8.075	76.0	205	925	18
Saturday	9.6	62.1	240	738	3.9
	per DU	per 1,000 gsf	per 1,000 gsf	per 1,000 gsf	per 1,000 gsf
Temporal Distribution:	(1)	(4)	(1)	(6)	(1)
AM	10%	11%	3%	8%	12%
Midday	5%	13%	19%	9%	15%
PM	11.0%	9%	10%	11%	14%
Saturday	8.0%	17%	10%	16%	17%
Modal Splits:	(3)	(4)	(4)	(6)	(5)
	All Periods	All Periods	All Periods	AM/MD/PM / SAT	AM/PM/SAT / MD
Auto	9.0%	24.0%	11.0%	58.0% / 61.0%	12.0% / 2.0%
Taxi	1.0%	6.0%	0.0%	0.0% / 0.0%	1.0% / 1.0%
Subway/Railroad	73.0%	59.0%	3.0%	0.0% / 0.0%	77.0% / 7.0%
Public Bus	4.0%	9.0%	2.0%	0.0% / 0.0%	6.0% / 7.0%
Walk/Other	13.0%	2.0%	84.0%	42.0% / 39.0%	4.0% / 83.0%
	100.0%	100.0%	100.0%	100.0% / 100.0%	100.0% / 100.0%
In/Out Splits:	(5)	(4)	(5)	(6)	(5)
	In / Out	In / Out	In / Out	In / Out	In / Out
AM	20% / 80%	62% / 38%	50% / 50%	55% / 45%	96% / 4%
Midday	51% / 49%	47% / 53%	50% / 50%	57% / 43%	39% / 61%
PM	65% / 35%	35% / 65%	50% / 50%	51% / 49%	5% / 95%
Saturday	51% / 49%	49% / 51%	50% / 50%	52% / 48%	39% / 61%
Vehicle Occupancy:	(3,5)	(4)	(5)	(6)	(5)
	All Periods	All Periods	All Periods	AM/MD/PM / SAT	All Periods
Auto	1.17	1.50	2.00	1.34 / 1.75	1.42
Taxi	1.40	1.50	2.00	1.34 / 1.75	1.42
Truck Trip Generation:	(1)	(1)	(1)	(7)	(1)
Weekday	0.06	0.32	0.35	0.35	0.32
Saturday	0.02	0.01	0.04	0.04	0.04
	per DU	per 1,000 gsf	per 1,000 gsf	per 1,000 sf	per 1,000 sf
Truck Temporal Distribution:	(1)	(2)	(1)	(7)	(7)
AM	12%	10%	8%	8%	10%
MD	9%	11%	11%	11%	11%
PM	2%	2%	2%	2%	2%
Saturday	9%	11%	11%	11%	11%
Truck Directional Distribution:	In / Out	In / Out	In / Out	In / Out	In / Out
	50% / 50%	50% / 50%	50% / 50%	50% / 50%	50% / 50%

Notes:

(1) Based on data from *City Environmental Quality Review* (CEQR) *Technical Manual,2014.*

(2) Based on data from the *East New York Rezoning Proposal FEIS, 2016*

(3) Based on American Community Survey 2013-2017 Means of Transportation to Work data for Brooklyn Census Tracts 163, 199, 201, 203, 205, 227, and 305.

(4) Based on data provided by NYCDOT.

(5) Based on data from the *809 Atlantic Avenue Rezoning FEIS, 2018.*

(6) Based on PHA surveys conducted at the McDonalds restaurant located at 840 Atlantic Avenue. *May 2019*.

(7) Assumed to be the same as local retail.

Table J-3
Travel Demand Forecast

Land Use:	Residential		Medical Office		Local Retail		Fast Food Restaurant		Office			
Size/Units:	-10 DUs		9,450 gsf		61,961 gsf		-3,948 gsf		149,336			
Peak Hour Trips:											Total Trips	
AM	-10		80		286		-294		323		385	
Midday	-6		94		1,812		-330		403		1,973	
PM	-9		66		954		-402		376		985	
Saturday	-8		100		1,115		-466		99		840	
Person Trips:												
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	-1	12	7	16	16	-93	-77	37	2	-28	-53
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	3	2	0	0	0	0	3	0	6	2
Subway/Railroad	-1	-7	29	18	4	4	0	0	238	10	270	25
Public Bus	0	0	4	3	3	3	0	0	19	1	26	7
Walk/Other	0	-1	1	1	120	120	-68	-56	12	1	65	65
Total	-1	-9	49	31	143	143	-161	-133	309	14	339	46
Midday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	0	11	12	100	100	-109	-82	3	5	5	35
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	3	3	0	0	0	0	2	2	5	5
Subway/Railroad	-2	-2	26	29	27	27	0	0	11	18	62	72
Public Bus	0	0	4	4	18	18	0	0	11	17	33	39
Walk/Other	-1	-1	1	1	761	761	-79	-60	130	204	812	905
Total	-3	-3	45	49	906	906	-188	-142	157	246	917	1,056
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-1	0	6	10	52	52	-119	-114	2	43	-60	-9
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	1	3	0	0	0	0	0	4	1	7
Subway/Railroad	-5	-2	14	25	14	14	0	0	14	275	37	312
Public Bus	0	0	2	4	10	10	0	0	1	21	13	35
Walk/Other	-1	0	0	1	401	401	-86	-83	1	15	315	334
Total	-7	-2	23	43	477	477	-205	-197	18	358	306	679
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	0	12	11	61	61	-147	-136	5	7	-69	-57
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi	0	0	3	3	0	0	0	0	0	1	3	4
Subway/Railroad	-3	-3	29	30	17	17	0	0	30	47	73	91
Public Bus	0	0	4	5	11	11	0	0	2	4	17	20
Walk/Other	-1	-1	2	1	469	468	-96	-87	2	2	376	383
Total	-4	-4	50	50	558	557	-243	-223	39	61	400	441
Vehicle Trips :												
AM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	-1	8	5	8	8	-69	-57	26	1	-27	-44
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi (Balanced)	0	0	3	3	0	0	0	0	2	2	5	5
Truck	0	0	0	0	1	1	0	0	2	2	3	3
Total	0	-1	11	8	9	9	-69	-57	30	5	-19	-36
Midday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	0	7	8	50	50	-81	-61	2	4	-22	1
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi (Balanced)	0	0	4	4	0	0	0	0	2	2	6	6
Truck	0	0	0	0	1	1	0	0	3	3	4	4
Total	0	0	11	12	51	51	-81	-61	7	9	-12	11
PM	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-1	0	4	7	26	26	-89	-85	1	30	-59	-22
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi (Balanced)	0	0	3	3	0	0	0	0	3	3	6	6
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Total	-1	0	7	10	26	26	-89	-85	4	33	-53	-16
Saturday	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	0	0	8	7	31	31	-84	-78	4	5	-41	-35
Auto (Dropoff)	0	0	0	0	0	0	0	0	0	0	0	0
Taxi (Balanced)	0	0	4	4	0	0	0	0	1	1	5	5
Truck	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	12	11	31	31	-84	-78	5	6	-36	-30

Notes:
25% linked-trip credit appled to local retail uses.

V. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area's pedestrian elements, and street network, and the identification of specific locations where the incremental increase in demand may potentially exceed *CEQR Technical Manual* analysis thresholds and, therefore, require a quantitative analysis. As the incremental traffic and pedestrian trips generated by proposed development exceed the *CEQR Technical Manual* thresholds, Level 2 screenings were conducted, and are discussed below.

Transportation Network

As shown in **Figure J-2**, the development site is bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. Vehicle access would be provided to the Proposed Development along Pacific Street, and pedestrian entrances for the residential, commercial, and community facility uses would be located along Vanderbilt Avenue, Atlantic Avenue, and Pacific Street, respectively. Atlantic Avenue, located to the north of the development site, is an east-west arterial that provides access to the Brooklyn-Queens Expressway at its western end. In the vicinity of the development site, Atlantic Avenue operates with four lanes in each direction, separated by a median. Atlantic Avenue would serve as a main traffic and pedestrian corridor for the proposed development. Vanderbilt Avenue, in the vicinity of the development site, operates as a two-way, north-south street with two vehicular lanes and a bike lane in each direction. Pacific Street, to the south of the development site, operates as a two-way street with on-street parking on both sides of the street. To the east of the development site, Underhill Avenue operates as a one-way southbound street with on-street parking on both sides of the street. Washington Avenue, to the east of the development site, operates as a two-way, north-south street with two lanes in each direction.

Additionally, the development site is well served by transit. A total of four subway stations are located within 0.5-miles of the Development Site and are expected to be used by project-generated demand. As shown in **Figure J-2**, the Clinton-Washington Avenues station, served by the C train, is located approximately 0.1-miles northwest of the Development Site. The 7th Avenue station, served by the B and Q trains, is located approximately 0.5-miles south of the Development Site. To the west of the Development Site, the Bergen Street station serves the Nos. 2, 3, and 4 trains. Atlantic Terminal, served by the Nos. 2, 3, 4, and 5, B, D, N, Q, and R subway lines as well as the Long Island Rail Road (LIRR), is located approximately 0.5-miles west of the Development Site along Atlantic Avenue. In addition, the B25, B26, and B65 local bus routes also operate within the vicinity of the development site.

Transit

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

As shown in **Table J-3**, the proposed development would generate an incremental increase of 296 and 350 subway trips (in and out combined) during the weekday AM and PM peak periods, respectively. Similarly, the development would generate an incremental increase of 32 and 48 bus trips during the weekday AM and PM peak hours, respectively. As the *CEQR Technical Manual* threshold for bus analysis would not be exceeded in either peak hour, further bus analyses are not warranted. However, as the 200 subway trips per hour

Figure J-2
Subway Line and Bus Route Map

threshold would be exceeded during the weekday AM and PM peak hours, a Level 2 screening analysis is warranted.

The incremental subway trips generated by the proposed project were assigned to each of the four aforementioned subway stations based on existing ridership data. As shown below in **Table J-4**, the highest number of peak hour subway trips are expected to occur at Atlantic Terminal (served by nine subway lines and the LIRR) which would experience an incremental increase of approximately 148 and 175 subway trips (in and out combined) during the weekday AM and PM peak hours, respectively. The second highest number of incremental trips would occur at the 7th Avenue station which would experience approximately 74 and 88 subway trips during the weekday AM and PM peak hours, respectively. The Clinton-Washington Avenues station would experience approximately 36 and 43 incremental trips during the weekday AM and PM peak hours, respectively, while the Bergen Street station would experience 38 and 46 trips during the same periods, respectively. As the incremental peak hour demand from the proposed project would not exceed the 200-trip *CEQR Technical Manual* analysis threshold at any station or along any subway line, detailed subway analyses are not warranted and no significant adverse transit impacts are expected.

Table J-4
Net Incremental Peak Hour Subway Trips by Station

Subway Stations/Lines Served	Distance from Site (miles)	% of Total	AM Increment	PM Increment
Clinton-Washington Ave (C)	0.1	12%	36	43
Bergen Street (2/3/4)	0.5	13%	38	46
7th Avenue (B/Q)	0.5	25%	74	88
Atlantic Avenue/Barclays (2/3/4/5/B/D/N/Q/R/LIRR)	0.5	50%	148	175
Total		**100%**	**296**	**350**

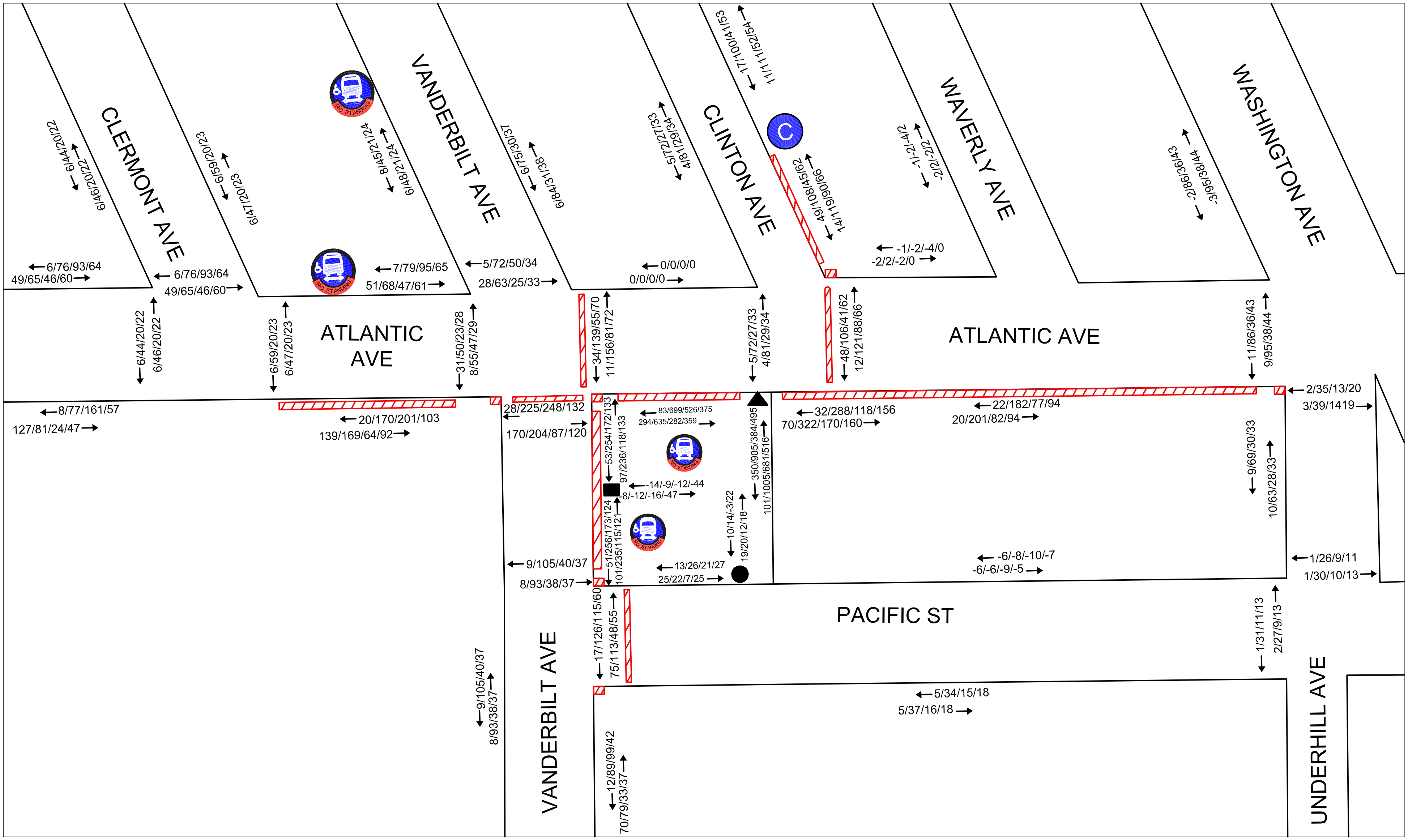
Pedestrians

Many project-generated trips would include a walk component using local sidewalks, street corners, and crosswalks, to access the project site. As shown above in **Table J-3**, the proposed development would generate a net total of 458, 1,883, 1,046, and 959 pedestrian trips (including walk-only trips and pedestrians en route to and from subway and bus stops) during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. As the number of project generated pedestrian trips would exceed the 200-trip *CEQR Technical Manual* threshold during each of the analyzed peak hours, a Level 2 screening is required.

Figure J-3 shows the assignment of project-generated pedestrian trips (walk-only, subway and bus trips) to pedestrian elements (sidewalks, corner area, and crosswalks) in the vicinity of the project site during the weekday AM, midday, PM, and Saturday midday peak hours. The origins and destinations for pedestrian trip assignments were based on the project location, the most direct paths between the site and local transit routes, and ACS Means of Transportation to Work data.

The proposed development will have separate pedestrian entrances for the residential, community facility (medical office), and commercial (office and local retail) uses located on Vanderbilt Avenue, Pacific Street, and Atlantic Avenue, respectively. As shown in **Figure J-3**, a total of 15 pedestrian elements, including five sidewalks, six corners, and four crosswalks, exceed the 200-trip *CEQR Technical Manual* analysis threshold and have been selected for detailed analysis. As listed below, two elements were analyzed during the weekday

Incremental Pedestrian Volumes



LEGEND:

▲ Proposed Commercial Entrance

■ Proposed Residential Entrance

● Proposed Community Facility Entrance

MTA Bus Stop

Pedestrian Element Analysis Location

xx/xx/xx/xx - AM/MD/PM/SAT MD Pedestrian Volumes

AM peak hour, all 15 elements were analyzed during the weekday midday peak hour, and eight elements were analyzed during the weekday PM and Saturday midday peak hours.

Pedestrian Analysis Locations

Sidewalks:

1. South Sidewalk on Atlantic Avenue between Clermont Avenue and Vanderbilt Avenue (MD/PM/SAT)
2. South Sidewalk on Atlantic Avenue between Vanderbilt Avenue and Clinton Avenue (AM/MD/PM/SAT)
3. South Sidewalk on Atlantic Avenue between Clinton Avenue and Washington Avenue (MD/PM/SAT)
4. East Sidewalk on Vanderbilt Avenue between Atlantic Avenue and Pacific Street (MD/PM/SAT)
5. East Sidewalk on Clinton Avenue between Fulton Street and Atlantic Avenue (MD)

Corners:

1. Atlantic Avenue and Clinton Avenue – Northeast Corner (MD)
2. Atlantic Avenue and Vanderbilt Avenue – Southwest Corner (MD/PM/SAT)
3. Atlantic Avenue and Vanderbilt Avenue – Southeast Corner (AM/MD/PM/SAT)
4. Atlantic Avenue and Washington Avenue – Southwest Corner (MD)
5. Vanderbilt Avenue and Pacific Street – Northeast Corner (MD/PM/SAT)
6. Vanderbilt Avenue and Pacific Street – Southeast Corner (MD)

Crosswalks:

1. Atlantic Avenue and Vanderbilt Avenue – South Crosswalk (MD/PM/SAT)
2. Atlantic Avenue and Vanderbilt Avenue – East Crosswalk (MD)
3. Atlantic Avenue and Clinton Avenue – East Crosswalk (MD)
4. Vanderbilt Avenue and Pacific Street – East Crosswalk (MD)

VI. TRANSPORTATION ANALYSES METHODOLOGIES

Pedestrians

Analysis Methodology

Data on peak period pedestrian flow volumes was collected along the analyzed sidewalk and corner areas in the vicinity of the rezoning area in June 2019 and January 2020. Peak hours were determined by comparing rolling hourly averages, and the highest 15-minute volumes within the selected peak hours were used for analysis. Based on existing peak pedestrian volumes within the study area, the 8:00 AM – 9:00 AM, 12:15 PM – 1:15 PM, and 4:30 PM – 5:30 PM periods were selected for analysis during the weekday AM, midday, and PM peak hours, respectively. In addition, the 12:45 PM – 1:45 PM peak hour was selected for analysis during the Saturday midday period.

Peak 15-minute pedestrian flow conditions during the weekday midday period are analyzed using the *2000 Highway Capacity Manual* methodology and procedures outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a

ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table J-5** defines the LOS criteria for pedestrian crosswalk/corner area and a sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

The analysis of sidewalk conditions includes a "platoon" factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. "Platooning" is tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

Table J-5
Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions

LOS	Crosswalk/Corner	Crosswalk/ Corner Area Criteria (ft^2/ped)	Non-Platoon Sidewalk Criteria (ft^2/ped)	Platoon Sidewalk Criteria (ft^2/ped)
A	(Unrestricted)	> 60	> 60	> 530
B	(Slightly Restricted)	> 40 to 60	> 40 to 60	> 90 to 530
C	(Restricted but fluid)	> 24 to 40	> 24 to 40	> 40 to 90
D	(Restricted, necessary to continuously alter walking stride and direction)	> 15 to 24	> 15 to 24	> 23 to 40
E	(Severely restricted)	> 8 to 15	> 8 to 15	> 11 to 23
F	(Forward progress only by shuffling; no reverse movement possible)	≤ 8	≤ 8	≤ 11

Notes:
Based on average conditions for 15 minutes
f t^2/ped – square feet of area per pedestrian
Source: *CEQR Technical Manual*

Significant Impact Criteria

Sidewalks

As the Project Area is located within a Central Business District (CBD), *CEQR Technical Manual* guidelines define a significant adverse sidewalk impact to have occurred under platoon conditions if the average pedestrian space under the No-Action condition is greater than 39.2 square feet/pedestrian (sf/ped), and the average pedestrian space under the With-Action condition is 31.5 sf/ped or less (mid-LOS D or worse). If the average pedestrian space under the With-Action condition is greater than 31.5 sf/ped (mid-LOS D or better), the impact should not be considered significant. If the No-Action pedestrian space is between 6.4 and 39.2 sf/ped, a reduction in pedestrian space under the With-Action condition should be considered significant based on **Table J-6**, which shows a sliding-scale that identifies what decrease in pedestrian space is considered a significant impact for a given pedestrian space value in the No-Action condition. If the reduction in pedestrian space is less than the value in **Table J-6**, the impact is not considered significant. If the average

pedestrian space under the No-Action condition is less than 6.4 sf/ped, then a reduction in pedestrian space greater than or equal to 0.3 sf/ped, under the With-Action condition, should be considered significant.

Corner Areas and Crosswalks

For CBD areas, *CEQR Technical Manual* impact criteria define a significant adverse corner area or crosswalk impact to have occurred if the average pedestrian space under the No-Action condition is greater than 21.5 sf/ped and, under the With-Action condition, the average pedestrian space decreases to 19.5 sf/ped or less (mid-LOS D or worse). If the pedestrian space under the With-Action condition is greater than 19.5 sf/ped (mid-LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 21.5 sf/ped, a decrease in pedestrian space under the With- Action condition should be considered significant based on **Table J-7** which shows a sliding-scale that identifies what decrease in pedestrian space is considered a significant impact for a given amount of pedestrian space in the No-Action condition. If the decrease in pedestrian space is less than the value in **Table J-7**, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 5.1 sf/ped, then a decrease in pedestrian space greater than or equal to 0.2 sf/ped should be considered significant.

Pedestrian and Vehicular Safety Evaluation

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

Table J-6
Impact Criteria for Sidewalks
With Platoon Flow in a CBD Location

No-Action Condition Pedestrian Flow (sf/ped)			With-Action Condition Pedestrian Flow Increment to be Considered a Significant Impact (sf/ped)
> 39.2			With-Action Condition < 31.5
38.7	to	39.2	Reduction ≥ 3.8
37.8	to	38.6	Reduction ≥ 3.7
36.8	to	37.7	Reduction ≥ 3.6
35.9	to	36.7	Reduction ≥ 3.5
34.9	to	35.8	Reduction ≥ 3.4
34.0	to	34.8	Reduction ≥ 3.3
33.0	to	33.9	Reduction ≥ 3.2
32.1	to	32.9	Reduction ≥ 3.1
31.1	to	32.0	Reduction ≥ 3.0
30.2	to	31.0	Reduction ≥ 2.9
29.2	to	30.1	Reduction ≥ 2.8
28.3	to	29.1	Reduction ≥ 2.7
27.3	to	28.2	Reduction ≥ 2.6
26.4	to	27.2	Reduction ≥ 2.5
25.4	to	26.3	Reduction ≥ 2.4
24.5	to	25.3	Reduction ≥ 2.3
23.5	to	24.4	Reduction ≥ 2.2
22.6	to	23.4	Reduction ≥ 2.1
21.6	to	22.5	Reduction ≥ 2.0
20.7	to	21.5	Reduction ≥ 1.9
19.7	to	20.6	Reduction ≥ 1.8
18.8	to	19.6	Reduction ≥ 1.7
17.8	to	18.7	Reduction ≥ 1.6
16.9	to	17.7	Reduction ≥ 1.5
15.9	to	16.8	Reduction ≥ 1.4
15.0	to	15.8	Reduction ≥ 1.3
14.0	to	14.9	Reduction ≥ 1.2
13.1	to	13.9	Reduction ≥ 1.1
12.1	to	13.0	Reduction ≥ 1.0
11.2	to	12.0	Reduction ≥ 0.9
10.2	to	11.1	Reduction ≥ 0.8
9.3	to	10.1	Reduction ≥ 0.7
8.3	to	9.2	Reduction ≥ 0.6
7.4	to	8.2	Reduction ≥ 0.5
6.4	to	7.3	Reduction ≥ 0.4
<6.4			Reduction ≥ 0.3

Source: 2014 *CEQR Technical Manual*

Table J-7
Significant Impact Criteria for Corners and Crosswalks in a CBD Location

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

Source: 2014 *CEQR Technical Manual*

VII. PEDESTRIANS

Existing Conditions

As discussed previously in Section V "Level 2 Screening Assessment", five sidewalks, six corners, and four crosswalks have been selected for detailed analysis as they are locations where project-generated pedestrian trips are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold. Two elements would be analyzed during the weekday AM period, all 15 pedestrian elements would be analyzed during the weekday midday period, eight would be analyzed during the weekday PM period, and eight would be analyzed during the Saturday midday period.

Tables J-8, J-9, and J-10 show existing average pedestrian space (in square feet per pedestrian) and levels of service at analyzed sidewalks, crosswalks, and corners, respectively. As shown in **Tables J-8, J-9 and J-10**, all analyzed pedestrian elements currently operate at LOS B or better in all peak hours.

The Future Without the Proposed Action (No-Action)

Increased pedestrian demand due to background growth was added to existing volumes to determine future volumes without the proposed project. An annual compounded background growth rate of 0.50 percent was applied to existing travel demand through 2023 pursuant to *CEQR Technical Manual* criteria. In addition, pedestrian volumes are expected to increase a result of the No-Action development projects in the surrounding area (see **Table C-2** in **Attachment C, "Land Use, Zoning, and Public Policy**").

Tables J-11, J-12 and J-13 show the forecasted No-Action average pedestrian space and LOS along the analyzed sidewalks, crosswalks and corners during the weekday AM, midday, PM, and Saturday midday peak hours. As shown in **Tables J-11, J-12, and J-13**, under No-Action conditions, all analyzed pedestrian elements would continue to operate at LOS B or better.

Table J-8
Sidewalk Analysis – Existing Conditions

Location	Corner	Total Width (ft.)	Effective Width (ft.)	Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				Platoon-Adjusted LOS			
				AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. btwn Clermont Ave. & Vanderbilt Ave.	South	10	6.8	-	57	30	27	-	1,023.1	1,944.0	2,160.0	-	A	A	A
Atlantic Ave. btwn Vanderbilt Ave. & Clinton Ave.	South	11	7	88	70	81	34	687.2	864.0	746.6	2,090.1	A	A	A	A
Atlantic Ave. btwn Clinton Ave. & Washington Ave.	South	12.5	3.5	-	21	23	79	-	1,440.0	1,347.6	382.7	-	A	A	B
Vanderbilt Ave. btwn Atlantic Ave. & Pacific St.	East	20.5	15.5	-	250	163	21	-	582.5	821.6	6,377.1	-	A	A	A
Clinton Ave. btwn Fulton St. & Atlantic Ave.	East	20	8.8	-	37	-	-	-	2054.9	-	-	-	A	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-9
Crosswalk Area Analysis – Existing Conditions

Location	Corner	Width (ft.)	Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				LOS			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Vanderbilt Ave.	South	13.5	-	37	29	39	-	470.1	1,277.3	896.3	-	A	A	A
	East	14.8	-	275	-	-	-	83.4	-	-	-	A	-	-
Atlantic Ave. & Clinton Ave.	East	17.1	-	31	-	-	-	860.0	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	East	16.0	-	162	-	-	-	141.4	-	-	-	A	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-10
Corner Area Analysis – Existing Conditions

Location	Corner	Pedestrian Space (SFP)				LOS			
		AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Clinton Ave.	NE	-	487.4	-	-	-	A	-	-
Atlantic Ave. & Vanderbilt Ave.	SW	-	740.0	1,145.6	464.4	-	A	A	A
	SE	526.3	361.3	583.8	473.3	A	A	A	A
Atlantic Ave. & Washington Ave.	SW	-	1,023.1	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	NE	-	611.4	678.2	416.3	-	A	A	A
	SE	-	556.6	-	-	-	A	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service

Table J-11
Sidewalk Analysis – 2023 No-Action Conditions

Location	Corner	Total Width (ft.)	Effective Width (ft.)	Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				Platoon-Adjusted LOS			
				AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. btwn Clermont Ave. & Vanderbilt Ave.	South	10	6.8	-	96	50	57	-	607.5	1,166.4	1,023.1	-	A	A	A
Atlantic Ave. btwn Vanderbilt Ave. & Clinton Ave.	South	11	7	139	174	164	118	435.0	347.5	368.7	602.2	B	B	B	A
Atlantic Ave. btwn Clinton Ave. & Washington Ave.	South	12.5	3.5	-	157	121	197	-	192.5	256.1	153.3	-	B	B	B
Vanderbilt Ave. btwn Atlantic Ave. & Pacific St.	East	20.5	15.5	-	580	410	326	-	251.0	326.6	410.7	-	B	B	B
Clinton Ave. btwn Fulton St. & Atlantic Ave.	East	20	8.8	-	257	-	-	-	295.8	-	-	-	B	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-12
Crosswalk Area Analysis – 2023 No-Action Conditions

Location	Corner	Width (ft.)	Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				LOS			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Vanderbilt Ave.	South	13.5	-	97	79	90	-	177.6	465.6	385.3	-	A	A	A
	East	14.8	-	563	-	-	-	40.3	-	-	-	B	-	-
Atlantic Ave. & Clinton Ave.	East	17.1	-	146	-	-	-	181.5	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	East	16.0	-	430	-	-	-	48.3	-	-	-	B	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-13
Corner Area Analysis – 2023 No-Action Conditions

Location	Corner	Pedestrian Space (SFP)				LOS			
		AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Clinton Ave.	NE	-	127.0	-	-	-	A	-	-
Atlantic Ave. & Vanderbilt Ave.	SW	-	256.5	365.5	227.7	-	A	A	A
	SE	278.8	150.7	213.0	175.3	A	A	A	A
Atlantic Ave. & Washington Ave.	SW	-	310.7	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	NE	-	158.8	220.8	160.2	-	A	A	A
	SE	-	159.2	-	-	-	A	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

The Future With the Proposed Action (With-Action)

As discussed previously, the proposed project is expected to generate a net total of 458, 1,883, 1,046, and 959 pedestrian trips (including walk-only trips and pedestrians en route to and from subway and bus stops) during the weekday AM, midday, PM, and Saturday midday peak hours, respectively (refer to **Table J-3**). The assignment of these trips to the analyzed pedestrian elements is shown in **Figure J-3**. These pedestrian volumes were added to the projected No-Action volumes to generate the With-Action pedestrian volumes for analysis. **Tables J-14, J-15, and J-16** show the average pedestrian space and levels of service at the analyzed sidewalk and corner areas during the weekday midday peak hour, and the 2023 future With-Action pedestrian volumes are shown below in **Tables J-14, J-15, and J-16** for each analyzed peak hour.

As shown in **Tables J-14, J-15, and J-16**, under the With-Action conditions, all analyzed pedestrian elements would operate at an acceptable LOS D or better in all peak periods and would therefore not exceed *CEQR Technical Manual* thresholds for a significant impact.

III. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Study Area High Crash Locations

Under *CEQR Technical Manual* guidelines, an evaluation of pedestrian and vehicular safety is needed for locations within the traffic and pedestrian study areas that have been identified as high crash locations. These locations are defined as locations where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes have occurred in any consecutive twelve months of the most recent three-year period for which data are available. Reportable crashes are defined as those involving injuries, fatalities, and/or $1,000 or more in property damage.

Table J-17 below shows summary crash data for the three-year reporting period between January 1, 2015 and December 31, 2017 that were obtained from DOT. This is the most recent three-year period for which data are available. The table shows the total number of crashes each year and the number of crashes each year involving pedestrians and cyclists at intersections in proximity to the project site where the majority of new vehicular and pedestrian trips would be concentrated.

As shown in **Table J-17**, no intersections were found to have experienced a total of 48 or more crashes in any one year. However, as shown in **Table J-17**, the intersections of Atlantic Avenue/Vanderbilt Avenue and Atlantic Avenue/Underhill Avenue/Washington Avenue experienced a total of seven pedestrian and bicycle injury crashes in 2016 and 2017, respectively. In 2016, the intersection of Atlantic Avenue and Vanderbilt Avenue experienced three reported pedestrian injury crashes and four reported bicycle injury crashes. In the vicinity of this intersection, bicycle lanes are striped along both sides of Vanderbilt Avenue. Additionally, the bike lane pavement markings along Vanderbilt Avenue extend through the intersection of Vanderbilt Avenue and Atlantic Avenue. In 2017, the intersection of Atlantic Avenue and Underhill Avenue/Washington Avenue experienced six reported pedestrian injury crashes and one reported bicycle injury crash. Both intersections are signalized and are equipped with pedestrian signals and striped crosswalks at each approach. While this intersection is expected to experience little increase in vehicular traffic, it would experience increases in pedestrian volumes. Safety improvements that could be made to the intersection include augmenting each of the crosswalks with high visibility striping. The applicant will coordinate with DOT to assess whether or not additional safety measures should be implemented.

Table J-14
Sidewalk Analysis – 2023 With-Action Conditions

Location	Corner	Total Width (ft.)	Effective Width (ft.)	Project Increment				Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				Platoon-Adjusted LOS			
				AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. btwn Clermont Ave. & Vanderbilt Ave.	South	10	6.8	-	339	265	195	-	435	315	252	-	133.9	185.0	231.3	-	B	B	B
Atlantic Ave. btwn Vanderbilt Ave. & Clinton Ave.	South	11	7	377	1,334	808	734	516	1,508	972	852	117.0	39.5	61.8	83.1	B	D	C	C
Atlantic Ave. btwn Clinton Ave. & Washington Ave.	South	12.5	3.5	-	610	288	316	-	767	409	513	-	38.8	75.5	58.5	-	D	C	C
Vanderbilt Ave. btwn Atlantic Ave. & Pacific St.	East	20.5	15.5	-	491	290	266	-	1,071	700	592	-	135.8	191.2	226.1	-	B	B	B
Clinton Ave. btwn Fulton St. & Atlantic Ave.	East	20	8.8	-	227	-	-	-	484	-	-	-	156.9	-	-	-	B	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-15
Crosswalk Area Analysis – 2023 With-Action Conditions

Location	Corner	Width (ft.)	Project Increment				Peak Hour Volume				Average Pedestrian Space (ft^2/ped)				LOS			
			AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Vanderbilt Ave.	South	13.5	-	429	335	252	-	526	414	342	-	31.1	84.5	98.1	-	C	A	A
	East	14.8	-	295	-	-	-	858	-	-	-	26.1	-	-	-	C	-	-
Atlantic Ave. & Clinton Ave.	East	17.1	-	227	-	-	-	373	-	-	-	70.2	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	East	16.0	-	239	-	-	-	669	-	-	-	29.9	-	-	-	C	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-16
Corner Area Analysis – 2023 With-Action Conditions

Location	Corner	Pedestrian Space (SFP)				LOS			
		AM	MD	PM	SAT	AM	MD	PM	SAT
Atlantic Ave. & Clinton Ave.	NE	-	91.3	-	-	-	A	-	-
Atlantic Ave. & Vanderbilt Ave.	SW	-	65.3	96.1	92.8	-	A	A	A
	SE	142.5	49.8	76.8	79.3	A	B	A	A
Atlantic Ave. & Washington Ave.	SW	-	125.0	-	-	-	A	-	-
Pacific St. & Vanderbilt Ave.	NE	-	84.1	132.2	113.6	-	A	A	A
	SE	-	111.1	-	-	-	A	-	-

Notes: Methodology based on *CEQR Technical Manual* guidelines
SFP – Square feet per pedestrian.
LOS – Level of Service.

Table J-17
Accident Data Summary 2015-2017

Intersection		Pedestrian Injury Accidents			Bicycle Injury Accidents			Total Pedestrian/ Bicyclist Injury Accidents			Total Accidents (Reportable + Non-Reportable)		
Roadway 1	Roadway 2	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Atlantic Avenue	Clermont Avenue	1	2	0	0	0	0	1	2	0	8	7	7
	Clinton Avenue	0	0	0	0	0	0	0	0	0	2	1	4
	Waverly Avenue	0	0	0	0	0	0	0	0	0	2	1	1
	Vanderbilt Avenue	0	3	2	2	4	1	2	7	3	11	19	12
	Underhill/ Washington Avenues	2	0	6	0	1	1	2	1	7	13	11	19
Vanderbilt Avenue	Pacific Street	1	0	0	1	4	2	2	4	2	4	5	3
Underhill Avenue	Pacific Street	0	1	0	1	0	0	1	1	0	1	2	0

Source: NYSDMV/DOT

The *Vision Zero Brooklyn Pedestrian Safety Action Plan Update*, released in 2019, identifies the study area as a "Priority Area", and Atlantic Avenue, in the vicinity of the project area, as a "Priority Corridor." The City's Vision Zero initiative seeks to eliminate all deaths from traffic crashes regardless of whether on foot, bicycle, or inside a motor vehicle. In an effort to drive these fatalities down, DOT and NYPD developed a set of five plans, each of which analyzes the unique conditions of one New York City borough and recommends actions to address the borough's specific challenges to pedestrian safety. These plans pinpoint the conditions and characteristics of pedestrian fatalities and severe injuries; they also identify priority corridors, intersections and areas that disproportionately account for pedestrian fatalities and severe injuries, prioritizing them for safety interventions. The plans outline a series of recommended actions comprised of engineering, enforcement and education measures that intend to alter the physical and behavioral conditions on city streets that lead to pedestrian fatality and injury.

The *Vision Zero Queens Pedestrian Safety Action Plan* identifies a series of engineering/planning, enforcement, and education/awareness campaign strategies to enhance pedestrian safety along the borough's Priority Corridors and Priority Intersections. These strategies, some of which have already been implemented, include measures such as expanding exclusive pedestrian crossing time, installing additional lighting around key transit stops, expanding the bicycle network, prioritizing targeted enforcement and deploying speed cameras, and targeting intensive street-level outreach. The Plan also calls for an expansion of exclusive pedestrian crossing time at every feasible intersection on all new Priority Corridors, and the modification of signal timings to reduce speeding on all feasible new Priority Corridors by the end of 2019.

I. INTRODUCTION

According to the guidelines provided in the 2020 *CEQR Technical Manual*, air quality analyses are conducted in order to assess the effect of an action on ambient air quality (i.e., the quality of the surrounding air), or effects on the project because of ambient air quality. Air quality can be affected by "mobile sources," pollutants produced by motor vehicles, and by pollutants produced by fixed facilities, i.e., "stationary sources." As per the 2020 *CEQR Technical Manual*, an air quality assessment should be carried out for actions that can result in either significant adverse mobile source or stationary source air quality impacts.

Vehicular traffic, whether on a road or in a parking garage, may affect air quality. Other moving sources, such as planes, helicopters, boats, trains, etc., may also affect air quality. All of these sources of pollution are termed "mobile sources." In general, mobile source analyses consider projects that add new vehicles to the roads, change traffic pat-terns by diverting vehicles, include parking lots or garages, or add new uses near sources of pollutants, such as when a park is proposed adjacent to a highway. Per *CEQR Technical Manual*, projects that would result in placement of operable windows, balconies, air intakes, or intake vents generally within 200 feet of an atypical source of vehicular pollutants, such as a highway or bridge with a total of more than two lanes, require a detailed mobile source impact analysis.

Stationary source impacts could occur with actions that create new stationary sources or pollutants, such as emission stacks for industrial plants, hospitals, or other large institutional uses, or a building's boiler stacks used for heating/hot water, ventilation, and air conditioning ("HVAC") systems, that can affect surrounding uses. Impacts from boiler emissions associated with a development are a function of fuel type, stack height, minimum distance of the stack on the source building to the closest building of similar or greater height, building use, and the square footage size of the source building. In addition, stationary source impacts can occur when new uses are added near existing or planned emissions stacks, or when new structures are added near such stacks and those structures change the dispersion of emissions from the stacks so that they affect surrounding uses.

The new development proposed at 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68-71) would be an 18-story mixed-use building with 376,432 gross square foot (gsf) floor area. The location of the Development Site is shown on **Figure K-1.**

The Proposed Development is designed as a multi-tiered-structure with the height of the 18-story central section being 195 feet and the height of the roof's bulkhead being 205 feet. Lower tiers on the building are located on the 4th, 7th, 9th, 10th, 13th, and 15th floors, and these tiers are adjacent to the central section of the structure (see **Figures K-2** and **K-3**).

Because the Proposed Development consists of only one building, no project-on-project analysis is warranted. However, emissions from heating, ventilation, and air conditioning (HVAC) system of the Proposed Development may impact existing buildings located within 400 feet of the proposed building that are taller or the same height as the proposed builiding. Therefore, a project-on-existing analysis is warranted.

One of these buildings is a proposed 29-story (312 foot-tall) building at 809 Atlantic Avenue (Block 2010 Lots 1 and 59). The other building is an existing 17-story mixed residential and commercial building located at 550 Vanderbilt Avenue (Block 1129 Lot 200), which is approximately 202 feet tall (at roof level) and includes roof-top penthouses that rise to a height of approximately 213 feet.

Air quality, which is a general term used to describe pollutant levels in the atmosphere, would be affected by changes associated with the proposed project. This analysis examines potential impacts of the emissions from the HVAC system of the Proposed Development as they impact the existing and proposed buildings (project-on-existing analysis).

An analysis of the potential impacts of emissions from large or major nearby sources on the Proposed Development is not warranted because no large or major emission sources (Title V facilities or State facilities) are located within 1,000 feet of project area. In addition, as no nearby industrial facilities were identified within 400 feet of the Project Area, an industrial source analysis with toxic air pollutants is also not warranted.

As discussed in **Attachment J, "Transportation,"** compared to the No-Action condition, the Proposed Actions would not add any new traffic volumes to the roadway network, therefore, further analysis of air quality mobile sources from action-generated vehicle trips screened out in accordance with 2020 *CEQR Technical Manual* assessment screening thresholds. Further, the Project Area is not within 200 feet of an atypical source of vehicular pollutants. Therefore, a detailed mobile source air quality analysis is not warranted for the Proposed Actions. However, as a parking garage is associated with the Proposed Development, a parking garage air quality analysis is warranted.

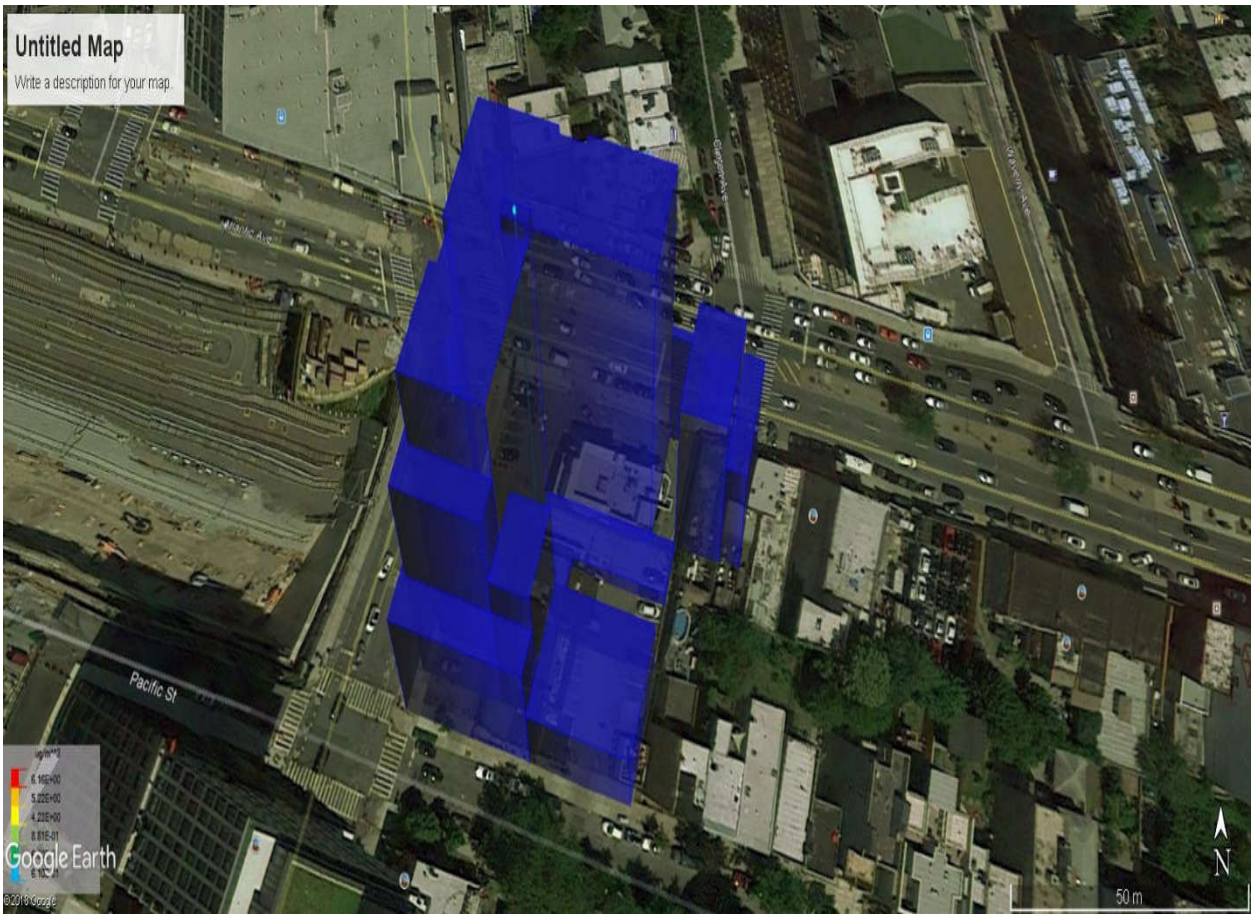
Potential air quality impacts were estimated following the procedures and methodologies prescribed in the New York *City Environmental Quality Review* (*CEQR) Technical Manual*.

II. HVAC ANALYSIS

Relevant Air Pollutants

The U.S. Environmental Protection Agency (EPA) has identified several pollutants, which are known as criteria pollutants, as being of concern nationwide. As the proposed buildings would be heated by natural gas, the two criteria pollutants associated with natural gas combustion – nitrogen dioxide (NO_2) and particulate matter smaller than 2.5 microns ($PM_{2.5}$) – were considered for the HVAC analysis.

Figure K-3: 3-D View of Proposed Development in Google Maps



Applicable Air Quality Standards and Significant Impact Criteria

As required by the Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) have been established for the criteria pollutants by EPA. The NAAQS are concentrations set for each of the criteria pollutants in order to protect public health and the nation's welfare, and New York has adopted the NAAQS as the State ambient air quality standards. This analysis addressed compliance of the potential impacts with the 24-hour and annual $PM_{2.5}$ NAAQS as well as the one-hour and annual NO_2 NAAQS.

In addition to the NAAQS, the *CEQR Technical Manual* requires that projects subject to CEQR apply a $PM_{2.5}$ significant impact criteria (based on concentration increments) developed by the New York City Department of Environmental Protection (DEP) to determine whether potential adverse $PM_{2.5}$ impacts would be significant. If the estimated impacts of a proposed project are less than these increments, the impacts are not considered to be significant. This analysis addressed compliance of the potential impacts with the 24-hour and annual $PM_{2.5}$ CEQR significant impact criteria. The current standards that were applied to this analysis, together with their health-related averaging periods, are provided in **Table K-1**.

Table K-1:
Applicable NAAQS and CEQR Significant Impacts Criteria

Pollutant	Averaging Period	NAAQS	CEQR Significant Impact Criteria
NO_2	One-Hour	0.10 ppm (188 µg/m^3)	--
	Annual	.053 ppm (100 µg/m^3)	--
$PM_{2.5}$	24-Hour	35 µg/m^3	7.7 µg/m^3
	Annual	12 µg/m^3	0.3 µg/m^3

Source: EPA, "National Primary and Secondary Ambient Air Quality Standards." (49 CFR 50) (www.epa.gov/air/criteria.html) and New York State Department of Environmental Conservation (http://www.dec.ny.gov/chemical/8542.html.
Notes: ppm = parts per million
µg/m^3 = micrograms per cubic meter

NO_2 NAAQS

Nitrogen oxide (NOx) emissions from gas combustion consist predominantly of nitric oxide (NO) at the source. The NOx in these emissions are then gradually converted to NO_2 (the pollutant of concern) in the atmosphere in the presence of ozone and sunlight, as these emissions travel downwind of a source.

The one-hour NO_2 NAAQS standard of 0.100 ppm (188 µg/m^3) is the three-year average of the 98th percentile of daily maximum one-hour average concentrations in a year. For determining compliance with this standard, the EPA has developed a modeling approach for estimating one-hour NO_2 concentrations that is comprised of three tiers: Tier 1, the most conservative approach, assumes a full (100 percent) conversion of NOx to NO_2; Tier 2 applies a conservative ambient NOx/NO_2 ratio of 80 percent to the NOx estimated concentrations; and Tier 3, which is the most precise approach, employs AERMOD's Plume Volume Molar Ratio Method (PVMRM) module. If hourly NO_2 background concentrations are added internally to the modeled concentrations, AERMOD ultimately generates the total eighth highest daily maximum one-hour NO_2 concentration that could be directly compared with the one-hour NO_2 NAAQS standard.

Based on New York City Department of Planning (DCP) guidance, Tier 1, as the most conservative modeling approach, should initially be applied as a preliminary screening tool to determine whether violations of

the NAAQS is likely to occur. If exceedances of the one-hour NO_2 NAAQS are estimated, the less conservative Tier 2 and Tier 3 should be applied.

The annual NO_2 standard is 0.053 parts per million (ppm, or 100 µg/m^3). In order to conservatively estimate annual NO_2 impacts, a NO_2 to NOx ratio of 0.75 percent, which is recommended by the DEP for an annual NO_2 analysis, was applied.

$PM_{2.5}$ CEQR Significant Impact Criteria

CEQR Technical Manual guidance includes the following criteria for evaluating significant adverse $PM_{2.5}$ incremental impacts:

> *Predicted 24-hour maximum $PM_{2.5}$ concentration increase of more than half the difference between the 24-hour $PM_{2.5}$ background concentration and the 24-hour standard.*

A 24-hour $PM_{2.5}$ background concentration of 19.6 µg/m^3 was calculated from the Brooklyn JHS-126 monitoring station as the average of the 98th percentile for the latest three years of available monitoring data collected by the New York State Department of Environmental Conservation (NYSDEC) for 2015-2017 time period (2015=25.2 µg/m^3; 2016=16.4 µg/m^3; 2017=17.2 µg/m^3). As the applicable background value is 19.6 µg/m^3, half of the difference between the 24-hour $PM_{2.5}$ NAAQS and this background value is 7.7 µg/m^3. As such, a significant impact criterion of 7.7 µg/m^3 was used for determining whether the potential 24-hour $PM_{2.5}$ impacts are considered to be significant.

For an annual average adverse $PM_{2.5}$ incremental impact, according to CEQR guidance:

> *Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 µg/m^3 at any receptor location for stationary sources.*

The above 24-hour and annual significant impact criteria were used to evaluate the significance of predicted $PM_{2.5}$ impacts.

HVAC Screening Analysis

Based on CEQR guidance, a preliminary screening analysis needs to be conducted as a first step to predict whether the potential impacts of the HVAC emissions would be significant and if this step determines a potential for significant impacts, a detailed analysis would be required. The CEQR screening procedure is applicable to single buildings that are more than 30 feet apart from the nearest building of similar or greater height. As such, the screening procedure was applied to project-on-existing analysis.

The total square footage of the Proposed Development was used and the conservative generic nomograph shown on Figure 17-3 of the *CEQR Technical Manual* "Stationary Source Screen," for a corresponding stack height, was applied (see **Figure K-4**). This nomograph depicts the size of a development versus the distance below which a potential impact could occur and provides a threshold distance. As required by the CEQR screening procedure, the 160-foot curve in Figure 17-3 was applied as the 160-foot curve height is closest to but not higher than the stack height of the Proposed Development (which are based on building height and an assumed stack height of 3 feet above the bulkhead). If the actual distance between a building with an HVAC stack and an affected building is greater than the threshold distance for a building size, then that building passes the screening analysis (and no significant impact is predicted). However, if the actual distance is less than the threshold distance for a building, then there is a potential for a significant impact, and a detailed analysis would be required. Results of the screening analysis for project-on-existing are provided in **Table K-2**.

Figure K-4: HVAC Screening Analysis Nomograph

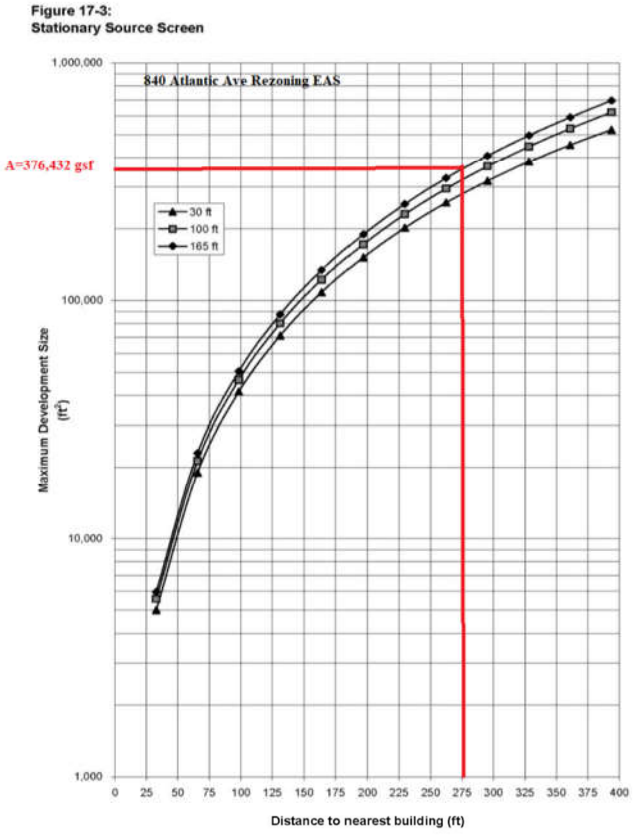


Table K-2: Results of the Project-on-Existing Screening Analysis

Site	Block/ Lot	Total Floor Area	Stack Height	Nearest Building	Distance Between Buildings	Threshold Distance CEQR Figure 17-3	CEQR Figure 17-3 Results	
		sq. ft.	feet		feet	feet	Pass	Fail
Proposed Development	Block 1122, Lots 1, 9, 10, 68-71	376,432	208	Existing 17-story 550 Vanderbilt Ave Building	115	275		**Fail**
				Future Proposed Building, 809 Atlantic Ave	200			**Fail**

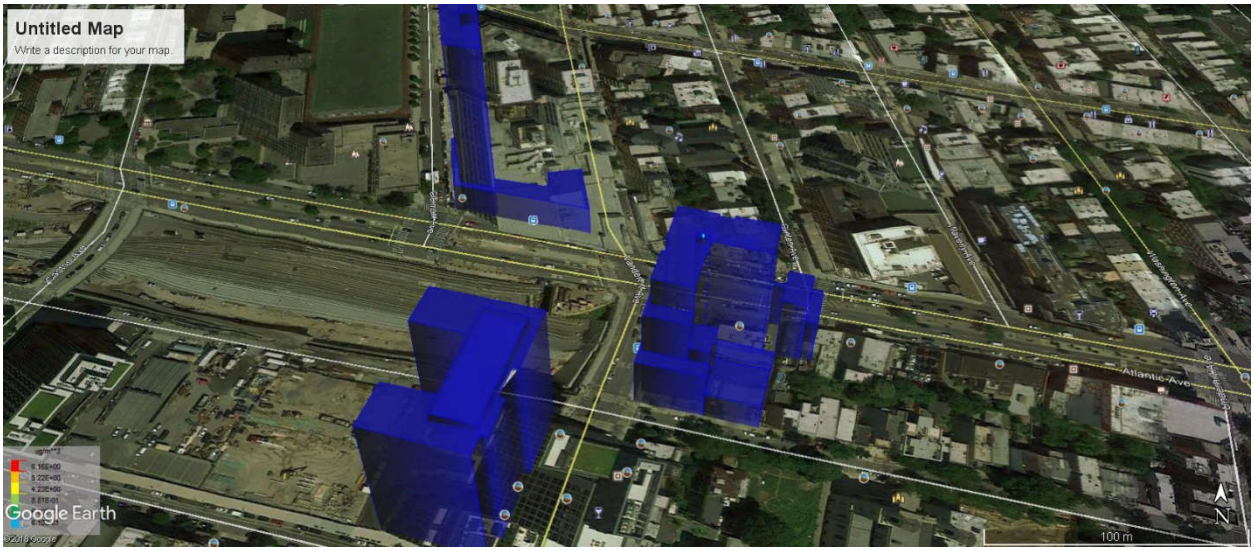
The result of the project-on-existing screening analysis is that the Proposed Development failed the screening analysis because the actual distances between it and both the existing and future buildings are less than the threshold distances determined from CEQR Figure 17-3, indicating that further (detailed) analysis is required.

Detailed Analysis

The detailed project-on-existing dispersion analysis was conducted using the latest version of the EPA's AERMOD dispersion model 8.1 (EPA version 18081). In accordance with *CEQR Technical Manual* guidance, analysis was conducted assuming stack tip downwash, urban dispersion surface roughness length, and elimination of calms. The latest five consecutive years of meteorological data were used. Analysis was conducted with and without downwash effects, and both results are reported.

A 3-D top view of the Proposed Development with existing and future proposed buildings that was generated by the AERMOD 3-D Analyst is shown in **Figure K-5** in Google coordinates**.**

Figure K-5: 3-D View of Proposed Development with Existing and Future Buildings in Google Coordinates



Emissions

Emission rates were estimated as follows:

- As the Proposed Development would be heated by natural gas, emission rates of NOx and $PM_{2.5}$ were calculated based on annual natural gas usage corresponding to the gsf of Site 2 building and EPA AP-42 emission factors for firing natural gas combustion in small boilers;
- $PM_{2.5}$ emissions from natural gas combustion accounted for both filterable and condensable particulate matter;
- Short-term NO_2 and $PM_{2.5}$ emission rates were estimated by accounting for seasonal variation in heat and hot water demand. Based on recent Department of City Planning (DCP) guidance, a seasonal emission factor was set as one for the winter season and 0.5 for each of the three other seasons of the year, and
- The natural gas fuel usage factor 59.1 cubic foot per square foot per year (cf/sf/year) was obtained from CEQR Table US1, Total Energy Consumption, Expenditures and Intensities, 2005, Part I: Housing Unit Characteristics and Energy Use Indicators for New York using conservative factor for residential uses.

Stack diameter and exit velocity were estimated based on values obtained from DEP's "CA Permit" database for the corresponding boiler size (i.e., rated heat input or million [MM] Btus per hour). Boiler size was estimated based on assumption that all fuel would be consumed during the 100-day (or 2,400-hour) heating season. The stack exit temperature was assumed to be 300°F (423°K), which is appropriate for building boilers.

Table K-3 provides pollutant emission rates from natural gas combustion in the boiler that were used in the dispersion analysis.

Table K-3: Pollutant Estimated Emission Rates

Building ID No.	Building	Stack [1]	Total Floor	$PM_{2.5}$ Emission Rate[2]		NO_2 Emission Rate[3]	
	Height	Height	Area	24-hour	Annual	One-hour	Annual
Proposed Development	feet	feet	gsf	g/sec	g/sec	g/sec	g/sec
	195	208	376,432	8.79E-03	2.41E-03	1.16E-01	3.17E-02

Notes:

[1] The stack is assumed to 3 feet above the 205 feet tall bulkhead

[2] $PM_{2.5}$ emission factor for natural gas combustion is 7.6 lb/10^6 cubic feet included filterable and condensable particulate matter (Filterable $PM_{2.5}$ =1.9 lb/10^6 cubic feet and condensable $PM_{2.5}$=5.7 lb/10^6 cubic feet (AP-42, Table 1.4-2).

[3] NOx emission factor for natural gas is 100 lb/10^6 cubic feet for uncontrolled boilers (AP-42, Table 1.4-1).

Meteorological Data

All analyses were conducted using the latest five consecutive years of meteorological data (2013-2017). Surface data was obtained from LaGuardia Airport and upper air data was obtained from Brookhaven station, New York. The data were processed by Trinity Consultants, Inc. using the current EPA AERMET and EPA procedures. These meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the five-year period.

Five years of meteorological data were combined into a single multiyear file to conduct 24-hour $PM_{2.5}$ and one-hour NO_2 analyses. The $PM_{2.5}$ special procedure, which is incorporated into AERMOD, calculates concentrations at each receptor for each year modeled, averages those concentrations across the number of years of data, and then selects the highest values across all receptors of the five-year averaged highest values.

Background Concentrations

Because the nearest monitoring station at Brooklyn JHS-126 does not collect hourly ozone and NO_2 background data, hourly NO_2 and hourly ozone background concentrations were developed from data collected at the closest monitoring station (Queens College #2) for three consecutive years (2015-2017) and compiled into AERMOD's required hourly emission (NO_2) and concentration (ozone) data format.

The maximum one-hour NO_2 background concentration from the Queens College #2 monitoring station is 59.7 parts per billion (ppb, or 112.2 $\mu g/m^3$), which is the three-year average of the 98th percentile of daily maximum one-hour concentrations. The annual NO_2 background concentration of 16.07 ppb or 30.3 $\mu g/m^3$ is the maximum annual average for 2015 through 2017.

The maximum annual $PM_{2.5}$ background concentration obtained from Brooklyn JHS-126 monitoring station for three years (2015-2017) is 8.2 $\mu g/m^3$.

Stack Location

Because the site roof plan includes a roof bulkhead, it was assumed that stack would be located on this bulkhead and the top of the stack would be, as per CEQR guidance, 3 feet above bulkhead (e.g., 208 feet tall). The stack on bulkhead, therefore, would be approximately the same height as the penthouse windows on the roof of the existing 550 Vanderbilt Avenue building but lower than the windows at the future proposed building at the 809 Atlantic Avenue. However, the 809 Atlantic Avenue building is 200 feet further from the Proposed Development while the 550 Vanderbilt Avenue building is about 115 feet from the Proposed Development. Therefore, the highest potential impacts could likely to occur at the 550 Vanderbilt Avenue building, particularly near the top of the penthouse.

Receptors

Windows on the 550 Vanderbilt Avenue building, including penthouse windows, and windows on the proposed future building at the 809 Atlantic Avenue, which were all assumed to be operable, were considered as sensitive receptor sites for this analysis. Receptors were placed around all faces of these buildings in ten-foot increments, extending from ground floor up to the level of the upper windows, which were assumed to be five feet below the roof of the building or penthouse. The upper window receptors on the penthouse of the 550 Vanderbilt Avenue building were located at a height of 208 feet. In order to assure that maximum impacts are estimated, about 2,600 receptors were placed on the 550 Vanderbilt Avenue building and 2,000 receptors were placed on the future planned building at 809 Atlantic Avenue (**Figures K-6** and **K-7**).

Figure K-6: Receptors on Existing 550 Vanderbilt Avenue Building and Future Building at 809 Atlantic Avenue (View 1)

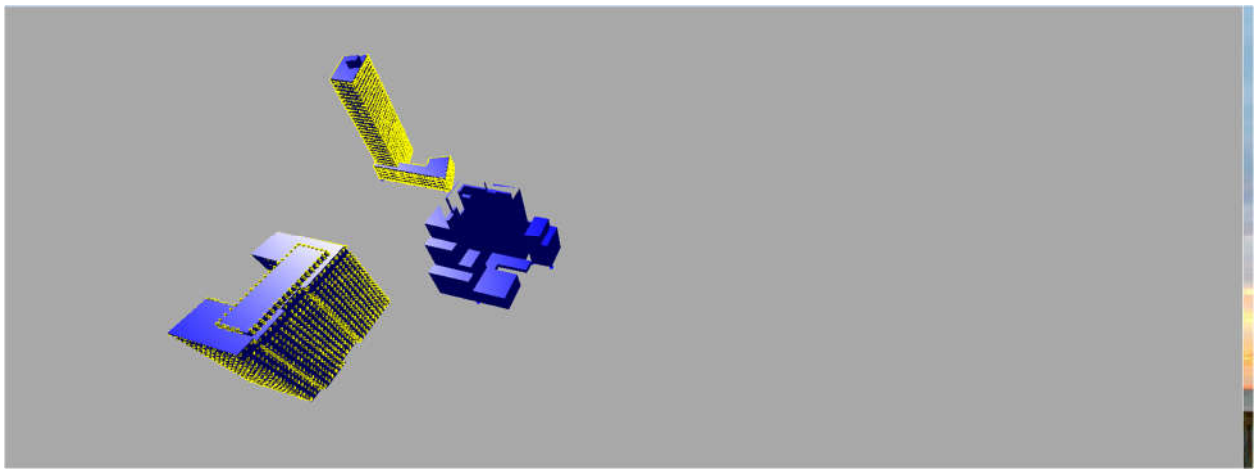
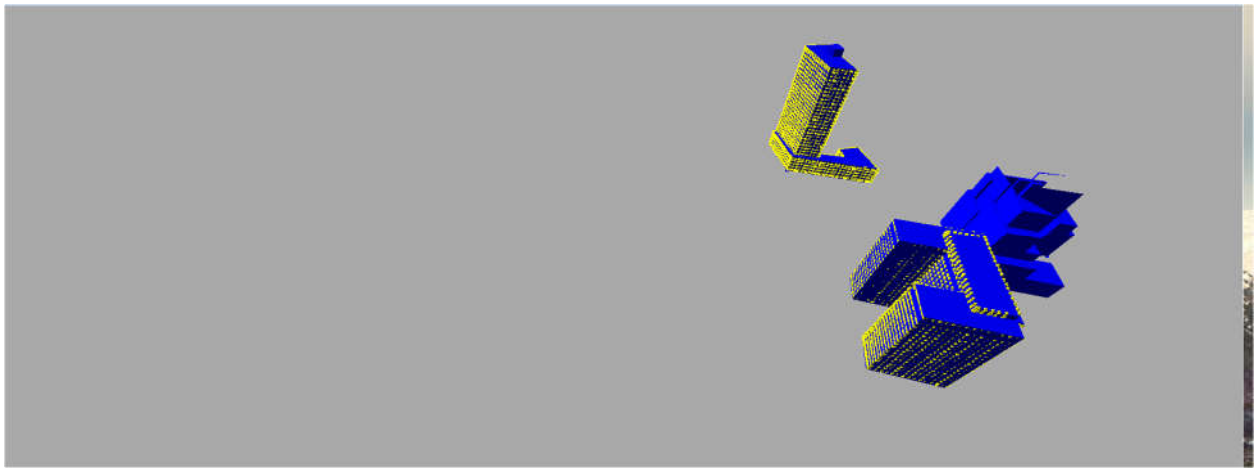


Figure K-7: Receptors on Existing 550 Vanderbilt Avenue Building and Future Building at 809 Atlantic Avenue (View 2)



Summary of Modeling Inputs

All modeling assumptions are provided in **Table K-4**.

Table K-4: Modeling Parameters

Model	AERMOD (EPA Version 18081)
Source Type	Point
Emission Sources and Receptor Coordinates	UTM NAD83 Datum and UTM Zone 18
Downwash Program	Building Profile Input Program (BPIP)
Surface Characteristics	Urban Area Option
Urban Surface Roughness Length	1
Population of the area (Brooklyn)	2.6 million (2017) with population density more than 750 people
Meteorological Data	Preprocessed by the AERMET meteorological preprocessor by Trinity Consultants, Inc. Yearly meteorological data for 2013-2017 were concatenated into single multiyear file for $PM_{2.5}$ and 1-hr NO2 modeling, as EPA recommended
Surface Meteorological Data	LaGuardia 2013-2017
Profile Meteorological Data	Brookhaven Station 2013-2017
$PM_{2.5}$ and 1-hr NO_2 Analyses	Special procedure incorporated into AERMOD where model calculates concentration at each receptor for each year modeled, averages those concentrations across the number of years of data, and then selects the highest across all receptors of the N-year averaged highest values
$PM_{2.5}$ and 1-hr NO_2 Background Concentration	Brooklyn JHS-126 and Queens College 2 monitoring station data for 2015-2017

Results of the HVAC Analysis

Results of the analysis are provided in **Tables K-5** and **K-6**. As shown, the maximum estimated 24-hour $PM_{2.5}$ impact is 3.22 ug/m^3, which is less than the 24-hour CEQR significant impact criteria of 7.7 ug/m^3. The estimated annual average $PM_{2.5}$ impact is 0.07 ug/m^3, which is less than the annual CEQR significant impact criteria of 0.3 ug/m^3. The maximum total 24-hour average concentration, which includes the maximum impact and a background concentration of 19.6 ug/m^3, is 22.3 ug/m^3, which is less than the 24-hour $PM_{2.5}$ NAAQS of 35 ug/m^3. The maximum total annual average concentration, which includes the maximum impact and a background concentration of 8.2 ug/m^3, is 8.3 ug/m^3, which is less than the annual $PM_{2.5}$ NAAQS of 12 ug/m^3. The highest 24-hour and annual impacts occur at 550 Vanderbilt Avenue building penthouse receptors. Twenty-four-hour $PM_{2.5}$ contour maps are shown on **Figures K-8** and **K-9**. The main plume impact area (red) is around the 550 Vanderbilt Avenue building.

Figure K-8: 24-hour $PM_{2.5}$ Contour Map Gridded Impact Area

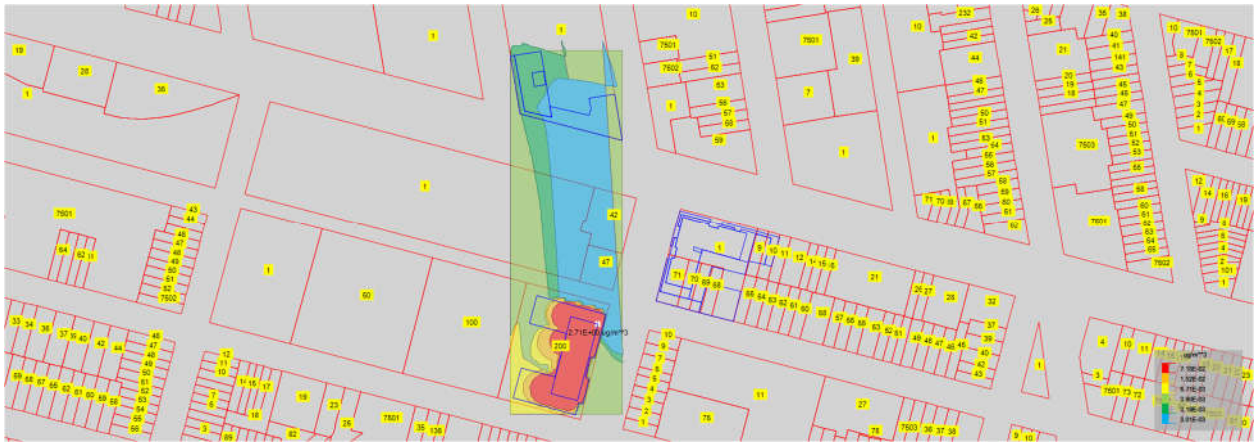
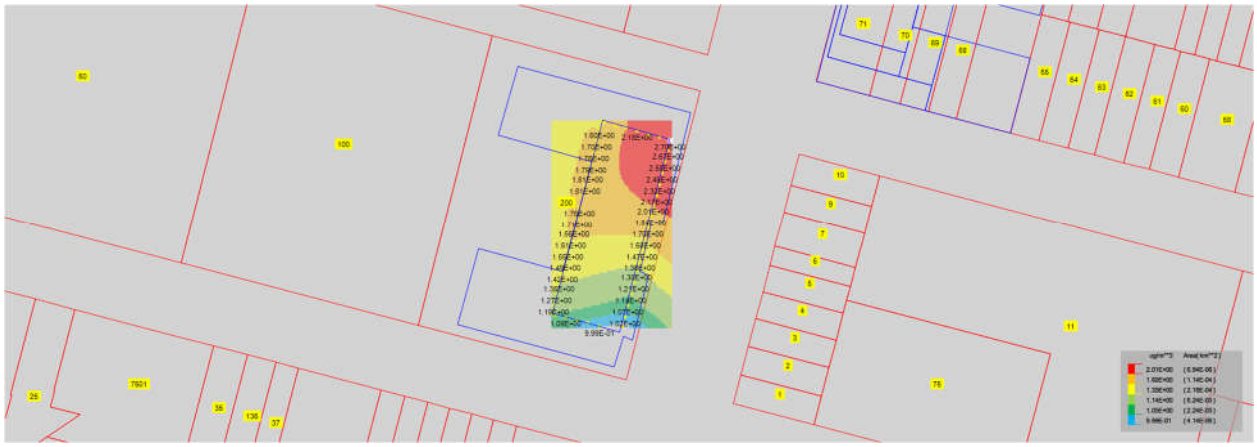


Figure K-9: 24-hour $PM_{2.5}$ Contour Map with Concentration Values



Therefore, $PM_{2.5}$ emissions from the Proposed Development HVAC system would not cause significant air quality impacts on either the existing 550 Vanderbilt Avenue building or the future proposed building at the 809 Atlantic Avenue. In addition, an analysis with alternative fuel oil No. 2 shows that no $PM_{2.5}$ exceedances of the CEQR significant impact thresholds would also occur if HVAC system would burn fuel oil No. 2 instead of natural gas. Therefore, no restriction on fuel use would be required for the Proposed Development's HVAC system. However, E-designations should be placed on the Proposed Development that would specify stack location and its height above the ground.

Table K-5: $PM_{2.5}$ Analysis Results

Site ID	Receptor Buildings	Maximum 24-hour Impact	Maximum Annual Impact	CEQR Significant Impact Criteria	
				24-hour	Annual
Proposed Development	Existing and Future Buildings	µg/m³	µg/m³	µg/m³	µg/m³
		3.22	0.07	7.7	0.3
		Total 24-hour Average Conc[1]	Annual Average Conc[2]	NAAQS	
				24-hour	Annual
		µg/m³	µg/m³	µg/m³	µg/m³
		22.3	8.3	35	12

1. Total $PM_{2.5}$ 24-hr concentration includes average impact of 2.7 ug/m³ and background concentrations of 19.6 ug/m³
2. Total $PM_{2.5}$ annual concentration Includes annual average impact of 0.07 ug/m3 and background concentrations of 8.2 ug/m³

Table K-6: NO_2 Analysis Results

Site ID	Receptor Building	Total 1-hour NO_2 Conc.[1]	Total Annual NO_2 Conc.[2]	NAAQS 1-hr/Annual
		µg/m³	µg/m³	µg/m³
Proposed Development	Existing and Future Buildings	179.2	31.0	188/100

1. Total 1-hour NO_2 concentration includes impact of 67.1 ug/m3 and background concentrations of 112.2 ug/m3
2. Total NO_2 annual concentration Includes impact of 0.73 ug/m3 and background concentrations of 30.3 ug/m3

The conservative Tier 1 NO_2 analysis was sufficient to demonstrate compliance with the 1-hour NO_2 NAAQS and, as such, a Tier3 analysis was not required. The maximum estimated 1-hour NO_2 concentration with the Tier 1 analysis (179.2 ug/m³) is less than the 1-hour NO_2 NAAQS of 188 ug/m³; the maximum annual NO_2 concentration, including the background value, is less than the annual NO_2 NAAQS of 100 ug/m³. Therefore, NO_2 emissions from the Proposed Development HVAC system would not cause significant impact on existing or future buildings (project-on-existing impact).

Summary of HVAC analysis with and without downwash effect is provided in **Table K-7**.

Table K-7: Summary of the HVAC Analysis Results (ug/m³)

Pollutant	Impact[1]	Background Conc.	Total Conc.	Evaluation Criteria	
				CEQR	NAAQS
$PM_{2.5}$					
24-hr $PM_{2.5}$	0.74/3.2	-	-	7.7	
	0.51/2.7	19.6	22.3	--	35
Annual $PM_{2.5}$	0.03/0.07	-	-	0.3	
	0.07	8.2	8.3	--	12
NO_2					
1-hr NO_2	16.9/67.0	112.2	179.2	--	188
Annual NO_2	0.26/0.73	30.3	31.0	--	100

Notes:

1. Modeled concentrations are shown with/without downwash effects

(E) Designation

A roof-top stack requirement should be placed on the Proposed Development at 840 Atlantic Avenue that would specify stack location and its height above the ground. This would ensure that the development HVAC system emissions would not cause exceedances of the CEQR $PM_{2.5}$ significant impact criteria and the 24-hour/annual $PM_{2.5}$ NAAQS or a violation of the 1-hour/annual NO_2 NAAQS and would therefore have no significant adverse air quality impacts.

Any future construction at the 840 Atlantic Avenue site (Block 1122, Lots 1, 9, 10, 68-71) would be required to comply with the following (E) designation (E-604):

Block 1122, Lots 1, 9, 10, 68, 69, 70, 71: Any new residential, commercial and/or community facility development on the above-referenced property must exclusively use natural gas as the type of fuel for heating, ventilating and air conditioning (HVAC) systems and hot water equipment, and must ensure the HVAC system and hot water equipment stack is located within Lot 1 at the highest tier and at least 208 feet above grade, at least 24 feet from the southern lot line facing Pacific Street, at least 60 feet from the western lot line facing Vanderbilt Ave, and at least 74 feet from the northern lot line facing Atlantic Ave, to avoid any potential significant adverse air quality impacts.

Summary of HVAC Results

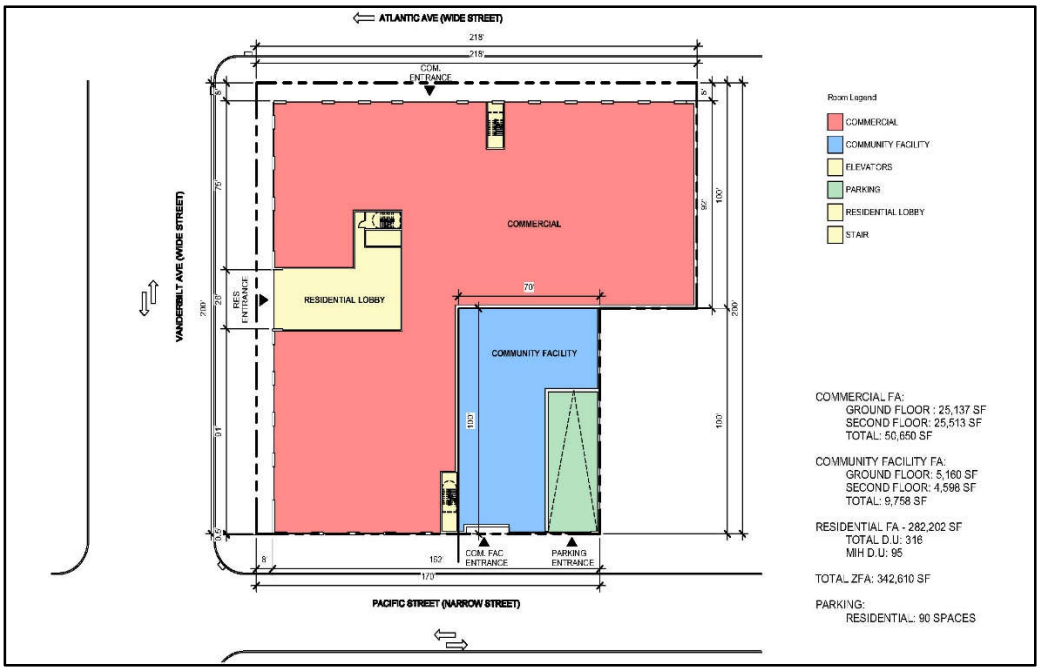
With the required (E) Designation for stack location and height above the roof, emissions from the HVAC system of the Proposed Development would not cause any significant impacts at the existing and future buildings within 400 feet of the Development Site.

III. PARKING GARAGE ANALYSIS

The Proposed Development would include a 90-space, below grade, parking garage. Emissions from the vehicles using the proposed garage could potentially affect pollutant levels at nearby sensitive land uses. As such, an analysis was conducted to determine whether the potential air quality impacts of garage-generated emissions would be significant is described below.

The garage would contain approximately 31,500 gross square feet (gsf) of parking area. Based on the proposed ground floor plan, that vehicles utilizing the parking garage would enter and exit the garage from a below-grade ramp along Pacific Street, which is shown on **Figure K-10**. For the conservative analysis purposes, it was assumed that garage exhaust vent would be located on the side of the building facing Pacific Street. The garage parameters (lengths, widths, and ramp length) were estimated based on plan dimensions.

Figure K-10: Proposed Development Ground Floor Plan



Traffic Data

Traffic data on weekday and weekend parking accumulation included vehicular trips in and out associated with retail, residential, community facility, and public demand uses. The data for weekday period (i.e., the time period with the highest numbers) are provided in **Table K-8**.

Table K-8: Parking Garage Weekday Accumulation Data

Time	Vehicles			Accumulation
	In	Out	Total	
12-1AM	1	0	1	131
1-2 AM	1	0	1	132
2-3 AM	0	0	0	132
3-4 AM	0	0	0	132
4-5 AM	0	0	0	132
5-6 AM	1	2	3	131
6-7 AM	1	7	8	125
7-8 AM	2	10	12	117
8-9 AM	23	24	47	117
9-10AM	17	17	34	116
10-11 AM	22	18	40	120
11-12 AM	27	28	55	119
12-1 PM	52	54	106	117
1-2 PM	56	54	110	119
2-3 PM	29	33	62	115
3-4 PM	32	24	56	123
4-5 PM	36	26	62	133
5-6 PM	43	37	80	139
6-7 PM	21	28	49	132
7-8 PM	13	14	27	131
8-9 PM	8	8	16	131
9-10 PM	3	3	6	131
10-11 PM	3	2	5	131
11-12 PM	2	2	4	130
24-hr Average	16	16		
8-hr Average	37	34		

The 24-hour average number of vehicles entering and leaving garage was used for evaluating 24-hour $PM_{2.5}$ impacts, and the 8-hour highest average number of vehicles entering and leaving garage was used for evaluating 8-hour CO impacts. **Table K-8** provides the hourly and average number of incoming and outgoing vehicles for the 24-hour and 8-hour time periods. The average 24-hour number of 16 vehicles in and 16 vehicles out was used for $PM_{2.5}$ analysis and the highest average 8-hour number of 37 vehicles in and 34 vehicles out was used for CO analysis.

Traffic data (peak hour volumes) on Pacific Street are available for both AM and PM time periods and for midday (when school is open). The highest number of cars/trucks estimated for any time periods were used in the analysis as 138 (cars), 33 light-duty and 6 heavy-duty trucks. All truck numbers were converted to passenger car equivalent using the conservative passenger-car equivalent (PCE) of 3.5, which resulted in 136 additional cars. The total hourly volume of maximum 274 cars were modeled using the EPA AERMOD dispersion model to estimate contributions from on-street traffic.

Methodology

The pollutants of concern for parking facilities are carbon monoxide (CO) and particulate matter smaller than 2.5 microns ($PM_{2.5}$). This analysis was conducted following guidelines provided in the 2020 *CEQR Technical Manual* Air Quality Appendix for parking facilities.

The proposed garage was assumed to be enclosed with mechanical ventilation. To estimate pollutant concentrations, the garage's exhaust vent(s) was analyzed as a "virtual point source" using the computational procedure provided in EPA's Workbook of Atmospheric Dispersion Estimates (AP-26), as referenced in the *CEQR Technical Manual* on page 17-30. This methodology estimates concentrations at various distances from the vent (using appropriate initial horizontal and vertical dispersion coefficients) assuming that the concentrations within the garage are equal to the concentrations in the vent exhaust.

In accordance with CEQR guidance, pollutant concentrations were estimated at locations on the near and far pedestrian sidewalks to ensure that the maximum cumulative effects from on-street traffic and garage emissions are estimated. Concentrations were also estimated at a window (receptors) located directly above the vent.

Contributions from on-street CO and $PM_{2.5}$ vehicular emissions at these receptor locations were calculated through dispersion modeling analyses using EPA's AERMOD dispersion model, which is currently recommended by EPA for mobile source (intersection or highway) modeling, and these values were added to garage-generated impacts and appropriate background levels to estimate the total cumulative pollutant concentrations. Pollutant concentrations within the garage were calculated assuming a minimum ventilation rate, as per New York City Building Code requirements, of one cubic foot per minute of fresh air per gross square foot of garage area.

To determine compliance with the 8-hour CO NAAQS and the 24-hour $PM_{2.5}$ CEQR significant incremental impact criteria, maximum CO concentrations were predicted for an 8-hour averaging period and maximum $PM_{2.5}$ concentrations were predicted for the 24-hour time period.

As provided in the HVAC analysis section, the significant 24-hour $PM_{2.5}$ impact criterion was estimated to be 7.7 $\mu g/m^3$. This incremental value was used as the threshold level to determine whether the $PM_{2.5}$ garage emissions combined with on-site mobile source emissions could cause exceedances of CEQR $PM_{2.5}$ significant impact criteria.

Emission Factors

The EPA MOVES2014 emission factor algorithm was used to estimate CO and $PM_{2.5}$ emission factors for entering, exiting, and idling vehicles within the garage, and vehicles travelling on nearby streets. Vehicles exiting the garage were assumed to idle for one minute before departing, and the speed within the garage was assumed to be 5 miles per hour (mph). Speeds on the nearby streets were assumed to be 25 mph.

Emission factors estimated by the MOVES model for moving and idling vehicles were used to estimate CO and $PM_{2.5}$ emission rates and model combined garage-generated and on-street traffic emissions with the AERMOD dispersion model.

Modeling inputs for inspection/maintenance, fuel supply and formulation, age distribution, meteorology, etc., were provided by the DCP for the borough of Brooklyn. Running exhaust and crankcase running exhaust for $PM_{2.5}$, including brake and tire wear emissions, were all included in the emission factors estimates. Fugitive dust (i.e., from the re-entrainment of particles off the ground) emission factors for $PM_{2.5}$ were added to the emission factors calculated by MOVES.

Fugitive dust was estimated using equations from Section 13.2.1-3 of EPA's AP-42 for roadways with more than 5,000 vehicles a day, which is applicable for roadways in the vicinity of the garage, which can be classified as principal or minor arterials. The formulas are based on an average fleet weight, which varies according to the vehicular mix for a given roadway, and a silt loading factor. A silt loading factor of 0.4 gram per square meter, applicable for principal and minor urban arterials roads, was used, as recommended by the *CEQR Technical Manual*.

Because the garage is assumed to be fully operational by 2023, the 2023 year was used to generate pollutant emission factors with MOVES model. The MOVES model was run for the peak PM period of the 2023 year.

Post-processing was conducted using the MOVES MySQL Workbench data management software application to extract CO and $PM_{2.5}$ emission factors from MOVES output for each link included in the analysis. These emission factors, together with traffic hourly volumes on each link, were used to model nearby roadway links in the AERMOD dispersion analysis.

Dispersion Analysis

The AERMOD dispersion model was used to estimate CO and $PM_{2.5}$ contributions from the vehicular traffic on the nearby roadway links as components of the total predicted pollutant concentrations. AERMOD is currently recommended by EPA as preferred model to estimate concentration from vehicular traffic at intersections, highways, by simulating them as a line or of volume sources. The advantage of using AERMOD over the previously used model (CAL3QHCR) for mobile source modeling is associated with the ability to use five (5) consecutive years on meteorological data in one modeling run and obtain maximum concentrations over the 5-years period.

Based on DCP recommendations, roadway links near garage on Pacific Street were modeled using the EPA area source algorithm represented by the array of adjacent area sources. Based on the DCP recommendations, a release height of 0.152 meters for exhaust tailpipe and an initial dispersion coefficient of 1.2 meters (as typical for light-duty vehicles) were used. Inputs to the model included emission rates in grams per second per square meter of each adjacent area, link coordinates, and initial dispersion parameters. Four adjacent area sources were simulated to represent roadway links along Pacific Street with the highest contributions from background traffic.

Emission rates for each pollutant were estimated using MOVES idling and moving emissions factors, length of the roadway link, and total number of vehicles traveling on each link. The same meteorological data which were used in the HVAC analysis from LaGuardia Airport for 2013-2017 years were used for this analysis.

Concentrations were estimated at the near garage vent along Pacific Street and a receptor located across the street at the middle of the far sidewalk. Concentrations at the window receptors assumed to be above the exhaust vent were also estimated. The vent was assumed to be 12 feet above the ground and the window above the vent was assumed to be 5 feet higher than the vent (17 feet). A pedestrian on the adjacent sidewalk was assumed to be 5 feet from the garage vent while a pedestrian standing on the far sidewalk across Pacific Street was approximately 58 feet from the vent.

The analysis for estimating pollutant concentrations was conducted based on the computational spreadsheet procedure provided in the *CEQR Technical Manual* that include garage dimensions and total parking area, vent and windows height(s), receptor distances from the vent, number of vehicles entering and exiting garage, emission factors for moving and idling vehicles, and pre-tabulated dispersion parameters to estimate concentration at the near and far sidewalks and windows above the vent. 8-hour CO and 24-hour $PM_{2.5}$ concentrations from the on-street sources were added to garage impacts on far sidewalk receptors and the total cumulative CO and $PM_{2.5}$ concentrations were estimated by adding together the contributions from the garage exhaust vent, on-street sources, and background levels.

The maximum estimated total 8-hour CO concentration was compared to the 8-hour CO NAAQS of 9 ppm and the *CEQR de minimis* criteria, and the maximum estimated 24-hour $PM_{2.5}$ impact was compared to the CEQR $PM_{2.5}$ significant impact threshold of 7.7 ug/m^3 and, with added background concentration, to the $PM_{2.5}$ 24-hour NAAQS of 35 ug/m^3.

All modeling inputs and emission factors determined by the MOVES model, AERMOD inputs and estimated $PM_{2.5}$ concentration as well as spreadsheets with estimated CO and $PM_{2.5}$ concentrations within the garage; at windows above the vent; near and far sidewalks, and on-street traffic as well as the cumulative pollutant concentrations at these locations and comparison to the NAAQS and *de minimis* criteria for CO and the CEQR threshold significant criteria for $PM_{2.5}$, are provided in the back-up documentation for this project.

Results of Garage Analysis

The results of the garage analyses are summarized in **Tables K-9** and **K-10**. As shown, the maximum estimated total 8-hour CO concentrations, including the background concentration, for the near sidewalk, the far sidewalk, and the window above the vent are all less than the CEQR *de minimis* criteria and the 8-hour CO NAAQS of 9 ppm. The maximum 24-hour $PM_{2.5}$ impact and total concentration are less than the CEQR significant impact criterion and respective NAAQS. As such, the proposed garage impact together with on-street mobile source emissions would not cause a significant adverse air quality impact.

The result of the garage analysis is that the garage emissions from the Proposed Development, together with on-street mobile source emissions, would not result in significant adverse air quality impacts.

Table K-9: Estimated CO 1-hour/8-hour Concentrations from Garage and On-Street Traffic

	Near Sidewalk	**Far Sidewalk**	**Window Above**	**Near Sidewalk**	**Far Sidewalk**	**Window Above**
Averaging Period	**1-hour**			**8-hour**		
Distance from Vent (feet)	5	58	5	5	58	5
Garage CO (ppm)	0.05	0.03	0.05	0.03	0.02	0.04
Line Source (ppm)		0.12			0.08	
Garage impact (ppm)	0.05	0.15	0.05	0.03	0.1	0.04
NYC *de minimis* (ug/m^3)	-	-	-	3.9	3.9	3.9
Significant Garage Impact?	**No**	**No**	**No**	**No**	**No**	**No**
Background Value (ppm)	1.7	1.7	1.7	1.2	1.2	1.2
Total CO Concentration (ppm)	1.8	1.9	1.8	1.2	1.3	1.2
NAAQS, CO (ppm)	35	35	35	9	9	9
Significant Impact?	**No**	**No**	**No**	**No**	**No**	**No**

Table K-10: Estimated $PM_{2.5}$ 24-hour/Annual Concentrations from Garage and On-Street Traffic

	Near Sidewalk	Far Sidewalk	Window Above	Near Sidewalk	Far Sidewalk	Window Above
Averaging Period	**24-hour**			**Annual**		
Distance from Vent (feet)	5	58	5	5	58	5
Garage $PM_{2.5}$ (ug/m^3)	0.17	0.10	0.16	0.00000003	0.02	0.03
Line Source (ug/m^3)	-	3.63	-		0.04	
Garage impact (ug/m^3)	0.17	3.74	0.16	0.00000003	0.06	0.03
CEQR Significant Impact	7.7	7.7	7.7	0.3	0.3	0.3
Significant Garage Impact?	**No**	**No**	**No**	**No**	**No**	**No**
Background Value (ug/m^3)	19.6	19.6	19.6	8.2	8.2	8.2
Total $PM_{2.5}$ Concentration	19.8	23.3	19.8	8.2	8.3	8.2
Annual NAAQS, $PM_{2.5}$ (ug/m^3)	35	35	35	12	12	12
Exceeds NAAQS?	**No**	**No**	**No**	**No**	**No**	**No**

IV. CONCLUSION

The result of the HVAC and garage emissions analyses associated with the Proposed Development at 840 Atlantic Avenue is that no adverse significant impacts on the local air quality would occur as a result of the Proposed Actions.

I. INTRODUCTION

This attachment assesses the potential for the Proposed Actions and subsequent reasonable worst-case development scenario (RWCDS) to result in significant adverse noise impacts. The Applicant, Vanderbilt Atlantic Holdings LLC, is seeking a zoning map amendment and a zoning text amendment (collectively, the "Proposed Actions") to facilitate the development of a new 18-story (195-feet tall) mixed-use building (the "Proposed Project") in the Prospect Heights neighborhood of Brooklyn Community District 8.

As discussed in **Attachment J, "Transportation,"** the Proposed Actions are expected to change traffic volumes in the general vicinity of the Development Site. As such, a mobile source noise analysis was conducted under *City Environmental Quality Review* (CEQR) *Technical Manual* guidance to determine whether there are any noise-sensitive locations where project-generated traffic would have the potential to result in significant adverse noise impacts. Additionally, as the Proposed Actions would introduce new noise-sensitive uses within the Development Site, an analysis was conducted in order to determine the level of building attenuation required to ensure that future interior noise levels would satisfy applicable noise criteria. Based on a field survey of land uses in the area, it was determined that no stationary noise sources contribute significantly to noise levels in the area, and a stationary noise source analysis would not be necessary.

II. PRINCIPAL CONCLUSIONS

Noise from the traffic generated by the Proposed Actions would not cause significant adverse noise impacts, as the noise level increases would fall well below the applicable *CEQR Technical Manual* significant adverse impact threshold (3.0 dBA).

Based on the noise analysis presented herein, the maximum predicted L_{10} noise levels adjacent to the Development Site's northern (Atlantic Avenue), western (Vanderbilt Avenue), and southern (Pacific Street) frontages are expected to be 73.7 dBA, 72.0 dBA, and 70.8 dBA, respectively. As the maximum predicted With-Action noise level along Atlantic Avenue would fall in the Marginally Unacceptable (II) CEQR Noise Exposure category, and the maximum predicted With-Action noise levels along Vanderbilt Avenue and Pacific Street would fall in the Marginally Unacceptable (I) CEQR Noise Exposure category, a minimum 31 dBA of composite window/wall attenuation on the facades facing Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Atlantic Avenue and the facades facing Vanderbilt Avenue within 50 feet of Atlantic Avenue and 28 dBA attenuation on the facades facing Pacific Street and the facades facing Vanderbilt Avenue beyond 50 feet of Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Pacific Street to maintain an interior noise level not greater than 45 dBA for residential and community facility uses. Future commercial office uses on the Development Site would be required to provide an attenuation rating of five dBA less than the residential/community facility requirement on these three frontages.

The composite window/wall noise attenuations described above would be required through the assignment of an (E) designation (E-XXX) for noise at the Development Site (Brooklyn Block 1122, Lots 1,

9, 10, 68, 69, 70, and 71) in conjunction with the Proposed Actions. With implementation of the attenuation levels outlined in Section VIII, "Building Attenuation Requirements," the Proposed Project would provide sufficient attenuation to achieve *CEQR Technical Manual* interior noise level guidelines of 45 dBA for residential/community facility uses and 50 dBA for commercial office uses. Therefore, the Proposed Actions and subsequent Proposed Project would not result in any significant adverse noise impacts.

III. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well documented. If sufficiently loud, noise may adversely affect people in several ways. For example, noise may interfere with human activities such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Although it is possible to study these effects on people on an average or statistical basis, it must be remembered that all the stated effects of noise on people vary greatly with the individual. Several noise scales and rating methods are used to quantify the effects of noise on people. These scales and methods consider factors such as loudness, duration, time of occurrence, and changes in noise level with time.

"A"-Weighted Sound Levels (dBA)

Noise is typically measured in units called decibels (dB), which are ten times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. Frequency is the rate at which sound pressures fluctuate in a cycle over a given quantity of time and is measured in Hertz (Hz), where one Hz equals one cycle per second. Frequency defines sound in terms of pitch components. In the measurement system, one of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network (known as A-weighting) that simulates the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used due to its widespread recognition and its close correlation to perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in **Table L-1**.

Table L-1: Common Noise Levels

Sound Source	(dBA)
Air Raid Siren at 50 feet	120
Maximum Levels at Rock Concerts (Rear Seats)	110
On Platform by Passing Subway Train	100
On Sidewalk by Passing Heavy Truck or Bus	90
On Sidewalk by Typical Highway	80
On Sidewalk by Passing Automobiles with Mufflers	70
Typical Urban Area	60-70
Typical Suburban Area	50-60
Quiet Suburban Area at Night	40-50
Typical Rural Area at Night	30-40
Soft Whisper at 5 meters	30
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0

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

Community Response to Changes in Noise Levels

Table L-2 shows the average ability of an individual to perceive changes in noise levels. Generally, changes in noise levels of less than 3 dBA are barely perceptible to most listeners. However, as shown in **Table L-2**, changes in noise levels of 5 dBA are readily noticeable. Changes in noise levels of 10 dBA are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimations of an individual's probable perception of changes in noise levels.

Table L-2: Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Beranek and Neuman, Inc., *Fundamentals and Abatement of Highway Traffic Noise* (Report No. PB-222-703). Prepared for Federal Highway Administration (FHA), June 1973.

Noise Descriptors Used in Impact Assessment

Because the sound pressure level unit (dBA) describes a noise level at just one moment in time and very few noises are constant, other ways of describing noise over extended periods of time have been developed. One way of describing fluctuating sound is to describe the fluctuating noise 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., one hour [denoted by $L_{eq(1)}$] or 24 hours [denoted as $L_{eq(24)}$]), 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 sometimes used to indicate noise levels that are exceeded one, ten, fifty, ninety, and x percent of the time, respectively. Discrete event peak levels are given as L_1 levels. L_{eq} is used in the prediction of future noise levels by adding the contributions from new sources of noise (i.e., increases in traffic volumes) to the existing levels and in relating annoyance to increases in noise levels.

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 ten 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}. The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at all receptor locations.

For the purposes of this analysis, the maximum one-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor used in the *CEQR Technical Manual* for noise impact evaluation and is used to provide an indication of highest expected sound levels; $L_{10(1)}$ is the noise descriptor used in the *CEQR Technical Manual* for building

attenuation. Hourly statistical noise levels (particularly L_{10} and L_{eq} levels) were used to characterize the relevant noise sources and their relative importance at each receptor location.

The Day-Night sound level (L_{dn}) describes a receptor's cumulative noise exposure from all events over 24 hours. It may be thought of as a noise dose totaled after increasing all nighttime L_{eq} noise levels between 10 PM and 7 AM by ten dBA to reflect the greater intrusiveness of noise experienced during these hours. Pursuant to Federal Transit Authority (FTA) noise impact analysis methodology, the L_{dn} is adopted to assess noise generated by trains.[1] However, because the L_{dn} descriptor tends to average out high hourly values over 24 hours, the *CEQR Technical Manual* recommends that the L_{eq} descriptor be used for purposes of impact analysis.

Applicable Noise Codes and Impact Criteria

New York City Noise Code

The New York City Noise Control Code, as amended in December 2005, contains prohibitions regarding unreasonable noise and specific noise standards, including plainly audible criteria for specific noise sources. In addition, the amended code specifies that no sound source operating in connection with any commercial or business enterprise may exceed the decibel levels in the designated octave bands at specified receiving properties.

CEQR Technical Manual Noise Standards

The New York City Department of Environmental Protection (DEP) has set external noise exposure standards based on L_{10} noise levels. These standards are shown in **Table L-3**.

Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. These standards are based on maintaining an interior noise level for the worst-case hour L_{10} of less than or equal to 45 dBA. Attenuation requirements are shown in **Table L-4**.

Impact Criteria

In addition, the *CEQR Technical Manual* uses the following criteria to determine whether a proposed residential and/or community facility development would be subject to a significant adverse noise impact:

- If the No-Action condition noise levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period, the threshold for a significant impact would be an increase of at least 5 dBA $L_{eq(1)}$ (for the 5 dBA threshold to be valid, the resultant With-Action condition noise level would have to be equal to or less than 65 dBA);
- If the No-Action condition noise level is equal to or greater than 62 dBA $L_{eq(1)}$ or if the analysis period is a nighttime period (defined under CEQR standards as being between 10 PM and 7 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$;
- If the No-Action condition noise level is 61 dBA $L_{eq(1)}$, the maximum incremental increase would be 4 dBA, since an increase higher than this would result in a noise level higher than the 65 dBA $L_{eq(1)}$ threshold.

[1] "Transit Noise and Vibration Impact Assessment", 2006, FTA, Office of Planning and Environment.

Table L-3: Noise Exposure Guidelines for Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---------- Ldn $\leq$ 60 dBA ----------		---------- 60 < Ldn $\leq$ 65 dBA ----------		(1) 65 < Ldn $\leq$ 70 dBA, (II) 70 $\leq$ Ldn		---------- Ldn $\leq$ 75 dBA ----------
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		55 < $L_{10} \leq$ 65 dBA		65 < $L_{10} \leq$ 80 dBA		L_{10} > 80 dBA	
3. Residence, residential hotel or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		65 < $L_{10} \leq$ 70 dBA		70 < $L_{10} \leq$ 80 dBA		L_{10} > 80 dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		55 < $L_{10} \leq$ 70 dBA		70 < $L_{10} \leq$ 80 dBA		L_{10} > 80 dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Source: DEP (adopted policy 1983).

Notes:

In addition, any new activity shall not increase the ambient noise level by 3 dBA or more;

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.

[3] One may use the Federal Aviation Administration- (FAA-) approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved Integrated Noise Model (INM) Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Table L-4: Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise level with Proposed Actions	70<L_{10}≤73	73<L_{10}≤76	76<L_{10}≤78	78<L_{10}≤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)

Sources: DEP; *CEQR Technical Manual*

Notes:

[A] The above composite window-wall attenuation values are for residential dwellings and community facility development. Commercial office spaces and meeting rooms would be 5 dBA less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

[B] Required attenuation values increase by one dBA increments for L_{10} values greater than 80 dBA.

IV. NOISE PREDICTION METHODOLOGY

Future noise levels resulting from traffic were calculated with a proportional modeling technique used as a screening tool to estimate changes in noise levels. The proportional modeling technique is an analysis methodology recommended for analysis purposes in the *CEQR Technical Manual*.

Proportional Modeling

Proportional modeling was used to determine No-Action and With-Action noise levels along the Development Site's three street frontages, as discussed in more detail below. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels (where traffic is the dominant noise source) is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No-Action and With-Action noise levels. Vehicular traffic volumes (counted during the noise recording), are converted into passenger car equivalent (PCE) values, for which one medium-duty truck (defined as vehicles with two axles and six tires having a gross weight of between 9,900 and 26,400 pounds[2]) is assumed to generate the noise equivalent of 13 cars, one heavy-duty truck (defined as vehicles with three or more axles having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles having two or three axles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

FNA NL = 10 log (NA PCE/E PCE) + E NL
where:
FNA NL = Future No-Action Noise Level
NA PCE = No-Action PCEs
E PCE = Existing PCEs
E NL = Existing Noise Level

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

CEQR background growth rates were used to calculate the No-Action PCE values, and the With-Action traffic increments were used to calculate the With-Action PCE values.

[2] The State of New York (DOT and DMV) defines school buses as having a gross vehicle weighting rate (GVWR) of between 10,000 and 36,000 pounds, depending on the class of bus (e.g., "A," "B," "C," or "D"). The most common bus types utilized throughout City are, but not limited to, Types B and C, which typically have two axles and six tires, school buses included in the proportional modeling were classified "medium trucks" for the mobile source noise analysis.

V. EXISTING CONDITIONS

The Applicant-owned Development Site at 840 Atlantic Avenue (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71) measures 38,800 square feet in lot area and has approximately 218 feet of frontage along the south side of Atlantic Avenue, approximately 200 feet of frontage along the east side of Vanderbilt Avenue, and approximately 170 feet of frontage along the north side of Pacific Street.

Selection of Noise Monitoring/Receptor Locations

To collect existing baseline volumes at the Development Site, existing noise levels were measured at three locations. Receptor 1 was located on the south side of Atlantic Avenue along the Development Site's northern frontage to measure noise resulting from traffic along Atlantic Avenue. Receptor 2 was located on the east side of Vanderbilt Avenue along the Development Site's western frontage to measure noise resulting from traffic along Vanderbilt Avenue. Receptor 3 was located on the north side of Pacific Street along the Development Site's southern frontage to measure noise resulting from traffic along Pacific Street. For reference, the noise monitoring receptor locations are identified in **Figure L-1**.

Noise Monitoring

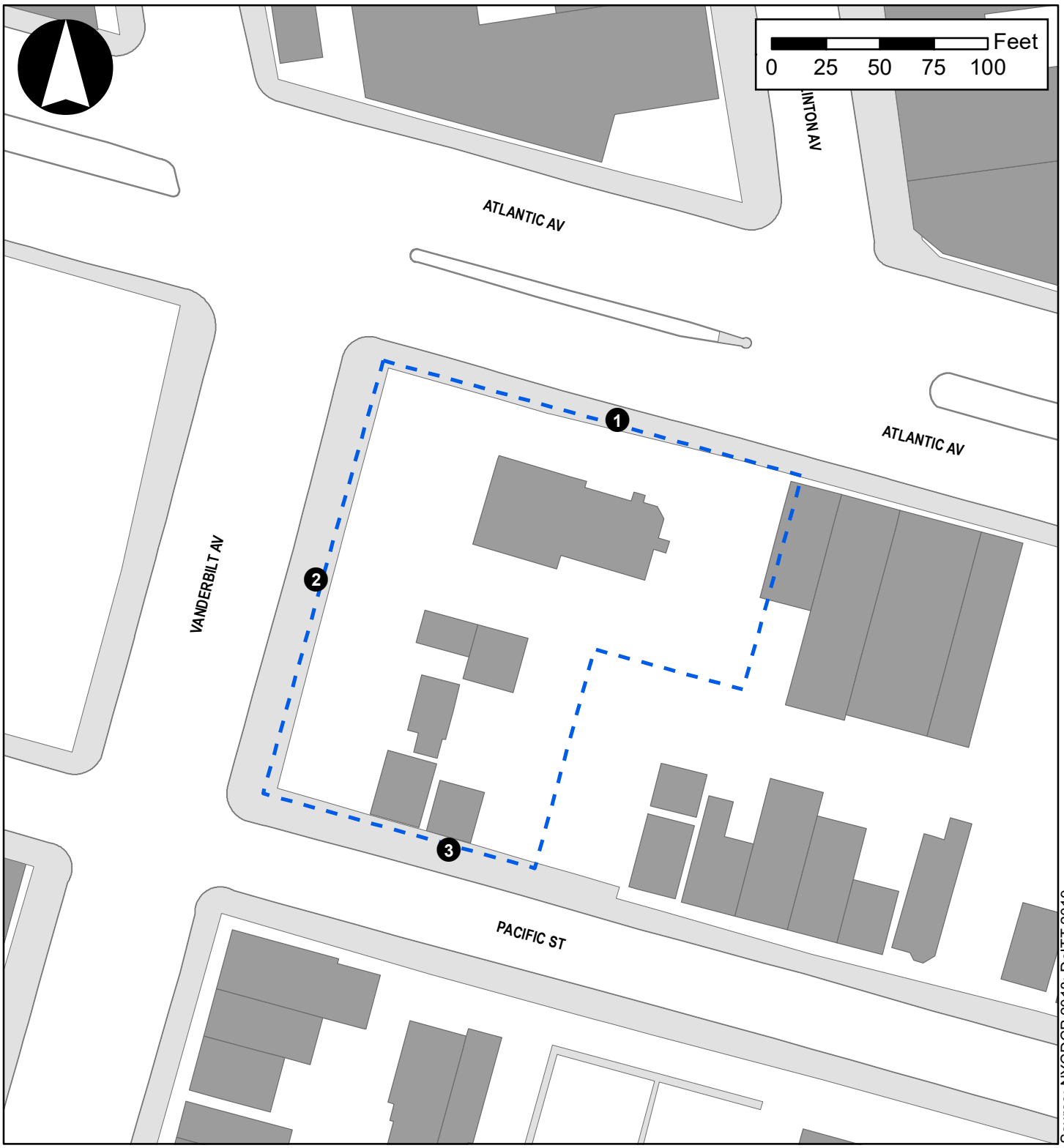
Noise monitoring was carried out on Tuesday April 16, 2019 and Tuesday May 7, 2019[3]. On April 16, 2019, the weather was sunny with temperatures in the mid-40s to mid-60s and an average wind speed of 10 miles per hour. On May 7, 2019, the weather was sunny with temperatures in the mid-60s and an average wind speed of six miles per hour. Twenty-minute spot measurements of existing noise levels were performed at the receptor locations for each of the three noise analysis periods – weekday AM peak hour (8 AM to 9 AM), weekday midday (MD) peak hour (12 PM to 1 PM), and weekday PM peak hour (5 PM to 6 PM) – to establish existing noise levels. Additional noise measurements were performed at the receptor locations during the school dismissal/bus departure (School PM) peak period (2:30 PM to 3:30 PM) to determine whether noise levels were higher during this period than during the other standard weekday peak periods. For the purpose of this analysis, during the noise recordings, vehicles were counted and classified.

Equipment Used During Noise Monitoring

The instrumentation used for the measurements was a Brüel & Kjær Type 4189 ½-inch microphone connected to a Brüel & Kjær Model 2250 Type 1 (as defined by ANSI) sound level meter. This assembly was mounted at a height of five feet above the ground surface on a tripod and at least six feet away from any sound-reflecting surfaces to avoid major interference with source sound levels that were being measured. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. 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}, and L_{90}. A windscreen was used during all sound measurements except for calibration. Only traffic-related noise was measured; noise from other sources (e.g., emergency sirens, aircraft flyovers, etc.) was excluded from the measured noise levels. Weather conditions were noted to ensure a true reading as

[3] It should be noted that, at Receptor 3, noise monitoring could not be conducted during the School PM and the PM peak periods on April 16, 2019, as Pacific Street was closed to through traffic during the afternoon and early evening hours. Pacific Street was re-opened to through traffic in May, and monitoring was conducted for the School PM and the PM peak periods on May 7, 2019.

Figure L-1
Noise Monitoring Locations



Source: NYCDCP 2018; DoITT 2019

Legend

- Rezoning Area
- Noise Monitoring Locations
- Existing Building Footprints
- Existing Sidewalks

follows: wind speed under 12 mph; relative humidity under 90 percent; and temperature above 14°F and below 122°F (pursuant to ANSI Standard S1.13-2005).

Existing Noise Levels at Monitoring Locations

The noise monitoring results are displayed in **Table L-5** below. Automobile traffic was the dominant source of noise at all three receptor locations. As indicated in the table, the highest overall L_{10} value (73.6 dBA) was measured in the AM peak period at Receptor 1, along Atlantic Avenue. Pursuant to *CEQR Technical Manual* guidelines, this L_{10} value places Receptor 1 in the marginally unacceptable (II) CEQR Noise Exposure category, as the noise level is between 73.0 dBA and 76.0 dBA under existing conditions. The highest L_{10} for Receptor 2 was measured in the midday peak period (71.9 dBA), placing the receptor in the marginally unacceptable (I) CEQR Noise Exposure category under existing conditions. The highest L_{10} for Receptor 3 was measured in the SC PM peak period (70.8 dBA), placing the receptor in the marginally unacceptable (I) CEQR Noise Exposure category under existing conditions.

Table L-5: Existing Noise Levels at Monitoring Locations (in dBA)

Receptor Location[1]	Noise Receptor Location	Time[2]	L_{max}	L_{min}	L_{eq}	L_1	L_{10}[3]	L_{50}	L_{90}	CEQR Noise Exposure Category
1	Atlantic Avenue	AM	87.8	60.2	71.0	79.4	**73.6**	68.9	64.4	Marginally Unacceptable (II)
		MD	85.3	59.3	68.2	77.6	71.3	65.3	61.7	
		SC PM	83.9	58.5	68.0	77.1	70.9	65.5	61.9	
		PM	89.1	58.2	67.4	74.4	69.8	65.9	62.2	
2	Vanderbilt Avenue	AM	86.7	61.2	68.5	77.1	70.8	66.9	64.0	Marginally Unacceptable (I)
		MD	84.7	60.0	69.2	78.9	**71.9**	66.2	63.0	
		SC PM	87.1	57.1	66.8	75.3	69.6	64.7	61.2	
		PM	92.2	57.6	67.1	74.9	69.6	64.8	61.8	
3	Pacific Street	AM	85.5	54.7	66.6	74.4	69.5	64.9	59.9	Marginally Unacceptable (I)
		MD	85.3	58.5	65.7	73.2	67.7	64.6	61.7	
		SC PM	88.6	66.1	70.2	77.1	**70.8**	69.5	68.2	
		PM	85.5	55.3	65.0	73.9	67.4	62.3	57.4	

Notes: Field measurements were performed by Philip Habib & Associates (PHA) on Tuesday April 16, 2019 and Tuesday May 7, 2019.
[1] Refer to Figure L-1 for receptor locations.
[2] AM = weekday AM peak hour; MD = weekday midday peak hour; SC PM = weekday school PM peak hour; PM = weekday PM peak hour.
[3] Highest L_{10} value indicated in **bold**.

VI. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

As outlined in **Attachment A, "Project Description,"** in the 2023 No-Action condition, it is assumed that the existing conditions within the Development Site would remain, and no changes to land use are expected to occur.

Future No-Action noise levels at the receptor locations were calculated using the noise prediction methodology described above in Section IV, "Noise Prediction Methodology." **Table L-6** compares the future No-Action and existing noise levels at the receptor locations. As indicated in **Table L-6**, noise levels at the receptor locations are expected to minimally increase (by 0.04 dBA) in the 2023 No-Action condition as a result of general background growth. Changes of this magnitude would not be perceptible to the public and would fall below the applicable *CEQR Technical Manual* significant adverse impact threshold.

As indicated in the table, the highest projected No-Action L_{10} noise level at Receptor 1 would remain in the marginally unacceptable (II) CEQR Noise Exposure category, while the highest projected No-Action L_{10} noise levels at Receptors 2 and 3 would remain in the marginally unacceptable (I) CEQR Noise Exposure category.

Table L-6: Future No-Action Noise Levels at Monitoring Locations (in dBA)

Receptor Location	Time	Existing L_{eq}	No-Action L_{eq}	Change in L_{eq} from Existing Conditions[1]	No-Action L_{10}[2]	CEQR Noise Exposure Category
1	AM	71.0	71.1	0.04	**73.7**	**Marginally Unacceptable (II)**
	MD	68.2	68.3	0.04	71.4	
	SC PM	68.0	68.0	0.04	71.0	
	PM	67.4	67.5	0.04	69.8	
2	AM	68.5	68.5	0.04	70.8	**Marginally Unacceptable (I)**
	MD	69.2	69.2	0.04	**72.0**	
	SC PM	66.8	66.9	0.04	69.6	
	PM	67.1	67.2	0.04	69.7	
3	AM	66.6	66.7	0.04	69.6	**Marginally Unacceptable (I)**
	MD	65.7	65.8	0.04	67.7	
	SC PM	70.2	70.3	0.04	**70.8**	
	PM	65.0	65.0	0.04	67.5	

Notes:

[1] No-Action L_{eq} – Existing L_{eq}.

[2] Highest L_{10} value indicated in **bold**.

VII. FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

As outlined in **Attachment A, "Project Description,"** in the 2023 With-Action condition, the Applicant-owned Development Site would be redeveloped with an 18-story (195-feet tall), approximately 376,432 gsf mixed-use building. The Proposed Actions would result in a net increment of 50,922 gsf of commercial retail uses, 7,800 gsf of community facility uses, 304,959 gsf (306 DUs) of residential uses, and 64 accessory parking spaces. Future With-Action noise levels at the receptor locations were calculated using the noise prediction methodology described in Section IV, "Noise Prediction Methodology," above. **Table L-7** displays the projected With-Action noise levels.[4]

As indicated in **Table L-7**, in the 2023 With-Action condition, as under the 2023 No-Action condition, the highest projected No-Action L_{10} noise level at Receptor 1 would remain in the marginally unacceptable (II) CEQR Noise Exposure category, while the highest projected No-Action L_{10} noise levels at Receptors 2 and 3 would remain in the marginally unacceptable (I) CEQR Noise Exposure category.

[4] As indicated in **Attachment J, "Transportation,"** the Proposed Actions would generate approximately -55, -1, and -69 vehicle trips (in and out combined) as a result of the proposed development program during the weekday AM, midday (MD), and PM periods. As the incremental vehicle trips generated would be negative, for conservative analysis purposes, it is assumed that the future With-Action noise PCE values would not differ from the calculated No-Action PCE values.

Table L-7: Future With-Action Noise Levels at Monitoring Locations (in dBA)

Receptor Location	Time	No-Action L_{eq}	With-Action L_{eq}	Change in L_{eq} from No-Action Conditions[1]	With-Action L_{10}[2]	CEQR Noise Exposure Category
1	AM	71.1	71.1	0.00	**73.7**	**Marginally Unacceptable (II)**
	MD	68.3	68.3	0.00	71.4	
	SC PM	68.0	68.0	0.00	71.0	
	PM	67.5	67.5	0.00	69.8	
2	AM	68.5	68.5	0.00	70.8	**Marginally Unacceptable (I)**
	MD	69.2	69.2	0.00	**72.0**	
	SC PM	66.9	66.9	0.00	69.6	
	PM	67.2	67.2	0.00	69.7	
3	AM	66.7	66.7	0.00	69.6	**Marginally Unacceptable (I)**
	MD	65.8	65.8	0.00	67.7	
	SC PM	70.3	70.3	0.00	**70.8**	
	PM	65.0	65.0	0.00	67.5	

Notes:

[1] With-Action L_{eq} – No-Action L_{eq}.

[2] Highest L_{10} value indicated in **bold**.

VIII. ATTENUATION REQUIREMENTS

As shown earlier in **Table L-4**, the *CEQR Technical Manual* has set noise attenuation requirements for buildings based on exterior L_{10} noise levels. Recommended noise attenuation values for buildings are designed to maintain a maximum interior noise level of 45 dBA or lower for residential and community facility uses and 50 dBA or lower for commercial office uses and are determined based on exterior L_{10} noise levels.

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. Typically, a building facade is composed of the wall, windows, and any vents or louvers for heating, ventilation, and air conditioning (HVAC) systems in various ratios of area. Since the Proposed Project would most likely be of masonry construction, which typically provides a high level of sound attenuation, the attenuation requirements for CEQR purposes apply primarily to the windows, but may also represent a composite window/wall attenuation value. Window/Wall attenuation can be described in terms of sound transmission class (STC), transmission loss (TL), and outdoor-indoor transmission class (OITC). Although these terms are sometimes used interchangeably, they are unique from each other. Transmission loss refers to how many decibels of sound a facade (wall) or facade accessory (window or door) can stop at a given frequency. The TL for a given construction material varies with the individual frequencies of the noise.

To simplify the noise attenuation properties of a wall, the STC rating was developed. It is a single number that describes the sound isolation performance of a given material for the range of test frequencies between 125 and 4,000 Hz. These frequencies sufficiently cover the range of human speech. Higher STC values reflect greater efficiencies to block airborne sound. The United States Department of Housing and Urban Development (HUD) uses the STC when identifying the required sound attenuation for a facade.

The OITC is similar to the STC, except that it is weighted more towards the lower frequencies associated with aircraft, rail, and truck traffic. The OITC classification is defined by the American Society of Testing

and Materials (ASTM E1332-90 (Reapproved 2003)) and provides a single-number rating that is used for designing a building facade 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. DEP uses the OITC when identifying the required sound attenuation for a facade.

Based on predicted future With-Action exterior noise levels and *CEQR Technical Manual* criteria, maximum With-Action L_{10} noise levels at each of the receptor locations would be greater than 70 dBA and would require special noise attenuation measures to achieve the required interior noise levels.

Specifically, as the maximum With-Action L_{10} noise level at Receptor 1 would be 73.7 dBA, a minimum 31 dBA of composite window/wall attenuation on the facades facing Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Atlantic Avenue and the facades facing Vanderbilt Avenue within 50 feet of Atlantic Avenue would be required for residential/community facility uses in order to achieve the required residential and community facility interior noise level of 45 dBA or lower. As the maximum With-Action L_{10} noise levels at Receptors 2 and 3 would be 72.0 dBA and 70.8 dBA, respectively, a minimum 28 dBA of composite window/wall attenuation on the facades facing Pacific Street and the facades facing Vanderbilt Avenue beyond 50 feet of Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Pacific Street would be required for residential/community facility uses in order to achieve the required residential and community facility interior noise level of 45 dBA or lower. **Figure L-2** illustrates the required attenuation requirements for the Development Site. Future commercial office uses of the Development Site would be required to provide an attenuation rating of five dBA less than the residential/community facility requirement on all building frontages/facades.

(E) Designation

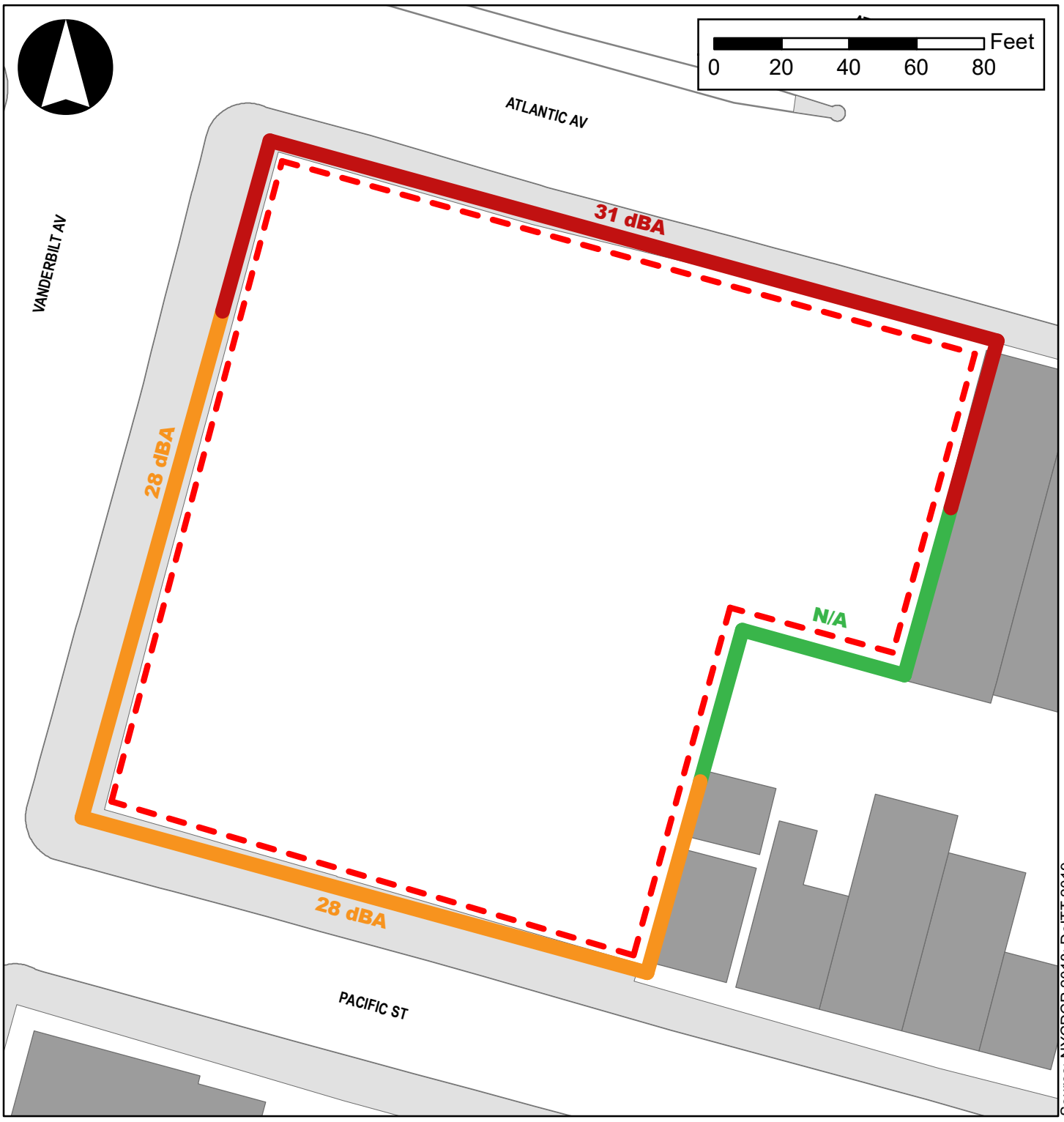
The composite window/wall noise attenuation described above would be required through the assignment of an (E) designation for noise to the Applicant-owned Development Site (Brooklyn Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71) in conjunction with the proposed rezoning. With the implementation of this composite window/wall noise attenuation, no significant adverse noise impacts would occur as a result of the Proposed Actions.

For building facades requiring 28 dBA and 31 dBA of attenuation, the text of the (E) designation (E-604) is as follows:

> **Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71: In order to ensure an acceptable interior noise environment, future residential/commercial office/community facility uses must provide a closed-window condition with a minimum of 31 dBA window/wall attenuation on the facades facing Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Atlantic Avenue and the facades facing Vanderbilt Avenue within 50 feet of Atlantic Avenue and 28 dBA attenuation on the facades facing Pacific Street and the facades facing Vanderbilt Avenue beyond 50 feet of Atlantic Avenue and the facades facing Underhill Avenue within 50 feet of Pacific Street to maintain an interior noise level not greater than 45 dBA for residential and community facility uses or not greater than 50 dBA for commercial office uses as illustrated in the EAS. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.**

With implementation of the attenuation levels outlined above, the Proposed Project would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior noise level guidelines of 45 dBA for

Figure L-2
Noise Attenuation Requirements



Legend

- Development Site
- Existing Building Footprints
- Existing Sidewalks

CEQR Window/Wall Attenuation Requirements

N/A | 28 dBA | 31 dBA

* Attenuation requirement on commercial office uses would be 5 dBA less

residential/community facility uses and 50 dBA for commercial office uses. Therefore, the Proposed Actions and subsequent Proposed Project would not result in any significant adverse noise impacts.

IX. OTHER NOISE CONCERNS

Mechanical Equipment

All of the future building's mechanical systems (i.e., heating, ventilation, and air conditioning systems) would be designed to meet all applicable noise regulations and requirements and would be designed to produce noise levels that would not result in any significant increase in ambient noise levels. In addition, the building mechanical systems would be designed with enclosures where necessary 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' Building Code) and to avoid producing levels that would result in any significant increase in ambient noise levels. Therefore, the Proposed Actions would not result in any significant increases in ambient noise levels.

Aircraft Noise

An initial aircraft noise impact screening analysis would be warranted if the new receptor would be located within one mile of an existing flight path, or cause aircraft to fly through existing or new flight paths over or within one mile of a receptor. Since the Development Site is not located within one mile of an existing flight path, no initial aircraft noise impact screening analysis is warranted.

I. INTRODUCTION

This attachment assesses the potential effect of the proposed actions on the City's water supply, wastewater treatment, and stormwater management infrastructure. New York City's water and sewer network is fundamental to the operation, health, safety, and quality of life of the City and its surrounding environment. Ensuring these systems have adequate capacity to accommodate land use or density changes and new development is critical to avoid environmental and health problems such as sewer back-ups, street flooding or pressure reductions.

The Applicant is seeking three discretionary zoning actions in order to facilitate the redevelopment of 840 Atlantic Avenue (Block 1122, Lots 1, 9, 10, 68, 69, 70, 71) in the Prospect Heights neighborhood of Brooklyn Community District 8 (the "Development Site"). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to C6-3X district; (ii) a zoning text amendment to Zoning Resolution ("ZR") Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall. Collectively, the zoning map amendment and the zoning text amendments are the "Proposed Actions" for the purposes of the environmental analysis.

The proposed rezoning area would encompass the entirety of Lots 9, 68, 69, 70, 71 and a portion of Lots 1 and 10 on Brooklyn Block 1122. The total area of the Development Site is 38,800 square feet (sf). The proposed rezoning area comprises approximately 32,500 sf of lot area bounded by Atlantic Avenue to the north, Vanderbilt Avenue to the west, and Pacific Street to the south. The portion of the Development Site fronting on Pacific Street (the easternmost portion, 30 feet in width) will remain zoned R6B (approximately 4,500 sf). A small portion of the existing M1-1 zoning district (approximately 1,800 sf) would remain (approximately 20 feet of frontage along Atlantic Avenue). Although this portion of the Development Site would fall outside the rezoning area boundary and remain within the M1-1 district, it would be subject to the "25-foot rule" for split lots. As such, in the future with the Proposed Actions, the Development Site would be redeveloped in accordance with the proposed C6-3X and R6B zoning districts and MIH Area.

In the future with the Proposed Actions, the Applicant proposes to construct a new 18-story (195-foot tall) mixed-use building, with approximately 376,432 gross square feet (gsf)). The Proposed Development will contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. Mapping of the MIH Area would facilitate development of approximately 95 affordable housing units on the Development Site, as the Applicant would provide affordable housing equivalent to 30 percent of the residential floor area pursuant to MIH Option 2.

However, while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C6-3X zoning district, an alternate reasonable worst-case

development scenario (RWCDS) will be considered for conservative analysis purposes. As the Proposed Actions would permit a greater commercial FAR than the existing zoning permits, an alternate commercial With-Action RWCDS option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. The alternate RWCDS would include approximately 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet. The total floor area ratio (FAR) for the alternate commercial RWCDS would be 5.52, which would be the maximum FAR under the proposed C6-3X and R6B zoning ("Scenario 2").

As Scenario 2 would exceed the *CEQR Technical Manual* threshold for a detailed water and sewer infrastructure analysis, Scenario 2 is analyzed for its potential impacts to water and sewer infrastructure.

II. PRINCIPAL CONCLUSIONS

Based on the methodology set forth in the *CEQR Technical Manual*, the analysis finds that the proposed actions would not result in a significant adverse impact on the City's water supply, wastewater and stormwater conveyance and treatment infrastructure.

Water Supply

The anticipated water usage as a result of the Proposed Actions is expected to total 70,239 gallons per day (gpd), an increment of 65,774 gpd over water demand under existing conditions. This incremental demand would represent less than 0.01 percent of the over one billion gallons of water supplied daily to New York City by the New York City Department of Environmental Protection (DEP). As changes of this magnitude would not be large enough to have a significant adverse impact on the City's water system, the incremental demand with the proposed actions would not adversely affect the City's water supply or system water pressure.

Sanitary (Dry Weather) Flows

The Red Hook water pollution control plant (WPCP), which is designed to treat a dry weather flow of 60 million gallons per day (mgd), handled an average of 32.9 mgd of sewage flow between January and December 2018. Based on rates in the *CEQR Technical Manual*, the proposed development under Scenario 2 has the potential to result in an increase of approximately 0.02 mgd of sanitary sewage flow. This incremental increase in sanitary flow would represent approximately 0.03 percent of the Red Hook WPCP's designated State Pollution Discharge Elimination System (SPDES) capacity. Pursuant to CEQR methodology, as the projected increase in sanitary sewage would not cause the Red Hook WPCP to exceed its operational capacity or its SPDES-permitted capacity, the Proposed Actions would not result in significant adverse impacts to sanitary sewage conveyance and treatment.

Stormwater (Wet Weather) Flows

Based on the analysis conducted pursuant to *CEQR Technical Manual* methodologies, the Proposed Actions would not result in significant adverse impacts to stormwater conveyance and treatment infrastructure. Under Scenario 2, it is anticipated that the Proposed Actions would increase wet weather flows by 0.01 to 0.06 million gallons, depending on rainfall duration and intensity. Any future development

facilitated by the Proposed Actions would be required to ensure a maximum stormwater release rate of 0.25 cubic feet per second (cfs) or ten percent of allowable flow from the Development Site pursuant to the amended Title 15, Chapter 31 of the Rules of the City of New York (RCNY) and offset increased flows to the sewer system through the implementation of stormwater Best Management Practices (BMPs), as warranted.

III. METHODOLOGY

According to the *CEQR Technical Manual,* a preliminary water supply infrastructure analysis is needed if the project would result in an exceptionally large demand for water (e.g., more than one million gallons per day [mgd]), or is located in an area that experiences low water pressure (i.e., areas at the end of the water supply distribution system such as the Rockaway Peninsula or Coney Island). As the Development Site is not located in an area that experiences low water pressure and the Proposed Actions would not result in an incremental water demand exceeding one mgd, a detailed analysis is not warranted. However, the total water demand for the proposed development under Scenario 2 is calculated for purposes of determining the sewage generated by the Proposed Actions.

The Development Site is located in a combined sewered area. A preliminary sewer assessment is warranted if a project located in a combined sewered area in Brooklyn and exceeds 400 residential units or 150,000 sf of commercial, public facility, and community facility space or more. As the proposed development meets this *CEQR Technical Manual* threshold under Scenario 2, a preliminary sewer assessment is warranted and is provided in this chapter.

To assess the Proposed Action's potential impacts on water and sewer infrastructure, this attachment:

- Describes the existing water and sewer infrastructure on the development site and estimates water demand and sewage and stormwater generation under existing conditions and in the No-Action condition (for the 2023 analysis year). Existing and future water demands and sewage generation are calculated based on use generation rates provided in the *CEQR Technical Manual*. Stormwater runoff and sanitary flows are calculated using the New York City DEP Flow Calculation Matrix.
- Forecasts water demand and sewage and stormwater generated by the proposed action under the proposed project scenario based on *CEQR Technical Manual* guidelines.
- Assesses the effects of the proposed action's water demand and sewage and stormwater generation under the proposed project scenario on the City's water and sewer infrastructure, pursuant to *CEQR Technical Manual* guidelines.

IV. EXISTING CONDITIONS

Water Supply

The New York City water supply system comprises a network of reservoirs, lakes, and aqueducts extending into the Catskill region and a pipe network that distributes water within the City. New York City obtains nearly all of its water from the Delaware, Catskill, and Croton watersheds, which are located within 125 miles of the City. Water from the watersheds is stored at 19 reservoirs and three control lakes, having a combined capacity of approximately 580 billion gallons. The water is then carried into the City by

aqueducts. The water enters the City via City Tunnel No. 1, which runs through the Bronx, Manhattan, and Queens, and City Tunnel No. 2, which runs through the Bronx, Queens, and Brooklyn. The partially complete City Tunnel No. 3 serves the Bronx, Manhattan, and Queens, and, when fully complete, will terminate in Brooklyn. Staten Island obtains its water via the Richmond Tunnel, which is an extension of City Tunnel No. 2.

Once in the City, the three aqueducts distribute water into a network of water mains. Water mains up to 96 inches in diameter feed the smaller mains, which deliver water to their final destination. These are the same mains that provide water to fire hydrants. Nearly all of the water reaches its consumers by gravity alone, although some four percent (generally located at the outer limits of the system where in-line pressure is lowest, at high elevations, or at a pressure extremity, such as Far Rockaway) is pumped to its final destination. Pressure regulators throughout the City monitor and control the water pressure, with slight variations in pressure occurring during peak use periods and while fire hydrants are in use.

The water mains that would serve the Development Site includes 12-inch, 20-inch, and 40-inch water mains under Atlantic Avenue (to the north), 8- and 12-inch water mains under Vanderbilt Street (to the west), and a 16-inch inch water main under Pacific Street (to the south).

As indicated in **Attachment A, "Project Description**," the Development Site contains a fast food establishment with a drive-through and parking lot fronting on Atlantic Avenue and Vanderbilt Avenue on Tax Lot 1. Tax Lot 9, fronting on Atlantic Avenue, is a vacant lot utilized as open storage. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings, flanked on each side by vehicular entrances to the fast food establishment parking lot. Lot 68, fronting on Pacific Street, is vacant and currently utilized as open storage.

As shown in **Table M-1**, existing uses on the Development Site consume approximately 4,465 gpd of domestic water.

Table M-1: Existing Water Consumption

Site	Land Use	Floor Area (sf)	Domestic Water (gpd)[1]	Air Conditioning (gpd)[1]
Development Site	Residential	7,958 (10 DUs)	2,500	N/A
	Local Retail (Fast food)	4,793	1,150	815
		Total Water Consumption	3,650	
		Total Wastewater Generation	4,465	

Notes:
[1]2014 *CEQR Technical Manual*, Table 13-2 "Water Usage and Sewage Generation Rates for Use in Impact Assessment."

Sewer System

According to the *CEQR Technical Manual*, wastewater is considered to include sanitary sewage, wastewater generated by industries, and stormwater. Water used for air conditioning generates a negligible amount of wastewater as it recirculates or evaporates in the cooling and heating process.

New York City's sewer system consists of a grid of sewers beneath the streets that send wastewater flows to fourteen different water pollution control plants (WPCPs). The City's WPCPs are regulated by the New York State Department of Environmental Conservation (NYSDEC), which issues a permit regulating its discharge of treated effluent. Combined, all fourteen WPCPs in New York City have a SPDES permitted total capacity of 1.8 billion gpd. The area served by each plant is called a "drainage area" or "catchment area." While the majority of New York City's sewers are combined sewers, since they receive both sanitary wastewater and stormwater runoff, some areas of the City operate with separate systems for sanitary sewage and stormwater. In these areas, sanitary sewage is sent to the WPCP, and stormwater is sent through separate sewers and outfalls into the nearest waterway.

During dry weather, the WPCP primarily treats sanitary sewage. The average daily flow during dry weather is known as the average "dry-weather flow." WPCPs have treatment capacities set at twice their dry weather design flow for a limited amount of time. However, because the majority of New York City's sewers are combined sewers, they also receive stormwater and rainwater runoff from impermeable surfaces that generally contain pollutants such as oil and floatable debris. During wet weather, stormwater enters the combined sewer system along with sanitary sewage, and both are treated at a WPCP. During wet weather, rainfall runoff can reach ten to 50 times the dry weather flow, which is well above the WPCP design capacity. To avoid flooding the WPCPs, built-in regulators act as relief valves to direct the excess water to an outfall. During storm events, sanitary sewage entering or already in the combined sewer system, as well as stormwater and debris, can be discharged, untreated, into the nearest body of water. This untreated overflow is known as "combined sewer overflow" (CSO).

The rezoning area is served by the Red Hook WPCP located at 63 Flushing Avenue. The Red Hook WPCP serves approximately 3,200 acres of northwest Brooklyn and Governor's Island.

The Red Hook WPCP began operating in 1987 with a step-aeration design capacity of 60 mgd. The Red Hook WPCP treats an average of 45 mgd. The Red Hook WPCP has a design dry weather flow capacity of 60 mgd, and is designed to receive a maximum flow of 120 mgd with 90 mgd receiving secondary treatment. Flows over 90 mgd receive primary treatment and disinfection.

As indicated in **Table M-2**, the average monthly flow to the Red Hook WPCP over the past twelve months is approximately 32.9 mgd, well below the maximum permitted level of 60 mgd.

Table M-2: 2018 Average Flows at the Red Hook WPCP

Month	Average Flows (mgd)
January	32
February	36
March	36
April	35
May	35
June	35
July	31
August	31
September	32
October	28
November	32
December	32
Annual Average	*32.9*

Source: DEP "Monthly Operating Efficiency" tables.

As noted above, the rezoning area is located in an area served by combined storm and sanitary sewers. In a combined sewer system, there is a single pipe that carries both stormwater runoff and sewage from buildings. The mix of stormwater and sewage from the Development Site is sent to the Red Hook WPCP.

The Development Site is served by combined sewers; 12-inch and 15-inch combined sewer flows west along Atlantic Avenue, a 12-inch combined sewer flows north and an 18-inch combined sewer flows south along Vanderbilt Street, and a 15-inch combined sewer flows west along Pacific Street.

Sanitary Flows (Dry Weather)

As presented in **Table M-1**, the existing residential and commercial buildings on the Development Site generates an estimated 4,465 gpd of wastewater, which is conveyed to the Red Hook WPCP.

Stormwater Flows (Wet Weather)

As outlined in **Attachment A, "Project Description,"** the Proposed Actions would result in development on the approximately 38,800 sf Development Site. The Development Sit contains a fast food establishment with a drive-through and parking lot fronting on Atlantic Avenue and Vanderbilt Avenue on Tax Lot 1. Tax Lot 9, fronting on Atlantic Avenue, is a vacant lot utilized as open storage. Tax Lot 10, fronting on Atlantic Avenue, is developed with a three-story residential building with ground floor retail. Tax Lots 69 and 70, fronting on Pacific Street, are developed with two 3-story residential buildings, flanked on each side by vehicular entrances to the fast food establishment parking lot. Lot 68, fronting on Pacific Street, is vacant and currently utilized as open storage.

Table M-3 describes the surfaces and surface areas, as well as the weighted runoff coefficient (the fraction of precipitation that becomes surface runoff) for each surface type. As presented in the table, the Development Site has an existing combined stormwater runoff coefficient of 0.48.

Table M-3: Existing Stormwater Runoff

Surface Type	Roof	Pavement and Walks	Other	Grass and Softscape	Total
Area (%)	37%	57%	0%	6%	100%
Surface Area (sf)	14,368	21,932	0	2,500	38,800
Runoff Coefficient[1]	1.0	0.85	0.85	0.20	0.86

Notes: [1] Runoff coefficients for each surface type as per the DEP.

For this analysis, the runoff coefficients were used to calculate the amount of stormwater runoff using the three-month, six-month, and twelve-month storm events, with rainfall averaging from 0.00 to 2.50 inches over durations of 3.80 to 19.50 hours. **Table M-4** shows the existing stormwater runoff for the rezoning area. As indicated in the table, the development site currently generates between 0.00 and 0.07 million gallons (mg) of wet weather flows for different rainfall intensities. Stormwater flows generated on the development site are sent untreated through separate sewers and outfalls into the nearest waterway (Jamaica Bay).

Table M-4: Existing Stormwater and Wastewater Generation to the Red Hook WPCP

Storm Event Type	Rainfall (inches)	Duration (hours)	Total Area (acres)	Weighted Runoff Coefficient	Stormwater to CSS (MG)[1]	Sanitary to CSS (MG)	Total Volume to CSS (MG)
	0.00	3.80	0.89	0.40	0.00	0.001	0.00
3-Month	0.40	3.80	0.89	0.40	0.00	0.001	0.00
6-Month	1.20	11.30	0.89	0.40	0.01	0.002	0.01
12-Month	2.50	19.50	0.89	0.40	0.02	0.004	0.03

Notes:
[1] Derived from **Table M-3**.
CSS = combined sewer system; MG = million gallons

V. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

In the future without the proposed actions (No-Action condition), it is anticipated that the Development Site would continue to be occupied by the existing uses. As under existing conditions, the Development site would generate a total water demand of 4,465 gpd. During storm events, stormwater generated on the Development Site in the No-Action condition would total approximately 0.00 to 0.03 mg, depending on rainfall intensity.

VI. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

As noted above, the Proposed Actions consist of a zoning map amendment and a zoning text amendment to establish a MIHA. With the proposed zoning map change from R3X to R6, residential and community facility uses would continue to be permitted in the project area. As described above, under Scenario 2, the Proposed Actions would result in a net increment of 66,754 gsf of retail uses, 149,336 gsf of office uses, and 9,450 gsf of community facility uses (assumed to be medical office). This would result in a commercial development totaling 225,540 gsf with a height of approximately 75-feet.

Water Supply

The Proposed Actions would generate increased demand on the DEP water supply system, as compared to the No-Action condition. As indicated in **Table M-5**, Scenario 2 would generate a net incremental future water demand of approximately 65,774 gpd, including water demand for domestic use, as well as air conditioning systems. This incremental water demand would represent less than 0.01 percent of the over one billion gallons of water supplied daily to New York City by DEP.

Sewer System

Sanitary Flows (Dry Weather)

As indicated in **Table M-5**, below, the estimated increment of sanitary sewage generated by the Proposed Actions under Scenario 2 would be 28,248 gpd. This amount would represent approximately 0.09 percent of the average daily flow of 32.9 mgd at the Red Hook WPCP and would not result in an exceedance of the plant's permitted capacity of 100 mgd. Therefore, the Proposed Actions would not create a significant adverse impact on the City's sanitary sewage treatment system. In addition, per the New York City

Plumbing Code (Local Law 33 of 2007), low-flow fixtures would be required to be implemented and would help to reduce future sanitary flows from future development facilitated by the Proposed Actions.

Table M-5: Expected Water Demand on Development Site – 2023 No-Action vs. 2023 With-Action Conditions

	Use	Area (gsf)	Domestic Use (gpd)[1]	Air Conditioning (gpd)[1]
No-Action Condition	Residential	7,958 (10 DUs)	2,500	-
	Local Retail	4,793	1,150	815
	Total No-Action Water Supply Demand			4,465
	Total No-Action Sewage Generation			3,650
With-Action Condition	Local Retail	66,754	16,020	11,348
	Office	149,336	14,933	25,387
	Community Facility	9,450	945	1,606
	Total With-Action Water Supply Demand			70,239
	Total With-Action Sewage Generation			31,898
Increment	***Incremental Water Supply Demand***			65,774
	Incremental Sewage Generation			28,248

Notes:
[1] Based on average daily water use rates provided in Table 13-2 of the *CEQR Technical Manual* (unless otherwise indicated)
- Medical office assumes office rate: 0.10 gpd per sf for domestic use, plus 0.17 gpd per sf for air conditioning.

Connecting to the City's sewer system requires certification from DEP as part of the building permit process, which is not a discretionary approval. Any proposed buildings would be required to file a site connection proposal for approval from DEP to tie into the sewer system. In this process, before a building permit can be issued, site connection proposals must be certified for sewer availability by DEP. The Applicant will be required to demonstrate that the existing sanitary system could handle the sanitary flows from the Proposed Project. New development sewer certification review ensures that sufficient capacity exists in both sewers fronting the Development Site as well as downstream sewers to accommodate additional discharges from new development. If adequate capacity is not available, infrastructure improvements, sewer extensions, or on-site detention/retention systems that offset increased sanitary or stormwater flows may be required before sewer connections are approved. The construction of new sewers and/or other infrastructure improvements will require an amendment to the City's drainage plan. An amended drainage plan (ADP) is a plan that establishes sizes, alignments, and capacities of proposed sewers.

All analysis and sewer improvements would be undertaken prior to construction of the Proposed Project and in consultation with DEP for its review and approval. As the Proposed Project involves a zoning map change which would result in an increase in sanitary flows, the applicable existing City Drainage Plan will require an amendment. The amended drainage plan would be developed for DEP's review and approval.

Stormwater Flows (Wet Weather)

In the future with the Proposed Actions, the amount of paved and grass/softscape areas on the Development Site would decrease, while the amount of roof area would increase. As a result of these changes, the combined weighted runoff coefficient for the Development Site would increase to 1.00 (refer to **Table M-6**).

Table M-6: With-Action Stormwater Runoff

Surface Type	Roof	Pavement and Walks	Other	Grass and Softscape	Total
Area (%)	100%	0%	0%	0%	100%
Surface Area (sf)	38,800	0	0	0	38,800
Runoff Coefficient[1]	1.0	0.85	0.85	0.20	1.00

Notes: [1] Runoff coefficients for each surface type as per the DEP.

Due to increased stormwater and wastewater flows generated on the Development Site in the future with the Proposed Actions, the total volume to the sewer system would increase as well as the stormwater runoff to direct drainage. As presented in **Table M-7**, the Development Site is expected to generate an increment between 0.00 and 0.08 mg of wet weather flows for different rainfall intensities.

Table M-7: Stormwater Runoff to Direct Drainage and Wastewater Generation to the Red Hook WPCP —Future With-Action Condition

Storm Event Type	Rainfall (inches)	Duration (hours)	Total Area (acres)	Weighted Runoff Coefficient	Stormwater t0 CSS (MG)[1]	Sanitary to CSS (MG)	Incremental Volume to CSS (MG)
	0.00	3.80	0.89	1.00	0.00	0.00	0.00
3-Month	0.40	3.80			0.01	0.00	0.01
6-Month	1.20	11.30			0.03	0.01	0.04
12-Month	2.50	19.50			0.06	0.02	0.08

Notes:
[1] Derived from **Table M-5.**
CSS = combined sewer system; MG = million gallons

Self-certification of house or site connection proposals in not permitted by the New York City Department of Building (DOB) or DEP in connection with any proposed new developments of expansions of existing development, as per the Rules of the RCNY, Title 15, Chapter 31, "Rules Governing House/Site Connections to the Sewer System." To be issued a permit to connect to a City sewer, an applicant proposing a new development or expansion of an existing development is required to submit a site-specific hydraulic analysis to DEP for review and approval. The site-specific hydraulic analysis would establish the adequacy of the existing combined sewer system that would serve the development lots. In 2012, DEP amended Chapter 31 of Title 15 of the RCNY to modify the flow rate of stormwater to the City's combined sewer system for new and existing development, as part of sewer availability and connection approvals. The amended rule was promulgated on January 4, 2012 and went into effect on July 4, 2012. Per the amended Chapter 31, for a new development, the stormwater release rate is the greater of 0.25 cfs or ten percent of the allowable flow, unless the allowable flow is less than 0.25 cfs, in which case the stormwater release rate is the allowable flow. This release rate is consistent with policies set forth in *PlaNYC* and the 2010 *NYC Green Infrastructure Plan.* Any future development on the Development Site would be required to achieve this new flow rate.

As noted above, to be issued a permit to connect to the City's sewer, development on the Development Site would be required to submit a site-specific hydraulic analysis to DEP for review and approval. Based on this site-specific hydraulic analysis, incorporation of a variety of BMPs may be required of the Applicant at the time of the house or site connection proposal to ensure adherence to the maximum permitted stormwater release rate. While the specific BMPs to be used are not known at this time, BMPs that may be utilized could include green roofs, blue roofs, subsurface detention, infiltration, or a combination of

these green technologies, as outlined in the *NYC Green Infrastructure Plan.* These green technologies would retain or release stormwater with slowed discharge rates to control peak runoff rates. Trees planted per New York City's street tree requirement could also be utilized to capture and store water below enhanced tree pits. The design of water detention systems would be submitted to DEP for review and approval. Through the site connection process, DEP would ensure that the necessary stormwater BMPs were implemented (as warranted) and reduce the increase in untreated stormwater flows.

APPENDIX A

NEW YORK CITY LANDMARKS PRESERVATION COMMISSION

ENVIRONMENTAL REVIEW LETTER

NYC Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ENVIRONMENTAL REVIEW

Project number: DEPARTMENT OF CITY PLANNING / LA-CEQR-K
Project: 840 ATLANTIC AVENUE REZONING
Date received: 11/28/2018

Properties with no Architectural or Archaeological significance:

1) ADDRESS: 840 Atlantic Avenue, BBL: 3011220001
2) ADDRESS: 853 Pacific Street, BBL: 3011220068
3) ADDRESS: 851 Pacific Street, BBL: 3011220069
4) ADDRESS: 849 Pacific Street, BBL: 3011220070
5) ADDRESS: 847 Pacific Street, BBL: 3011220071

In radius: Prospect Heights LPC designated, Clinton Hill South NRHD; Additional SHPO eligible resources: 547-555 Clinton Avenue; 538 to 542 Clinton Avenue; St. Joseph's RC Church Complex, 856 Pacific St.

Gina Santucci

11/28/2018

SIGNATURE DATE

Gina Santucci, Environmental Review Coordinator

File Name: 33842_FSO_DNP_11282018.doc

APPENDIX B

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

CORRESPONDENCE

Environmental Protection

Vincent Sapienza P.E.
Commissioner

Angela Licata
Deputy Commissioner of Sustainability

59-17 Junction Blvd.
Flushing, NY 11373

MEMORANDUM

To: Anthony Howard
NYC Department of City Planning

From: Rasheed Lucas
Bureau of Environmental Planning & Analysis

Subject: CEQR # 20DCP162K
840 Atlantic Avenue
Borough of Brooklyn

Date: August 18, 2020

This is in reference to the Environmental Impact Statement (CEQR # 20DCP162K) received by BWSO on July 15, 2020 via e-mail. The current area is zoned to M1-1 & R6B. However, the applicant is seeking a zoning map amendment to rezone the area to C6-3X. The applicant is also seeking a zoning text amendment to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH). The proposed development will be the following:

The proposed development would contain 312,917 gsf of residential uses, and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided.

Please be advised of the following comments.

- **Combined System**

1. Sanitary:
DEP has reviewed the submitted EIS. Based on analysis, the proposed actions would likely result in an increase of 0.98 mgd (1.51 cfs) in sanitary flow of the adjacent sewers based on the proposed Action Scenario and estimated in accordance with the City's design criteria. A hydraulic analysis of the existing sewer system will likely be required prior to the submittal of the Site Connection Proposal Application (SCP) to determine whether the existing sewer system is capable of supporting higher density development and related increase in wastewater flow, or whether there will be a need to upgrade the existing sewer system. In addition, there might be a need to amend the existing drainage plan based on the hydraulic analysis calculations.

2. Storm:
As part of the DEP site connection approval process, the development must be in compliance with the required stormwater release rate.

- Water System

The proposed development would generate an increase in water demand of 65,774 gpd in the New York City water supply system. Existing infrastructure should be able to handle the water demand.

C: Jannine McColgan, P.E., Director, Engineering
Mark Safari, P.E., Director, Connections and Permitting
Frank Loncar, P.E., Director, Collections and Resource Recovery Operations
Frank Kulcsar, P.E., Section Chief, Capital Planning and Budget
Sham Hemraj, P.E., Chief, Distribution Engineering
Steve Carrea, P.E., Chief, Drainage and Modeling
Guo Zhan Wu, P.E., Chief, Regulatory Review
Selim Andrawis, P.E., Chief, Review and Permitting
Ketki Patel, P.E., Chief, Site Connection and EARU
Vincent Malveaux, E.I.C., Site Connection
Lixin (Lillian) Cheng, P.E., E.I.C., Drainage Review
Joseph Acaba, Review Engineer
File; JA/ja
Record No. 50759

Environmental Protection

Vincent Sapienza, P.E.
Commissioner

Angela Licata
Deputy Commissioner of Sustainability

59-17 Junction Blvd.
Flushing, NY 11373

Tel. (718) 595-4398
Fax (718) 595-4422
alicata@dep.nyc.gov

August 26, 2020

Anthony Howard
Senior Project Manager
Environmental Assessment and Review Division
New York City Department of City Planning
120 Broadway, 31st Floor
New York, NY 10271

Re: 840 Atlantic Avenue Rezoning
Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71
CEQR # 20DCP162K

Dear Mr. Howard:

The New York City Department of Environmental Protection, Bureau of Sustainability (DEP) has reviewed the July 2020 Environmental Assessment Statement Hazardous Materials Chapter (EAS) prepared by Philip Habib & Associates and the October 2017 and June 2019 Phase I Environmental Site Assessments (Phase I) prepared by Environmental Business Consultants on behalf of Vanderbilt Atlantic Holdings LLC (applicant) for the above referenced project. It is our understanding that the applicant is seeking three discretionary zoning actions from the New York City Department of City Planning (DCP) in order to facilitate construction of a new 18-story mixed-use building, with approximately 376,432 gross square feet (gsf) at 840 Atlantic Avenue; Block 1122, Lots 1, 9, 10, 68, 69, 70, and 71 (Development Site) in the Prospect Heights neighborhood of Brooklyn Community District 8. The discretionary actions include: (i) a zoning map amendment to rezone a portion of the Development Site from M1-1 and R6B to C6-3X; (ii) a zoning text amendment to Zoning Resolution (ZR) Appendix F to designate the Development Site as a Mandatory Inclusionary Housing (MIH) Area; and, (iii) a zoning text amendment to create a new ZR Section 35-662 to allow flexibility in the location of the street wall. The proposed development would contain 312,917 gsf of residential uses (comprising approximately 316 dwelling units, of which approximately 95 would be affordable) and 55,715 gsf of commercial retail uses on the first and second stories. Approximately 7,800 gsf of community facility uses would also be provided on the first and second stories. Approximately 90 accessory parking spaces would be provided. The Development Site currently contains active uses (McDonald's fast-food restaurant, residential uses, mixed commercial/residential uses, and vehicle storage).

The October 2017 Phase I report for Block 1122, Lots 1, 68, and 71 revealed that historical on-site and surrounding area land uses consisted of a variety of residential, commercial, and industrial uses including residences, a stable, a garage, auto repair and auto painting shops, service stations, a parking lot, a restaurant, churches, an undertaker, a carriage house, a submarine armor and

brass fitting manufacturer, a railroad freight yard, a venetian blind manufacturer, a car wash, an electrical supplies wholesaler, a beverage bottler, a welding shop, etc. Regulatory databases identified 35 spills and 17 historical auto sites within 1/8 mile; 3 dry cleaners, 24 underground storage tank sites and 27 aboveground storage tank sites within 1/4 mile; 45 leaking storage tank sites and 3 brownfield sites within 1/2 mile; and 1 manufactured gas plant site within 1 mile of the subject property.

The June 2019 Phase I report for Block 1122, Lots 9, 10, 69, and 70 revealed that historical on-site and surrounding area land uses consisted of a variety of residential, commercial, and industrial uses including residences, retail stores, a bar/lounge, a stable, an undertaker, a carriage house, a telephone company building, a submarine armor and brass fitting manufacturer, a painter, a wheelwright, a storage, a garage, a railroad freight yard, a service station, a church, a storage facility, welding supply, an undertaker's supply, auto repair/paint shops, a parking lot, a venetian blind manufacturer, a car wash, an electrical supplies wholesaler, etc. Given the age of the on-site buildings, asbestos containing materials and lead based paints may be present in the on-site structures. In addition, fluorescent lighting fixtures and electrical equipment may include polychlorinated biphenyl-containing components. Regulatory databases identified 35 spills and 6 historical auto sites within 1/8 mile; 3 dry cleaners, 22 underground storage tank sites and 28 aboveground storage tank sites within 1/4 mile; 46 leaking storage tank sites, 15 voluntary cleanup program sites and 3 brownfield sites within 1/2 mile; and 1 manufactured gas plant site within 1 mile of the subject property.

Based upon our review of the submitted documentation, we have the following comments and recommendations to DCP:

- Based on prior on-site and/or surrounding area land uses which could result in environmental contamination and testing is not physically possible during the CEQR process, DEP concurs with the EAS recommendation that an (E) designation for hazardous materials should be placed on the zoning map pursuant to Section 11-15 of the New York City Zoning Resolution for the subject property. The (E) designation will ensure that testing and mitigation will be provided as necessary before any future development and/or soil disturbance. Further hazardous materials assessments should be coordinated through the Mayor's Office of Environmental Remediation.

Future correspondence and submittals related to this project should include the following CEQR # **20DCP162K**. If you have any questions, you may contact Mohammad Khaja-Moinuddin at (718) 595-4445.

Sincerely,

Wei Yu
Deputy Director, Hazardous Materials

c: R. Weissbard; M. Khaja-Moinuddin; T. Estesen; R. Lucas; M. Wimbish; O. Abinader – DCP; M. Bertini - OER

APPENDIX C

CONSTRUCTION SCHEDULE

GT GARDINER &THEOBALD

On Behalf of 840 Atlantic Avenue

Project Schedule Response 1.22.2021

Dear Tom;

Per your request to comments from DCP; G&T prepared the project schedule on October 20, 2020 after absorbing all available information and taking into consideration all factors and historical data from similar projects completed in New York.

The construction schedule with a start date of 1.4.2022 and an anticipated end date of on or about 10.9.2023 assumes the following logic to achieve the completion date represented. The total duration of construction is expected to be approximately 21 months.

Upon completion of the demolition phase, given the size of the site we would phase the SOE installation allowing foundations to start while the SOE scope is still ongoing. This strategy will allow us to save time on the foundation schedule and start formwork concurrent to the phase 2 SOE installation. Subsequent to the foundation completion, superstructure will be constructed using a street crane on a 5-day pour cycle from the 1st floor to the 5th floor. The 5th floor to the 18th floor pours would be on a 3-day pour cycle as the floor plates are typical going up the building allowing for optimal efficiency which is industry standard.

Upon completion of the 5th floor MEP installation would begin with an anticipated 7-month duration with installation completed on or about May 15, 2023.

Following the MEP install, we would start the process of making the building watertight by installing windows and temporary roofs to allow for the installation of the dry trades to begin. With the strategic locations of the temporary roof, we would also be able to start the elevator install to provide vertical transportation allowing us to remove the hoist and fully enclose the building. With the anticipated early enclosure of the building, the interior fit out of the apartments will be advanced allowing us to complete all apartment fit out and call for TCO inspection. The interior finish anticipated completion date of August 14, 2023 allows us 2 months to work on the TCO close out process which based on prior experience is appropriate for a project of this size.

Our plan to achieve the schedule presented is to chase all trades up the building in a thoughtful and methodical manner to optimize time. We would also like to note that the retail and community spaces will be delivered white box and as a result, the fit out of these spaces is not included in the schedule.

Regards

Brian Hart

Associate Director

b.hart@gardinerusa.com

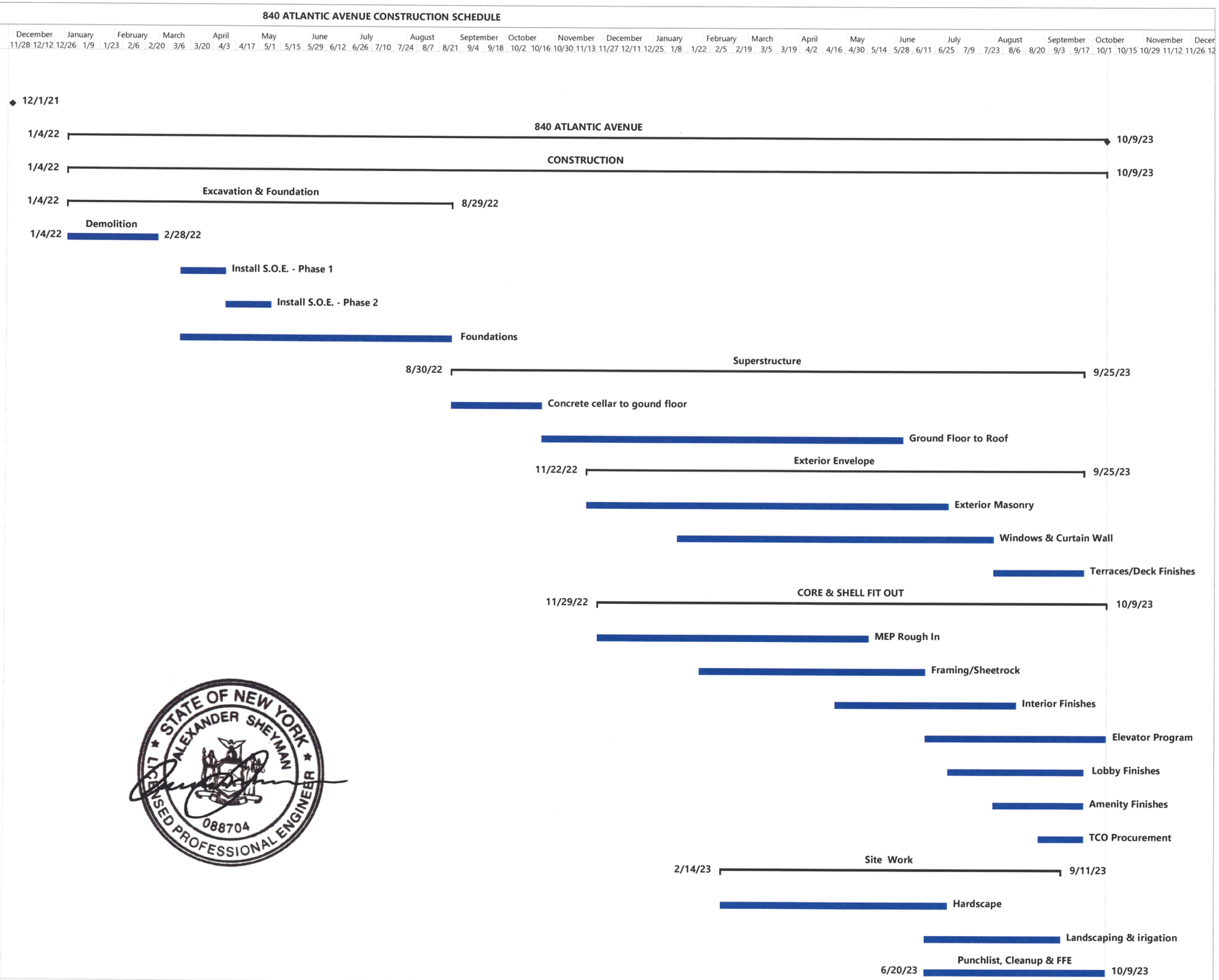
GARDINER & THEOBALD INC

t: (212) 661-6624

c: (347) 307-0277

840 ATLANTIC AVENUE CONSTRUCTION SCHEDULE

ID	Task Name	Duration	Start	Finish
1				
2	**REZONING APPROVAL**	0 days	Wed 12/1/21	Wed 12/1/21
3	**840 ATLANTIC AVENUE**	**460 days**	**Tue 1/4/22**	**Mon 10/9/23**
4	**CONSTRUCTION**	**460 days**	**Tue 1/4/22**	**Mon 10/9/23**
5	**Excavation & Foundation**	**170 days**	**Tue 1/4/22**	**Mon 8/29/22**
6	Demolition	2 mons	Tue 1/4/22	Mon 2/28/22
7	Install S.O.E. - Phase 1	1 mon	Tue 3/15/22	Mon 4/11/22
8	Install S.O.E. - Phase 2	1 mon	Tue 4/12/22	Mon 5/9/22
9	**Foundations**	6 mons	Tue 3/15/22	Mon 8/29/22
10	**Superstructure**	**280 days**	**Tue 8/30/22**	**Mon 9/25/23**
11	Concrete cellar to gound floor	2 mons	Tue 8/30/22	Mon 10/24/22
12	Ground Floor to Roof	8 mons	Tue 10/25/22	Mon 6/5/23
13	**Exterior Envelope**	**220 days**	**Tue 11/22/22**	**Mon 9/25/23**
14	Exterior Masonry	8 mons	Tue 11/22/22	Mon 7/3/23
15	Windows & Curtain Wall	7 mons	Tue 1/17/23	Mon 7/31/23
16	Terraces/Deck Finishes	2 mons	Tue 8/1/23	Mon 9/25/23
17	**CORE & SHELL FIT OUT**	**225 days**	**Tue 11/29/22**	**Mon 10/9/23**
18	MEP Rough In	6 mons	Tue 11/29/22	Mon 5/15/23
19	Framing/Sheetrock	5 mons	Tue 1/31/23	Mon 6/19/23
20	Interior Finishes	4 mons	Tue 4/25/23	Mon 8/14/23
21	Elevator Program	4 mons	Tue 6/20/23	Mon 10/9/23
22	Lobby Finishes	3 mons	Tue 7/4/23	Mon 9/25/23
23	Amenity Finishes	2 mons	Tue 8/1/23	Mon 9/25/23
24	TCO Procurement	1 mon	Tue 8/29/23	Mon 9/25/23
25	**Site Work**	**150 days**	**Tue 2/14/23**	**Mon 9/11/23**
26	Hardscape	5 mons	Tue 2/14/23	Mon 7/3/23
27	Landscaping & irrigation	3 mons	Tue 6/20/23	Mon 9/11/23
28	**Punchlist, Cleanup & FFE**	4 mons	Tue 6/20/23	Mon 10/9/23



Project: Construction Schedule
Date: Tue 10/20/20

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress