737 Fourth Avenue Rezoning
Environmental Assessment Statement

CEQR # 19DCP127K

Prepared for:
737 FOURTH AVENUE, LLC

Prepared by:
Philip Habib & Associates

June 24, 2019

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Environmental Assessment Statement
(EAS) Form

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

FOR UNLISTED ACTIONS ONLY • *Please fill out and submit to the appropriate agency* (see instructions)

Part I: GENERAL INFORMATION

1. *Does the Action Exceed Any Type I Threshold in 6 NYCRR Part 617.4 or 43 RCNY §6-15(A) (Executive Order 91 of 1977, as amended)?* ☐ YES ☒ NO

If "yes," **STOP** and **complete the FULL EAS FORM**.

2. *Project Name* 737 Fourth Avenue Rezoning

3. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency) 19DCP127K	BSA REFERENCE NUMBER (if applicable)
ULURP REFERENCE NUMBER (if applicable) 200029ZMK N200030ZRK	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA)

4a. *Lead Agency Information*			**4b. *Applicant Information***		
NAME OF LEAD AGENCY New York City Department of City Planning			NAME OF APPLICANT 737 Fourth Avenue, LLC		
NAME OF LEAD AGENCY CONTACT PERSON Olga Abinader			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON Tucker Reed		
ADDRESS 120 Broadway, 31st Floor			ADDRESS 55 Washington Street, Suite 710		
CITY New York	STATE NY	ZIP 10271	CITY Brooklyn	STATE NY	ZIP 11201
TELEPHONE (212) 720-3423	EMAIL oabinad@planning.nyc.gov		TELEPHONE (718) 422-0403	EMAIL tucker@totembrooklyn.com	

5. *Project Description*

The applicant, 737 Fourth Avenue, LLC, seeks a zoning map amendment that would affect a portion of Brooklyn Block 652 in the Greenwood Heights neighborhood of Brooklyn Community District (CD) 7, and a related zoning text amendment to Appendix F of the New York City Zoning Resolution (ZR) to establish the proposed rezoning area (or, the "Project Area") as a Mandatory Inclusionary Housing (MIH) area subject to the affordability requirements of Option 1 of the MIH program (collectively, the "Proposed Actions"). The Project Area consists of an approximately 20,034 square foot (sf) portion of Block 652, comprising all of Lots 1 and 7, and is bounded by Fourth Avenue to the northwest, 24th Street to the northeast, 25th Street to the southwest, and a line parallel to and 100 feet southeast from Fourth Avenue to the southeast. The proposed zoning map amendment would change the zoning of the Project Area from M1-1D to R8A. In addition, a C2-4 commercial overlay would be mapped to a depth of 100 feet along the southwest side of Fourth Avenue between 24th and 25th streets.

The Proposed Actions would facilitate the development of an approximately 127,825 gross square foot (gsf) mixed-use building at 737 Fourth Avenue (Lot 1, or "Projected Development Site 1") containing affordable housing and local retail by the applicant. Projected Development Site 1 will have approximately 8,896 gsf of local retail on the ground floor with approximately 115,411 gsf (142 dwelling units [DUs]) of residential uses above (of which, 25 percent or up to 35 units would be designated as permanently affordable pursuant to Option 1 of the City's MIH program). The proposed development would be built to the street line along Fourth Avenue and 25th Street, and would rise 14-stories (rising up to a height of approximately 145 feet tall) with a qualifying ground floor, based on the proposed zoning. Local retail would be located along the building's Fourth Avenue frontage with the residential entrance along 25th Street. The proposed development would also provide approximately 45 below-grade accessory off-street parking spaces, which would be accessed from curb cuts located at the rear of the building along 25th Street. It is anticipated that the proposed development would be constructed and fully occupied by 2021.

In addition, for reasonable worst-case environmental analysis purposes, it is assumed that the proposed rezoning would allow for the redevelopment of a second applicant-owned site at Block 652, Lot 7 ("Projected Development Site 2") pursuant to R8A/C2-4 zoning regulations. Projected Development Site 2 would comprise of an approximately 41,525 gsf

mixed-use building containing approximately 38,405 gsf (47 DUs) of residential uses (of which, up to 12 units would be designated as permanently affordable pursuant to MIH) and 3,120 gsf of local retail. It is anticipated that Projected Development Site 2 would be redeveloped by 2024. Accordingly, the EAS will use 2024 as the Build Year for analysis of future conditions consistent with *CEQR Technical Manual* guidance.

As such, in the 2024 future with the Proposed Actions (the "With-Action condition"), the reasonable worst-case development scenario (RWCDS) would result in a net increment of approximately 158,344 gsf of residential space and approximately 2,925 gsf of commercial (local retail) space at the Project Area compared to the 2024 future without the Proposed Actions (the "No-Action condition"). The Proposed Actions would result in a net increment 189 DUs on the projected development sites, of which up to 47 units would be designated as permanently affordable pursuant to the MIH program.

Project Location

BOROUGH Brooklyn	COMMUNITY DISTRICT(S) 7	STREET ADDRESS 737 Fourth Avenue and 731 Fourth Avenue
TAX BLOCK(S) AND LOT(S) Block 625; Lots 1, 7		ZIP CODE 11232

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS The Project Area (Block 652, Lots 1, 7) comprises an approximately 20,034 portion of Block 652, which is bounded by Fourth Avenue to the northwest, 24th Street to the northeast, 25th Street to the southwest, and a line parallel to and 100 feet southeast from Fourth Avenue to the southeast.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY M1-1D | ZONING SECTIONAL MAP NUMBER 16d

6. *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:

7. *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.): Area to be rezoned: 20,034 sf
Waterbody area (sq. ft) and type: 0 sf
Roads, buildings, and other paved surfaces (sq. ft.): N/A
Other, describe (sq. ft.): N/A

8. *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): 127,825 gsf on Projected Development Site 1; 41,525 gsf on Projected Development Site 2

NUMBER OF BUILDINGS: 1 building on Projected Development Site 1; 1 building on Projected Development Site 2

GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 127,825 gsf on Projected Development Site 1; 41,525 gsf on Projected Development Site 2

HEIGHT OF EACH BUILDING (ft.): The building on Projected Development Site 1 would have a maximum building height of 145 feet; the building on Projected Development Site 2 would have a maximum building height of 130 feet.

NUMBER OF STORIES OF EACH BUILDING: The building on Projected Development Site 1 would have up to 14-stories; the building on Projected Development Site 2 would have up to 12-stories.

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: 20,034 sf (Lots 1, 7)
The total square feet not owned or controlled by the applicant: N/A

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 permanent and temporary disturbance (if known):
AREA OF TEMPORARY DISTURBANCE: 15,017 sq. ft. (width x length)
VOLUME OF DISTURBANCE: TBD cubic ft. (width x length x depth)
AREA OF PERMANENT DISTURBANCE: 15,017 sq. ft. (width x length)

Description of Proposed Uses (please complete the following information as appropriate)

	Residential	***Commercial***	***Community Facility***	***Industrial/Manufacturing***
Size (in gross sq. ft.)	153,816 gsf	12,016 gsf	0	0
Type (*e.g.,* retail, office, school)	189 units	Local retail	N/A	N/A

Does the proposed project increase the population of residents and/or on-site workers? ☒ YES ☐ NO
If "yes," please specify: NUMBER OF ADDITIONAL RESIDENTS: 562 NUMBER OF ADDITIONAL WORKERS: 45
Provide a brief explanation of how these numbers were determined: The number of additional residents is based on the average household size of Brooklyn Community District 7 (2.97 persons/household from the 2010 Census). The number of additional workers is based on the rate of 3 workers per 1,000 sf of local retail, 1 worker per 50 parking spaces, and 1 worker per every 25 DUs.

Does the proposed project create new open space? ☐ YES ☒ NO If "yes," specify size of project-created open space: sq. ft.

Has a No-Action scenario been defined for this project that differs from the existing condition? ☐ YES ☒ NO
If "yes," see Chapter 2, "Establishing the Analysis Framework" and describe briefly:

9. *Analysis Year* CEQR Technical Manual Chapter 2

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2024

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: Projected Development Site 1: 22 months; Projected Development Site 2: 22 months

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

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: Refer to Attachment B for construction phasing and schedule.

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

☒ RESIDENTIAL ☒ MANUFACTURING ☒ COMMERCIAL ☐ PARK/FOREST/OPEN SPACE ☒ OTHER, specify: Institutional/Public facilities

Figure 1
Project Location

Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- 400-ft Radius
- 652 Tax Block
- 1 Tax Lot
- Existing Buildings

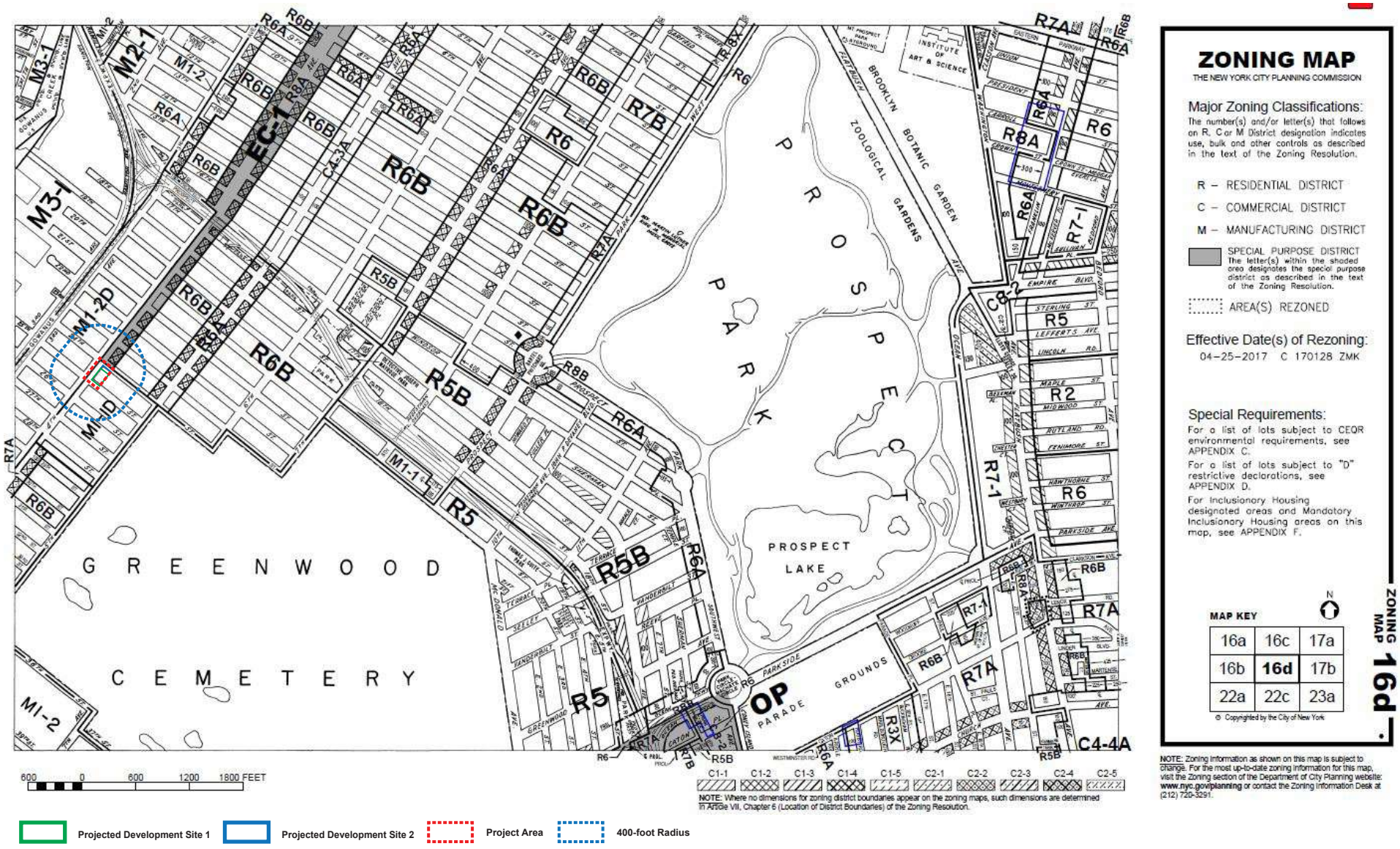
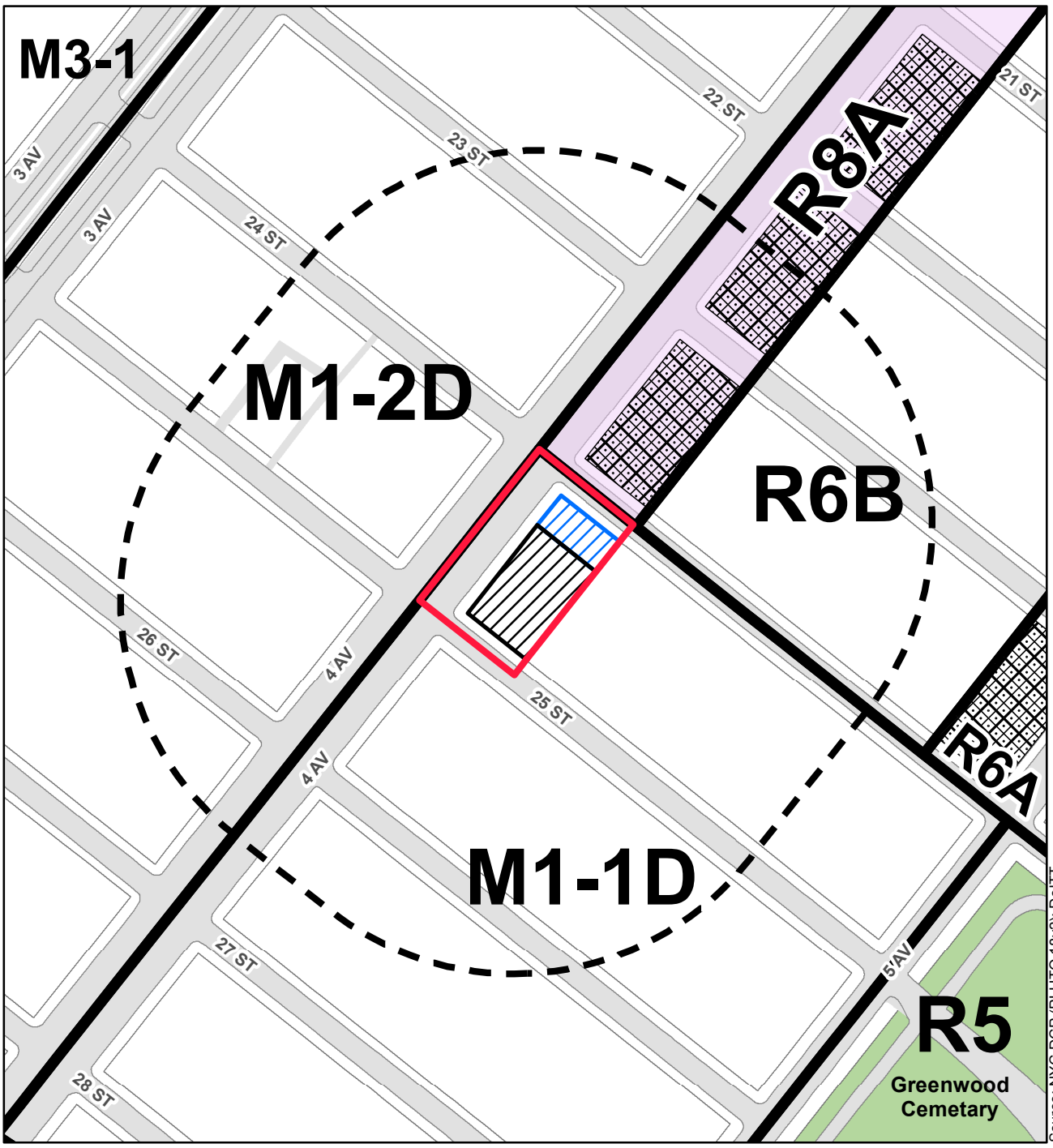


Figure 2a
Existing Zoning

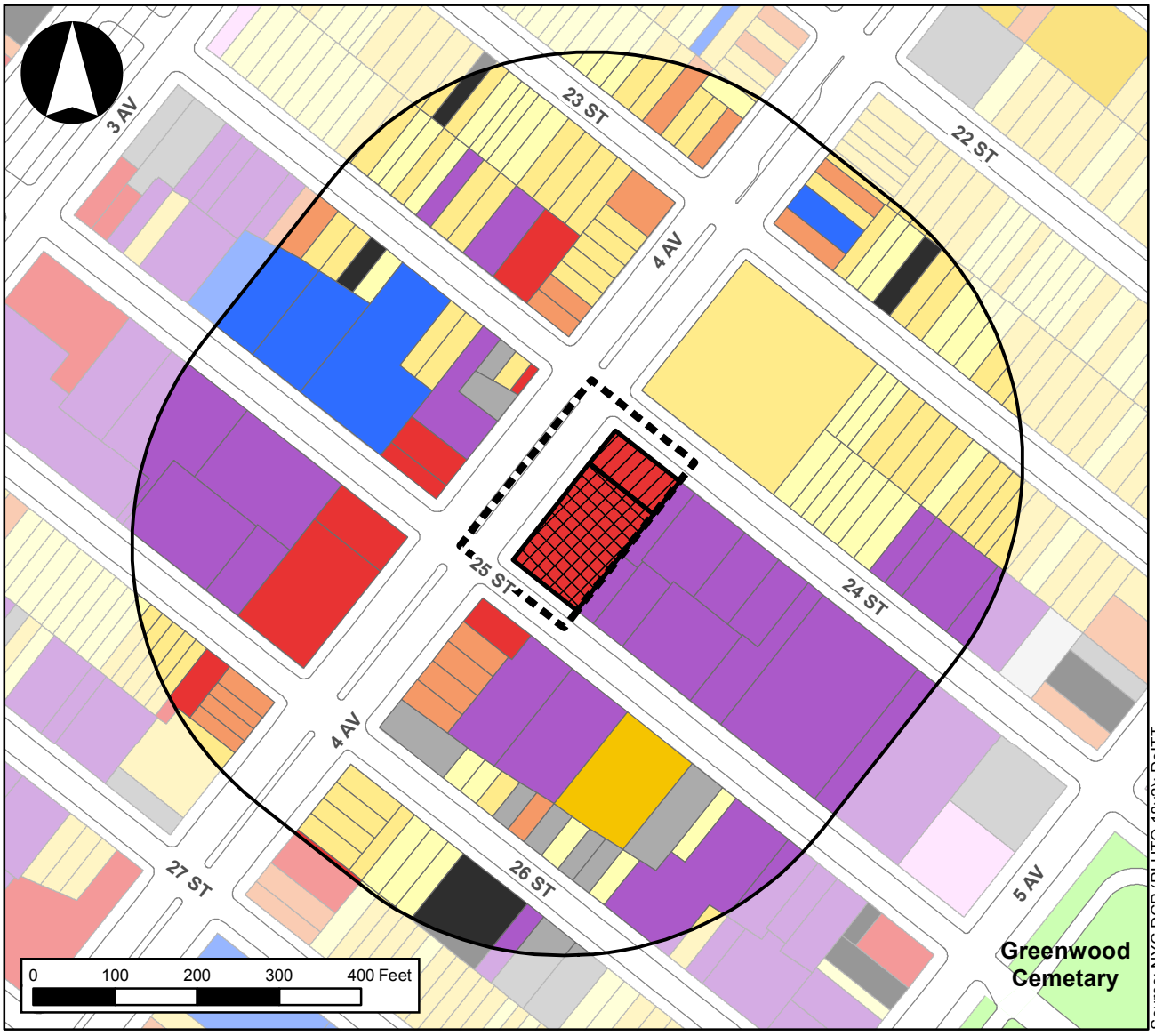
Figure 2b
Existing Zoning



Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- 400-ft Radius
- M1-1D Zoning District
- C2-4 Commercial Overlay
- Special Enhanced Commercial District 1

Figure 3
Land Use Map

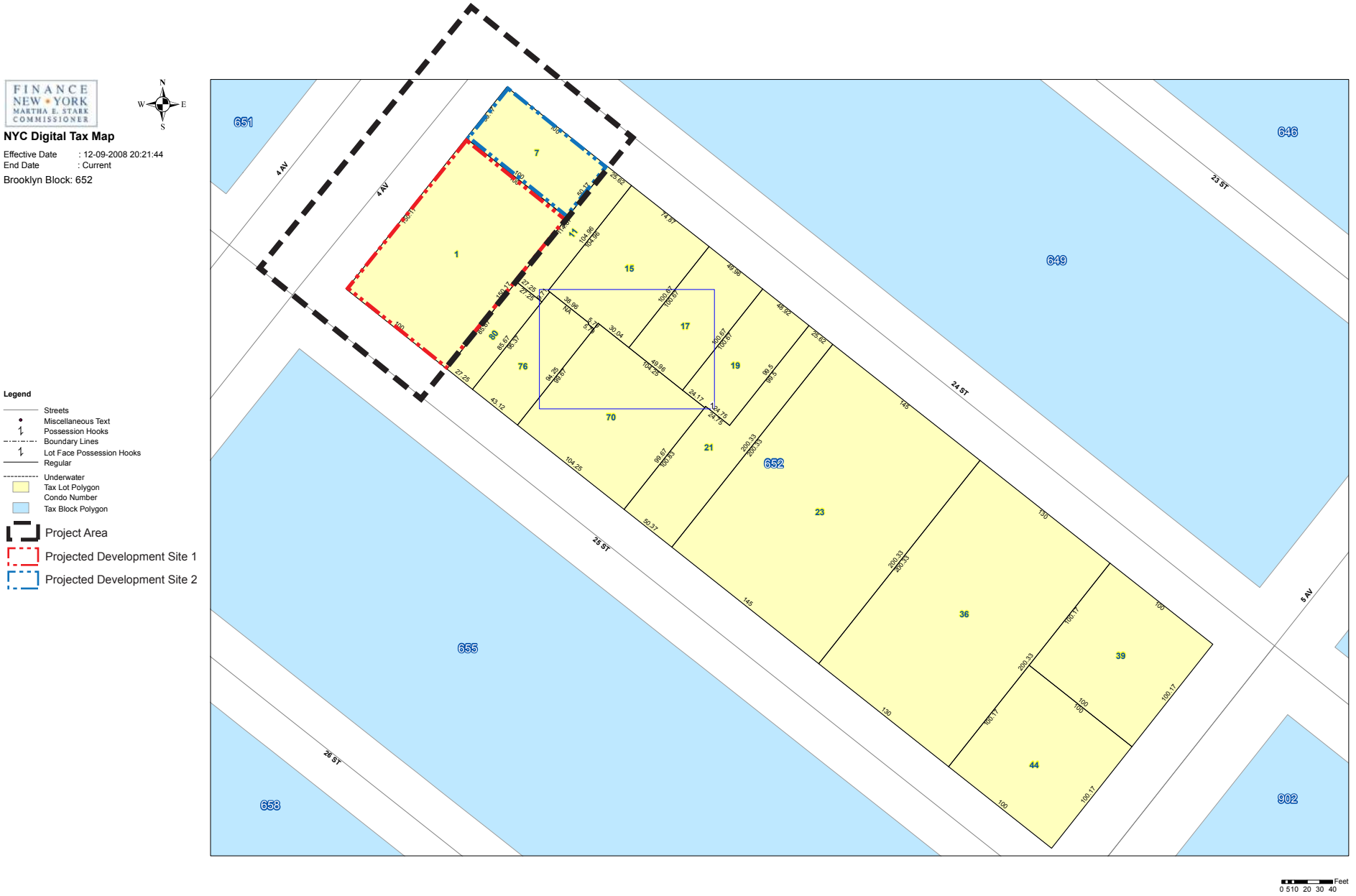


Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- 400-ft Radius

Land Uses

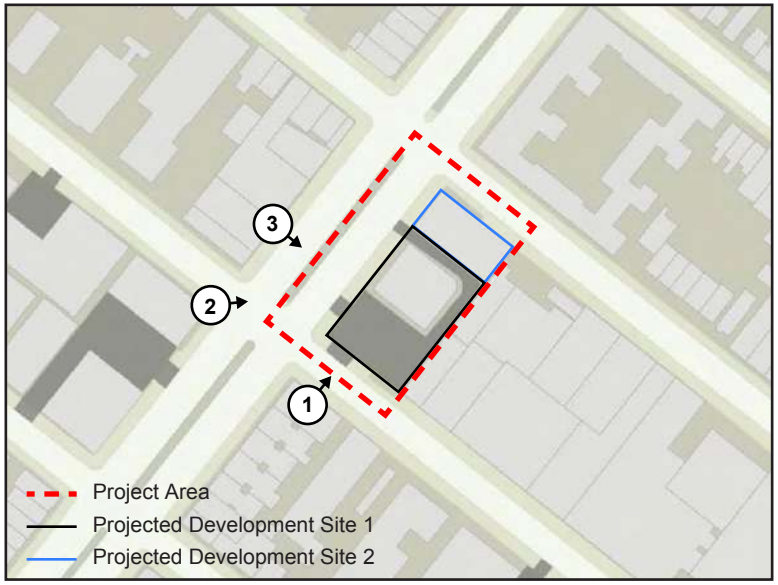
- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Building
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land


FINANCE
NEW YORK
MARTHA E. STARK
COMMISSIONER
NYC Digital Tax Map
Effective Date : 12-09-2008 20:21:44
End Date : Current
Brooklyn Block: 652
N
W
E
S
Legend
Streets
Miscellaneous Text
Possession Hooks
Boundary Lines
Lot Face Possession Hooks
Regular
Underwater
Tax Lot Polygon
Condo Number
Tax Block Polygon
Project Area
Projected Development Site 1
Projected Development Site 2
651
646
649
655
652
653
902
4 AV
23 ST
24 ST
25 ST
26 ST
5 AV
1
7
11
15
17
19
21
23
36
39
44
70
76
80
Feet
0 5 10 20 30 40

1.) Looking northeast towards Projected Development Site 1 from 25th Street.

2.) Looking east towards the Project Area from the intersection of Fourth Avenue and 25th Street.

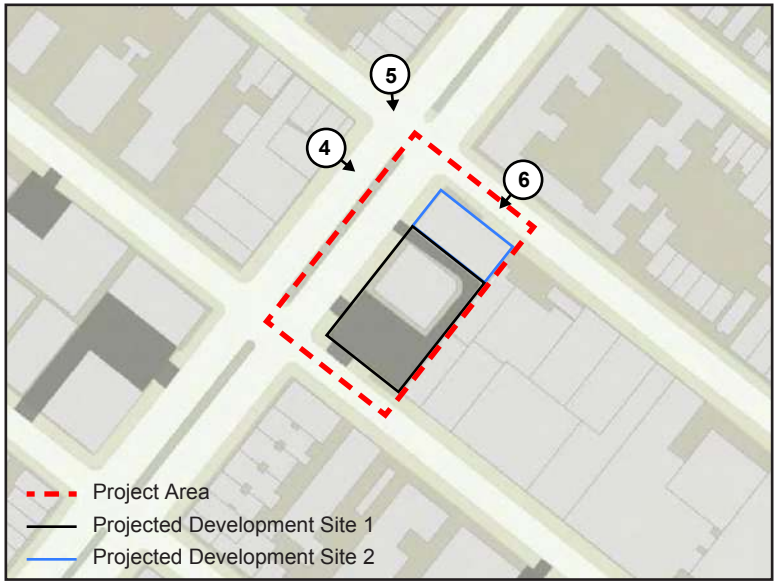
3.) Looking southeast towards Projected Develpment Site 1 from Fourth Avenue.



4.) Looking southeast towards Projected Development Site 2 from Fourth Avenue.

5.) Looking south towards the Project Area from the intersection of Fourth Avenue and 24th Street.

6.) Looking southwest towards Projected Develpment Site 2 along 24th Street.



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 Short 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 200 or more residential units?	☐	☒
○ Generate a net increase of 200,000 or more square feet of commercial space?	☐	☒
○ Directly displace more than 500 residents?	☐	☒
○ Directly displace more than 100 employees?	☐	☒
○ Affect conditions in a specific industry?	☐	☒
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, hospitals and other health care facilities, day care centers, police stations, or fire stations?	☐	☒
(b) Indirect Effects		
○ **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)	☐	☒
○ **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)	☐	☒
○ **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)	☒	☐
○ **Health Care Facilities and Fire/Police Protection:** Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the proposed 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?	☐	☒
○ If "yes," would the proposed project generate more than 50 additional residents or 125 additional employees?	☐	☐
(c) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
○ If "yes," would the proposed project generate more than 350 additional residents or 750 additional employees?	☐	☐
(d) If the project in located an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	☒	☐

	YES	NO
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?	☐	☒
6. *HISTORIC AND CULTURAL RESOURCES*: CEQR Technical Manual Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	☐	☒
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	☐	☒
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources.		
7. *URBAN DESIGN AND VISUAL RESOURCES*: CEQR Technical Manual Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	☒	☐
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	☐	☒
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 proposed 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: Yes, and as a result, a Phase II was prepared; see Appendix I and II	☒	☐
10. *WATER AND SEWER INFRASTRUCTURE*: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	☐	☒
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	☐	☒
(c) If the proposed project located in a separately sewered area, would it result in the same or greater development than the amounts listed in Table 13-1 in Chapter 13?	☐	☐
(d) Would the proposed project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	☐	☒

	YES	NO
(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 generate contaminated stormwater in a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
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): 10,597		
○ 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?	☐	☒
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): 22,661,245,600		
(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 screening analyses, attach appropriate 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 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) Potential Building-on-Building impacts	☒	☐
(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?	☐	☒
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) If "yes" to any of the above, would the project require a GHG emissions assessment based on the guidance in Chapter 18?	☐	☐
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?	☒	☐

	YES	NO
(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?	☐	☒
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 Actions 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 Actions and associated RWCDS do 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 Actions 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. See Attachment B		

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	DATE
SIGNATURE	

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? ☐ YES ☒ NO

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 Deputy Director, Environmental Assessment and Review Division	LEAD AGENCY Department of City Planning on behalf of the City Planning Commission 120 Broadway, 31st Fl. New York, NY 10271 I 212.720.3328
NAME Stephanie Shellooe	DATE August 14, 2020
SIGNATURE	

NEGATIVE DECLARATION

Statement of No Significant Effect

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

Reasons Supporting this Determination

The above determination is based on information contained in this EAS, which finds the proposed actions sought before the City Planning Commission would not have a significant adverse impact on 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 the EAS. A significant adverse impact would occur if a proposed action would generate a land use incompatible with the surrounding area. The proposed actions are a Zoning Map Amendment to rezone the project area (Brooklyn Block 652, Lots 1 and 7) a from M1-1D to R8A/C2-4 and a Zoning Text Amendment to establish a Mandatory Inclusionary Housing area coterminous with the rezoning area in the Greenwood neighborhood of Brooklyn Community District 7. The proposed actions would facilitate the development of an approximately 127,825 gross square foot (gsf) mixed-use building at 737 Fourth Avenue (Lot 1) containing affordable housing and local retail by the applicant. The proposed development will have approximately 8,896 gsf of local retail on the ground floor with approximately 115,411 gsf of residential uses above. The proposed development would also provide approximately 45 below-grade accessory off-street parking spaces. In addition, for reasonable worst-case environmental analysis purposes, it is assumed that the proposed rezoning would allow for the redevelopment of a second applicant-owned site at (Lot 7) pursuant to R8A/C2-4 zoning regulations; the second projected development site would comprise of an approximately 41,525 gsf of mixed-use building containing approximately 38,405 gsf of residential uses and 3,120 gsf of retail. As such, the proposed actions would not introduce a new land use, nor affect the existing mixed-use character of the area, nor affect public policy, which represent the thresholds of impact significance in the 2014 CEQR Technical Manual. The analysis concludes that no significant adverse impacts related to Land Use, Zoning, and Public Policy would result from the proposed actions.

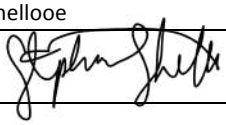
Open Space

A preliminary assessment of the effects of the proposed actions related to open space is included in the EAS. According to the 2014 CEQR Technical manual, 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. In areas with higher open space ratios, closer to 2.5 acres per 1,000 residents, a greater percentage of change (more than five percent) may be tolerated. In the future with the Proposed Actions, ratios of open space would continue to be lower than the measure of open space adequacy and the CEQR planning guidance for total, passive, and active open spaces. The total residential study area open space ratio would decline by 3.55 percent to 0.183 acres per 1,000 residents; the active residential study area open space ratio would decline by 3.55 percent to 0.128 acres per 1,000 residents; and the passive residential study area open space ratio would decrease 3.55 percent to 0.055 acres per 1,000 residents. Therefore, the proposed actions would not result in a significant adverse impact related to open space.

Hazardous Materials, Air Quality, and Noise

An (E) designation (E-575) 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 the (E) designation in place, the proposed actions would not result in a significant adverse impacts related to hazardous materials, air quality, and 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). Should you have any questions pertaining to this Negative Declaration, you may contact Katherine Glass at 212-720-3425.

TITLE	LEAD AGENCY
Deputy Director, Environmental Assessment and Review Division	Department of City Planning on behalf of the City Planning Commission 120 Broadway, 31st Fl. New York, NY 10271 | 212.720.3328
NAME Stephanie Shellooe	DATE August 14, 2020
SIGNATURE 	
TITLE Chair, City Planning Commission	
NAME Marisa Lago	DATE August 17, 2020
SIGNATURE	

Project Name: 737 Fourth Avenue
CEQR # 19DCP127K
SEQRA Classification: Unlisted

Determination of Significance Appendix

The Proposed Action(s) were determined to have the potential to result in changes to development on the following site(s):

Development Site	Borough	Block and Lot
Projected Development Site 1	Bk	Block 652 Lot 1
Projected Development Site 2	Bk	Block 652 Lot 7

(E) Designation Requirements

To ensure that the proposed actions would not result in significant adverse impacts related to hazardous materials, air quality, and noise an (E) designation (E-575) would be established as part of approval of the proposed actions on Projected Development Sites 1 and 2 as described below:

Development Site	Hazardous Materials	Air Quality	Noise
Projected Development Site 1	X	X	X
Projected Development Site 2	X	X	X

Hazardous Materials

The (E) designation requirements applicable to **Projected Development Sites 1 and 2** for hazardous materials would apply as follows:

Task 1-Sampling Protocol

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

Task 2-Remediation Determination and Protocol

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

Project Name: 737 Fourth Avenue
CEQR # 19DCP127K
SEQRA Classification: Unlisted

Air Quality

The (E) designation requirements for air quality would apply as follows:

Block 652, Lot 1 (Projected Development Site 1): *Any new residential and/or commercial development on the above-referenced property must ensure the heating, ventilation and air conditioning (HVAC) systems and hot water equipment stack is located at the highest tier or at least 148 feet above grade to avoid any potential significant adverse air quality impacts.*

Block 652, Lot 7 (Projected Development Site 2): *Any new residential and/or commercial development on the above-referenced property must use natural gas as the type of fuel for heating, ventilation and air conditioning (HVAC) systems and hot water equipment, and ensure that the HVAC stack is located at the highest tier or at least 171.4 feet above grade and at most 15 feet from the lot line facing 25th Street to avoid any potential significant adverse air quality impacts.*

Noise

The (E) designation requirements for noise would apply as follows:

Block 652, Lot 1 (Projected Development Site 1): *To ensure an acceptable interior noise environment, future residential/commercial office uses must provide a closed-window condition with a minimum of 31 dBA of composite window/wall attenuation on façades facing Fourth Avenue or facades facing 24th Street or 25th Street within 50 feet from Fourth Avenue to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial office uses. To maintain a closedwindow condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.*

Block 652, Lot 7 (Projected Development Site 2): *To ensure an acceptable interior noise environment, future residential/commercial office uses must provide a closed-window condition with a minimum of 31 dBA of composite window/wall attenuation on all facades facing Fourth Avenue or facades facing 24th Street or 25th Street within 50 feet from Fourth Avenue to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial office uses. In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.*

Attachment A
Project Description

737 Fourth Avenue Rezoning EAS
Attachment A: Project Description

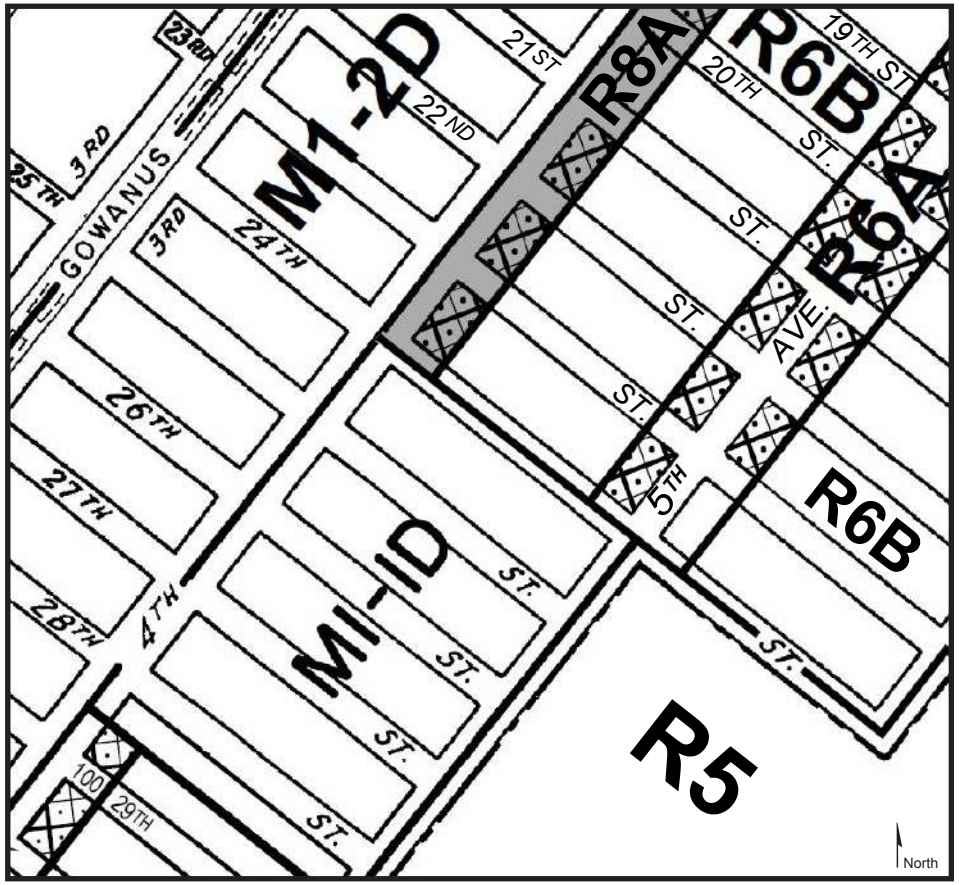
I. INTRODUCTION

737 Fourth Avenue, LLC ("the Applicant") is seeking several discretionary actions to facilitate the development of a 14-story mixed-use building comprising approximately 127,825 gross square feet (gsf) of residential and ground-floor retail uses (the "proposed development" or "Projected Development Site 1") on Brooklyn Block 652, Lot 1 in the Greenwood Heights neighborhood of Brooklyn Community District (CD) 7 (see Figure 1, "Project Location"). The proposed discretionary actions include: (i) a zoning map amendment to rezone an approximately 20,034 square foot (sf) portion of Brooklyn Block 652 (the "Project Area") from M1-1D district to R8A/C2-4 district (refer to Figure A-1, "Existing and Proposed Zoning"); (ii) a zoning map amendment to designate the Project Area as part of the Special Enhanced Commercial District 1 (EC-1); (iii) a zoning text amendment to Zoning Resolution (ZR) Section 132-11(a)(1) to designate the Project Area as part of the Special EC-1 District; and, (iv) a zoning text amendment to ZR Appendix F to designate the proposed R8A/C2-4 district as a Mandatory Inclusionary Housing (MIH) Area. Collectively, the zoning map and zoning text amendments are the "Proposed Actions" for the purposes of the environmental analysis.

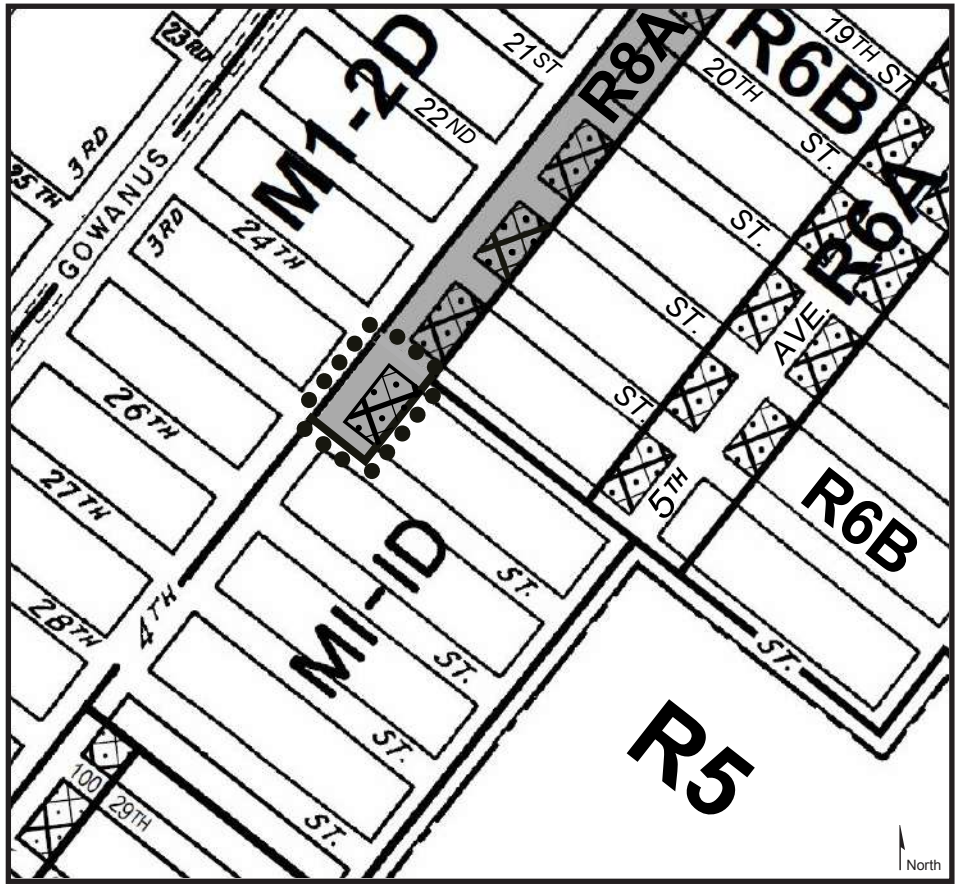
As shown in Figure 4 of the EAS Form, the Project Area consists of the northwestern portion of Brooklyn Block 652, including all of Lots 1 and 7. In total, the Project Area comprises approximately 20,034 sf, which is bounded by Fourth Avenue to the northwest, 24th Street to the northeast, 25th Street to the southwest, and a line parallel to and 100 feet southeast from Fourth Avenue to the southeast.

The Applicant-owned development site ("Projected Development Site 1") comprising Lot 1 is an approximately 15,017 sf rectangular-shaped lot, which contains approximately 150 feet of frontage along the east side of Fourth Avenue and approximately 100 feet of frontage along the north side of 25th Street. As shown in Figure A-2, Projected Development Site 1 is currently occupied by a single-story (15-feet in height), approximately 4,774 gsf commercial building that accommodates a Dunkin Donuts/Baskin Robbins eating and drinking establishment, an accessory drive-through, and 11 at-grade, off-street, accessory parking spaces that are accessible from Fourth Avenue and 25th Street.

In the future with the Proposed Actions, the Applicant proposes to construct a new 14-story (145-feet in height) residential building with ground floor retail on Projected Development Site 1, with a total of approximately 127,825 gsf (108,118 zoning square feet [zsf]), with a floor area ratio (FAR) of 7.2. It is anticipated that the proposed development would contain a total of 115,411 gsf (99,534 zsf) of residential space with approximately 142 dwelling units (DUs) on the building's upper floors and approximately 8,896 gsf (8,585 zsf) of commercial (local retail) space on the ground floor, as well as approximately 45 accessory



Existing Zoning Map (16d)



Proposed Zoning Map (16d)
Area to be rezoned is outlined with dotted lines

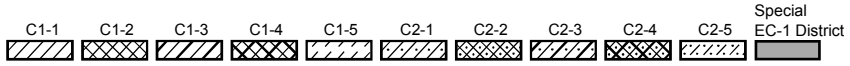


Figure A-1
Existing and Proposed Zoning

Figure A-2
Aerial Photo

Source: NYC DCP (PLUTO 18v2); DoITT; Google Map data (2018)

Legend

- Project Area
- 400-ft Radius
- Projected Development Site 1
- Projected Development Site 2

parking spaces in a single cellar level. Of the proposed residential units, 25 percent or up to 35 units would be designated as permanently affordable pursuant to Option 1 of the City's MIH program.[1]

In addition, for reasonable worst-case environmental analysis purposes, it is assumed that the proposed rezoning would allow for the redevelopment of Block 652, Lot 7 ("Projected Development Site 2") pursuant to R8A/C2-4 zoning regulations. As described further below, Projected Development Site 2 would be comprised of approximately 41,525 gsf (36,122 zsf), with approximately 38,405 gsf (47 DUs) of residential uses and 3,120 gsf of local retail.

It is expected that both projected developments would be completely constructed and fully occupied by 2024.

This attachment provides a summary and description of the Proposed Actions, including Project Area location, existing conditions of the Project Area, project purpose and need, project description, reasonable worst-case development scenario (RWCDS) under the No-Action and With-Action conditions, and the governmental approvals required. The attached supplemental studies examine the potential for the Proposed Actions to result in impacts in any City Environmental Quality Review (CEQR) technical areas, including separate attachments with detailed analyses of land use, zoning, and public policy;; open space; urban design and visual resources; air quality; and noise in Attachments C through G, respectively. All other preliminary screening assessments are summarized in Attachment B, "Supplemental Screening."

II. BACKGROUND AND EXISTING CONDITIONS

Project Area

The Project Area, 731-747 Fourth Avenue, includes all of Brooklyn Block 652, Lots 1 and 7. The Project Area is located within Brooklyn CD 7. The Project Area has a lot area of approximately 20,034 sf and is bounded by Fourth Avenue to the northwest, 24th Street to the northeast, 25th Street to the southwest, and a line parallel to and 100 feet southeast from Fourth Avenue to the southeast (refer to Figure A-2).

As presented in Figure A-1, the Project Area is currently located within a M1-1D district. M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities (Use Groups 4 to 14, 16, and 17). Offices, hotels, and most retail uses are also permitted, while certain community facilities, such as hospitals, are allowed in M1 districts only by special permit. Though residential uses are generally not permitted in M1 districts, they may be permitted in M1-1D districts by authorization of the City Planning Commission (CPC) pursuant to ZR 42-47. M1-1D districts have a maximum industrial/commercial FAR of 1.0 and a maximum community facility FAR of 2.4; permitted residential uses pursuant to ZR 42-47 would have a maximum residential FAR of 1.65. Building heights for commercial or industrial developments in M1-1D districts are governed by the sky-exposure plane; the maximum building height for residential developments is 32 feet.

[1] Pursuant to MIH, Option 1 would require 25 percent of the residential floor area be designated as affordable housing units for residents with incomes not exceeding 60 percent of area median income (AMI). However, for the purpose of a conservative CEQR analysis, the most conservative MIH option for each CEQR section has been used in this EAS for screening and analysis.

The proposed zoning map amendments would rezone the Project Area from M1-1D to R8A with a C2-4 commercial overlay mapped to a depth of 100 feet along the east side of Fourth Avenue between 24th and 25th streets, and would also extend the Special EC-1 District south into the Project Area (refer to Figure A-1). The proposed rezoning would affect the Applicant-owned proposed development site ("Projected Development Site 1") at Lot 1, as well as an additional Applicant-owned site ("Projected Development Site 2") at Lot 7 (see Table A-1), described further below.

TABLE A-1
Project Area – Existing Conditions on Brooklyn Block 652

Lot	Address	Total Lot Area (sf)	Owner	Zoning	Land Use	Building (sf)	Built FAR
1	737 Fourth Avenue	15,017	737 FOURTH AVENUE LLC	M1-1D	Local Retail & Accessory Parking	4,774	0.32
7	731 Fourth Avenue	5,017	731 4TH AVE LLC	M1-1D	Local Retail & Auto Repair	4,317	0.86
Total Area		***20,034***					

Sources: NYC DCP 2018 PLUTO Data (v1); PHA Site Visit (September 2018).

Applicant-Owned Lot 1 (a.k.a. *Projected Development Site 1*)

The Applicant-owned proposed development site, or Projected Development Site 1, at 737 Fourth Avenue (Brooklyn Block 652, Lot 1) is a rectangular shaped property that has approximately 150 feet of frontage along the east side of Fourth Avenue and approximately 100 feet of frontage along the north side of 25th Street (refer to Figure 4 in the EAS Form) with a lot area of approximately 15,017 sf. As shown in Figure A-1 and Figure 2 in the EAS Form, Projected Development Site 1 is currently zoned M1-1D. As discussed above, M1-1D districts generally permit Use Groups 4 to 14, 16 and 17, and has a maximum FAR of 1.0 for industrial/commercial uses and 2.4 for community facility uses.

Projected Development Site 1 is currently occupied by a single-story (15-feet in height) building containing an eating and drinking establishment (i.e., Dunking Donuts/Basking Robbins) with approximately 4,774 gsf of retail space (0.32 FAR), which was constructed in 2002. The site also includes an accessory drive-through and an 11-space at-grade accessory off-street parking lot, which is accessible from curb cuts on Fourth Avenue and 25th Street. Historical usage of the site indicates that it was first developed between 1906 and 1924 and used as a gasoline and auto repair service station up until at least 1997.

Applicant-Owned Lot 7 (a.k.a. *Projected Development Site 2*)

The second Applicant-owned site, or Projected Development Site 2, at 731 Fourth Avenue (Brooklyn Block 652, Lot 7) is a rectangular shaped property adjacent to Projected Development Site 1 that has approximately 50 feet of frontage along the east side of Fourth Avenue and approximately 100 feet of frontage along the south side of 24th Street (refer to Figure 4 in the EAS Form) with a lot area of approximately 5,017 sf. As shown in Figure A-1 and Figure 2 of the EAS Form, Projected Development Site 2 is currently zoned M1-1D. Projected Development Site 2 is currently occupied by a two-story (29-feet in height) building containing several commercial uses including eating and drinking establishments, an autobody repair, and a vehicle lease return office, with approximately 4,317 gsf of commercial space (0.86 FAR), which was constructed in 1960 with alterations in 1973 and 1984.

Neighborhood Context

The area surrounding the Project Area is characterized by a wide variety of industrial, commercial, residential, and community facility land uses and various building types. The Project Area is in the Greenwood Heights neighborhood of Brooklyn, located one block northwest of Greenwood Cemetery. As shown in Figure 2 in the EAS Form, the surrounding area within an approximate 400-foot radius is zoned M1-1D to the south, M1-2D to the northwest, and R6B and R8A to the northeast. The R8A district located directly north of the Project Area is also designated as a Special EC-1 District, which is mapped along the east side of Fourth Avenue between Atlantic Avenue and 24th Street. Additionally, a C2-4 commercial overlay is mapped at a depth of 100 feet along the east side of Fourth Avenue north of 24th Street. The M1-2D zoning district permits similar uses as the M1-1D, but allows for a maximum permitted commercial/industrial FAR of 2.0 and a maximum community facility FAR of 4.8. Similar to M1-1D zoning district, M1-2D districts also permit residential uses by authorization of the City Planning Commission (CPC) pursuant to ZR 42-47, and would have a maximum residential FAR of 1.65. The R6B and R8A zoning districts both permit residential and community facility uses in Use Groups 1 to 4, and have a maximum FAR of 2.0 and 6.02, respectively. The C2-4 commercial overlay permits neighborhood-oriented commercial retail and services in Use Groups 6 to 9.

The surrounding area between 24th Street and 26th Street is largely industrial, with commercial and mixed-use commercial and residential buildings located along Fourth Avenue, while the area north of 24th Street and south of 26th Street is predominantly residential. Residential uses in the surrounding area are generally characterized as two- to eight-family homes, with building heights ranging between two- to four-stories. Higher density multi-family residential buildings are located directly northeast (725 Fourth Avenue) and southeast (220 25th Street) of the Project Area, which contain 164 DUs and 23 DUs, respectively. Commercial and mixed-use commercial and residential buildings along Fourth Avenue are generally low- to mid-rise, ranging from two- to six-stories in height, with the exception of a 10-story, 99-keyed hotel building located directly southwest of the Project Area. Commercial uses within the surrounding area are primarily local retail (such as eating and drinking establishments, beauty salons, and convenience stores) and local service uses (such as wholesalers, funeral homes, laundromats, and auto repair services). Industrial uses in the surrounding area are generally characterized as one- to two-story buildings and include warehouses, bakeries, distributors, and art studios. Additionally, a house of the worship, the Our Lady of Czestochowa-St. Casimir Parish, is located west of the Project Area along the north side of 25th Street between 3rd and 4th avenues.

Area Transportation

Major thoroughfares in the surrounding area include Fourth Avenue directly west of the Project Area. Just outside the 400-foot radius, the Brooklyn-Queens Expressway (BQE) and Third Avenue are located one block west of the Project Area, while the Prospect Expressway is located approximately 0.4 miles to the northeast. Both Third and Fourth avenues are designated by the New York City Department of Transportation (DOT) as Local Truck Routes.[2]

The Project Area is served by several public transit options. The 25th Street R subway station is located directly southwest of the Project Area, with the northbound and southbound service entrances located on the southeast and southwest corners of Fourth Avenue and 25th Street, respectively. The 36th Street

[2] According to DOT, the New York City Truck Route Network is a set of roads that commercial vehicles must use in the New York City, which is comprised of two distinct classes of roadways: Local Truck Routes and Through Truck Routes (defined in Section 4-13 of the New York City Traffic Rules). The Local Truck Route Network is designated for trucks with an origin and destination within a borough. This includes trucks that are traveling to make a delivery, or for loading or servicing.

D/N/R subway station is located approximate 0.5 miles southwest of the Project Area, with station entrances on the northeast and northwest corners of Fourth Avenue and 36th Street. In addition, several local and express bus services are provided just outside the 400-foot radius, including the B63 (connecting Bay Ridge and Cobble Hill) which runs along Fifth Avenue one block east of the Project Area, the B37 (connecting Bay Ridge and Boerum Hill) which runs along Third Avenue one block west of the Project Area, and the X27 (connecting Bay Ride and Downtown/Midtown Manhattan), X28 (connecting Sea Gate/Bensonhurst and Downtown/Midtown Manhattan), X37 (connecting Bay Ridge and Midtown Manhattan), and X38 (connecting Sea Gate/Bensonhurst and Midtown Manhattan) which all run along the BQE.[3] There are also two CitiBike stations located approximately 0.5 miles southwest of the Project Area along Second Avenue: one at the 36th Street intersection, and one at the 39th Street intersection. Taken together, these transit options provide access to the Project Area from much of north Brooklyn, Manhattan and beyond.

III. DESCRIPTION OF THE PROPOSED ACTIONS

The Applicant is seeking several actions by the New York City Planning Commission (CPC): two zoning map amendments and two zoning text amendment. Each proposed zoning action is a discretionary action that is 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. These actions are detailed below.

Zoning Map Amendments

The first proposed zoning map amendment would rezone the Project Area from M1-1D to R8A, with a C2-4 commercial overlay mapped to a depth of 100 feet along the east side of Fourth Avenue between 24th and 25th streets (refer to Figure A-1). As shown in Figure 4 of the EAS Form, the Project Area includes all of Lots 1 and 7, totaling approximately 20,034 sf of lot area (see Table A-1). The second proposed zoning map amendment would designate the Project Area as part of the Special EC-1 District, effectively extending the existing EC-1 district one block south along Fourth Avenue (refer to Figure A-1).

Table A-2 compares the use and bulk requirements under the existing and proposed zoning districts. R8A zoning districts are contextual districts which allow a maximum FAR of 6.02 for residential uses (or 7.2 FAR in an Inclusionary Housing designated area) and 6.50 for community facility uses; when mapped within a C2-4 commercial overlay, commercial uses are allowed up to an FAR of 2.0. Additionally, R8A districts permit a maximum building height of 125 feet with a qualifying ground floor (or 145 in Inclusionary Housing designated areas), and mandate Quality Housing bulk regulations.

Zoning Text Amendments

The Applicant is also proposing two zoning text amendments. The first proposed text amendment would map the proposed R8A zoning district as an MIH Area by creating a new map for Brooklyn CD 7 in Appendix

[3] It should be noted that although the X27, X28, X37, and X38 express bus lines are located just outside the 400-foot study area, they are not easily accessible to Project Area occupants.

F of the New York City ZR. The MIH Area would require affordable housing to be provided pursuant to Option 1, 2, 3, or 4:

- Option 1 requires 25 percent or residential floor area must be affordable housing for residents with incomes averaging 60 percent of area median income (AMI);
- Option 2 requires 30 percent of residential floor area must be affordable housing for residents with incomes averaging 80 percent of AMI;
- Option 3 (or the "Deep Affordability Option") requires 20 percent of residential floor area must be affordable housing for residents with incomes averaging 40 percent of AMI; and
- Option 4 (or the "Workforce Option") requires at least 30 percent of residential floor area must be affordable housing for residents with incomes averaging 115 percent of AMI, with no unit targeted to a household exceeding 135 percent of AMI.

TABLE A-2
Comparison of Existing and Proposed Zoning

	Existing	Proposed
	M1-1D	**R8A (MIH)/C2-4 (EC-1)**
Use Groups	4-14, 16, 17	1-9
Maximum Permitted FAR		
Residential	1.65[1]	6.02/7.20[2]
Community Facility	2.40	6.50
Commercial	1.00	2.00
Manufacturing	1.00	Not Permitted
Total	2.40	6.50/7.20[2]

Source: *Zoning Resolution of the City of New York.*
Notes:
[1] With a CPC zoning authorization pursuant to ZR 42-47.
[2] With Inclusionary Housing bonus.

The MIH Area sets a new maximum permitted residential FAR permitted by the underlying zoning district (6.02 FAR). With both the designation of the proposed rezoning area as an MIH Area and its rezoning to a R8A zoning district, the maximum permitted FAR within the Project Area in the R8A district would be 7.2, and the maximum permitted building height would be 140 feet (145 feet with a qualifying ground floor) for MIH developments. Mapping of the MIH Area would facilitate development of a minimum of approximately 35 affordable housing units on Projected Development Site 1 (equivalent to 25 percent of the residential floor area on Lot 1, pursuant to MIH Option 1) and 12 affordable housing units on Projected Development Site 2 (equivalent to 25 percent of the residential floor area on Lot 7, pursuant to MIH Option 1), totaling a minimum of approximately 47 affordable housing units for the Project Area.

The second proposed text amendment would amend ZR Section 132-11(a)(1) to designate the Project Area as part of the Special EC-1 District. The intention of the Special EC-1 District is to ensure a lively pedestrian context by imposing transparency requirements, limiting curb cuts and establishing special use provisions to require ground-floor neighborhood services and amenities and limiting parking and residential uses on the ground floor facing Fourth Avenue to better serve the growing residential population. Specifically, the Special EC-1 District comprises of three major components for new developments or enlargements, and are as follows:

- Enlivening uses – Special Use Provisions require the entire ground floor be developed or enlarged with permitted non-residential uses, except where residential lobbies and off-street parking

facilities are permitted. Of the ground floor frontage of the zoning lot, at least 50 percent must be occupied by streetscape enlivening commercial uses to a minimum depth of 30 feet.

- Sidewalk continuity – To ensure pedestrian safety, curb cuts serving new buildings are generally limited to the side streets.

- Streetscape design – To ensure an interactive and social space along Fourth Avenue, new retail and commercial establishments are required to adhere to a minimum level of streetwall transparency.

IV. PURPOSE AND NEED FOR THE PROPOSED ACTIONS

To facilitate the proposed mixed-use residential and commercial development, the Applicant seeks (i) a zoning map amendment to rezone the Project Area from M1-1D to R8A/C2-4; (ii) a zoning map amendment to designate the Project Area as part of the Special EC-1 District; (iii) a zoning text amendment to ZR Section 132-11(a)(1) to designate the Project Area as part of the Special EC-1 District; (iv) and a zoning text amendment to make the Project Area applicable to the MIH program. The Proposed Actions would build on previous rezonings for the surrounding area, including the South Park Slope Rezoning and Text Amendment, enacted in 2005, and the Special Enhanced Commercial District 1 (EC-1), enacted in 2011. The South Park Slope Rezoning and Text Amendments (ULURP No. 060054 ZMK & N060053 ZRK) rezoned all or portions of fifty blocks in the Brooklyn neighborhoods of Park Slope South, Greenwood Heights, and Windsor Terrace, known collectively as "South Park Slope," from R5 and R6 districts to R5B, R6B, R6A, C4-3A, and R8A districts. The Special EC-1 District was created along Fourth Avenue one block to the north of the Project Area (ULURP No. C110386 ZMK and N110387 ZRK) to foster the development of a lively, commercial presence on Fourth Avenue by establishing regulations that promote a vibrant mix of commercial and community facility uses by applying ground floor use regulations, retail transparency requirements, and limitations on parking and curb cuts that enhance the pedestrian environment and create an active streetscape that better serves the growing residential populations.

The proposed zoning changes would increase the allowable residential density directing higher density development to a site fronting a wide street (Fourth Avenue) in a transit accessible area. Fourth Avenue is a major thoroughfare and serves as a major commercial strip for the area that is served by the R subway line, as well as the nearby B63 and B37 local busses which provide service between Bay Ridge, Cobble Hill, and Boerum Hill. The Project Area occupies an entire block frontage along Fourth Avenue between 24th and 25th streets, and the existing commercial uses on the Applicant-owned site are underbuilt (FAR 0.32).

The proposed zoning text amendment to designate the proposed R8A/C2-4 district of the Project Area as an MIH Area would require the Applicant to construct permanently affordable DUs. The Proposed Actions would create new affordable housing goals set forth by the City in *Housing New York: A Five-Borough, Ten-Year Plan* and *Housing New York 2.0*. *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's approved MIH program requires, through zoning actions, a share of new housing to be permanently affordable. The projected development sites would be consistent with the *Housing New York* policy by adding a minimum of approximately 47 affordable DUs to a community that anticipates population growth and has a need for such mixed-income housing.

The proposed zoning map and text amendments to designate the proposed R8A/C2-4 district of the Project Area as part of the Special EC-1 District would establish a truly natural extension of the R8A/C2-4 (EC-1) zoning from the adjacent district directly north of the Project Area. As discussed above, the proposed EC-1 map and text amendments would impose additional transparency requirements, limit curb cuts and establish special use provisions to require ground-floor neighborhood services and amenities and limit parking and residential uses on the ground floor facing Fourth Avenue, which would effectively continue to encourage the trend of mixed-use development with ground floor commercial uses along Fourth Avenue, while ensuring a lively pedestrian context.

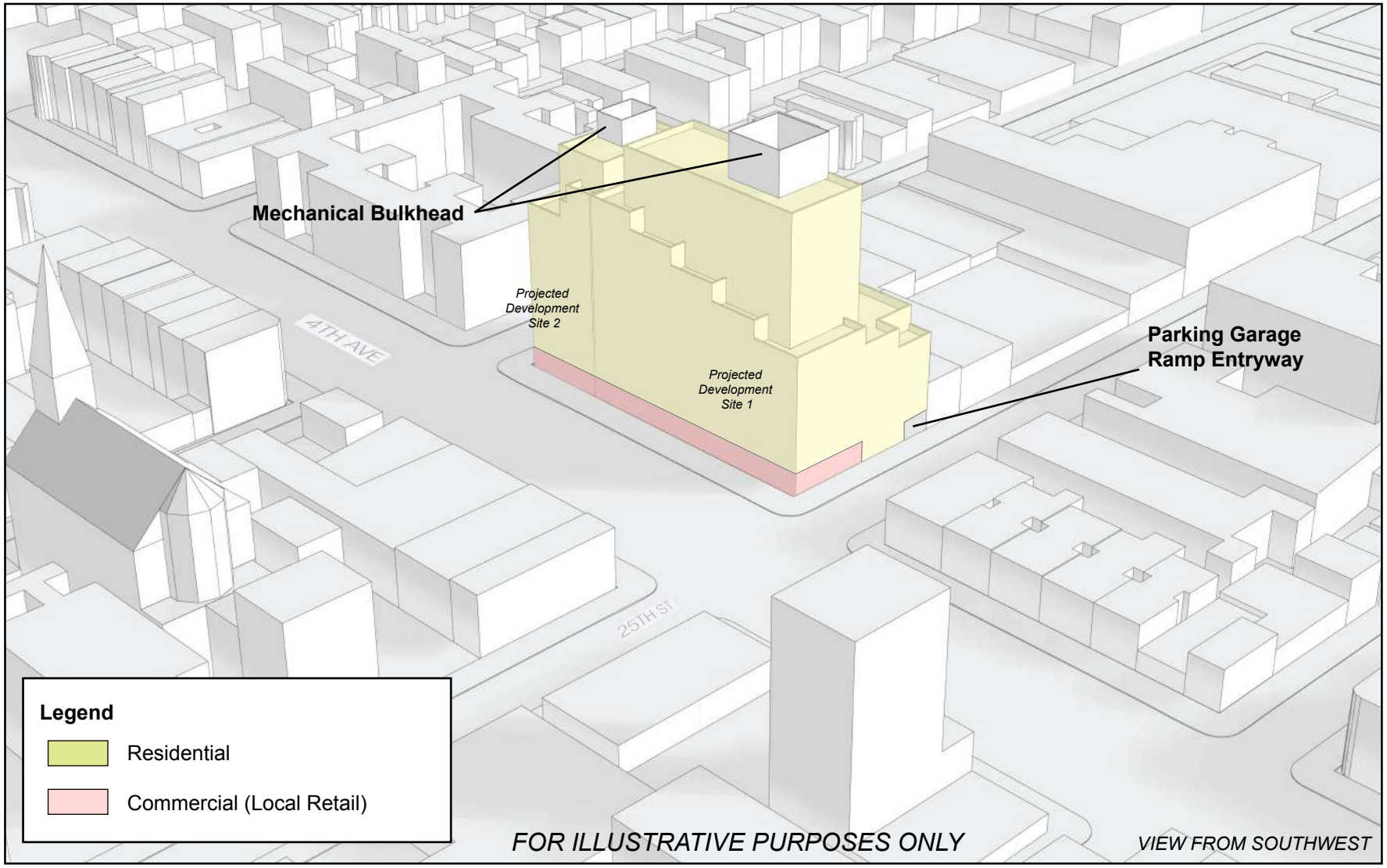
The proposed zoning map and text amendments would create additional zoning capacity in a transit accessible area to support new housing creation, and would also increase the number of affordable housing units available in New York City. The creation of new housing supply at various income levels is also 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 proximity to public transit, with 25th Street (R) Station located adjacent to the Project Area, and local bus routes traveling on Third and Fifth avenues near the Project Area.

V. DESCRIPTION OF THE PROPOSED DEVELOPMENT

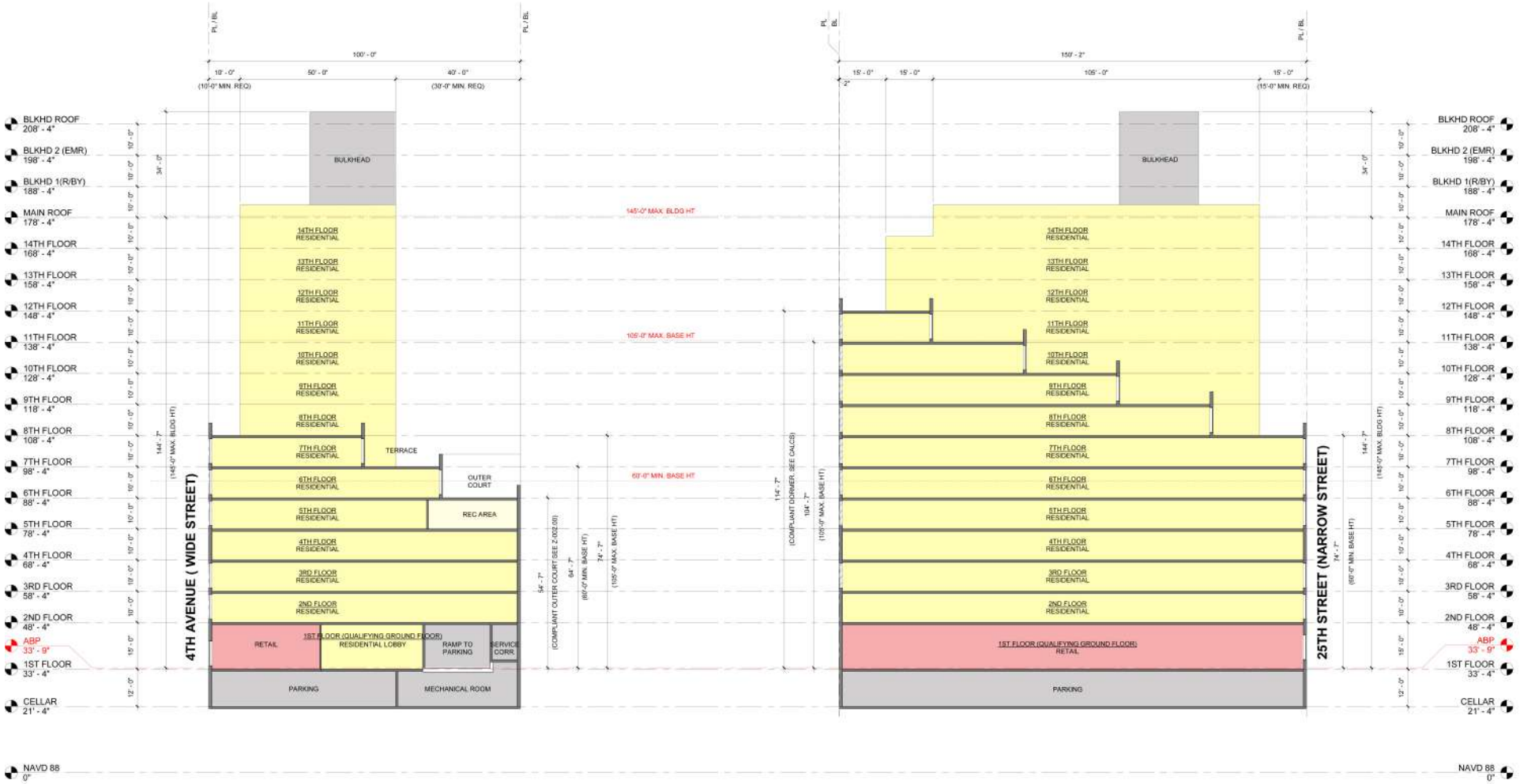
With approval of the Proposed Actions, the Applicant intends to demolish the existing building on Lot 1 and redevelop Projected Development Site 1 with a new 14-story (145-feet in height) mixed-use building with approximately 127,825 gsf of floor area (7.2 FAR). Projected Development Site 1 will have approximately 8,896 gsf of local retail on the ground floor with approximately 115,411 gsf (142 DUs) of residential uses above, and up to 25 percent of the residential floor area (up to approximately 35 units) would be designated as permanently affordable pursuant to Option 1 of the MIH program. No funding from the NYC Department of Housing Preservation and Development (HPD) or Housing Development Corporation (HDC) is being sought for the proposed development at this time. Local retail would be located along the building's Fourth Avenue frontage with the residential entrance along 25th Street. The proposed development would also provide approximately 45 below-grade accessory off-street parking spaces, which would be accessed from curb cuts located towards the rear of the building along 25th Street.

As shown in Figures A-3 and A-4, the proposed building would include a six-story base with a streetwall height of approximately 65 feet built to the street line along Fourth Avenue and 25th Street. Above the base, the building would step up to a maximum height of 14-stories (145-feet in height). As shown in Figure A-5, the residential lobby would be located on 25th Street, and the proposed below-grade garage would be accessible from a curb cut and ramp towards the rear of the building along 25th Street.

As discussed above and pursuant to the proposed zoning text amendment, the maximum FAR permitted under the MIH Program set forth in ZR Section 23-154 requires provisions of either (i) an amount equivalent to at least 25 percent of the residential floor area within the proposed development be affordable to households at an average of 60 percent AMI (Option 1); and/or (ii) an amount equivalent to at least 30 percent of the residential floor area within the proposed development affordable to households at an average of 80 percent AMI (Option 2). In conjunction with Options 1 and/or 2, the Applicant may also apply for Option 3 (Deep Affordability Option), which would require that at least 20 percent of the residential floor area within the proposed development be affordable to households at an average of 40 percent, with no unit targeted to a household exceeding 130 percent of AMI, or Option 4 (Workforce Option), which would require that at least 30 percent of the residential area be provided as



Preliminary Massing Diagram Prepared By: DENCITYWORKS

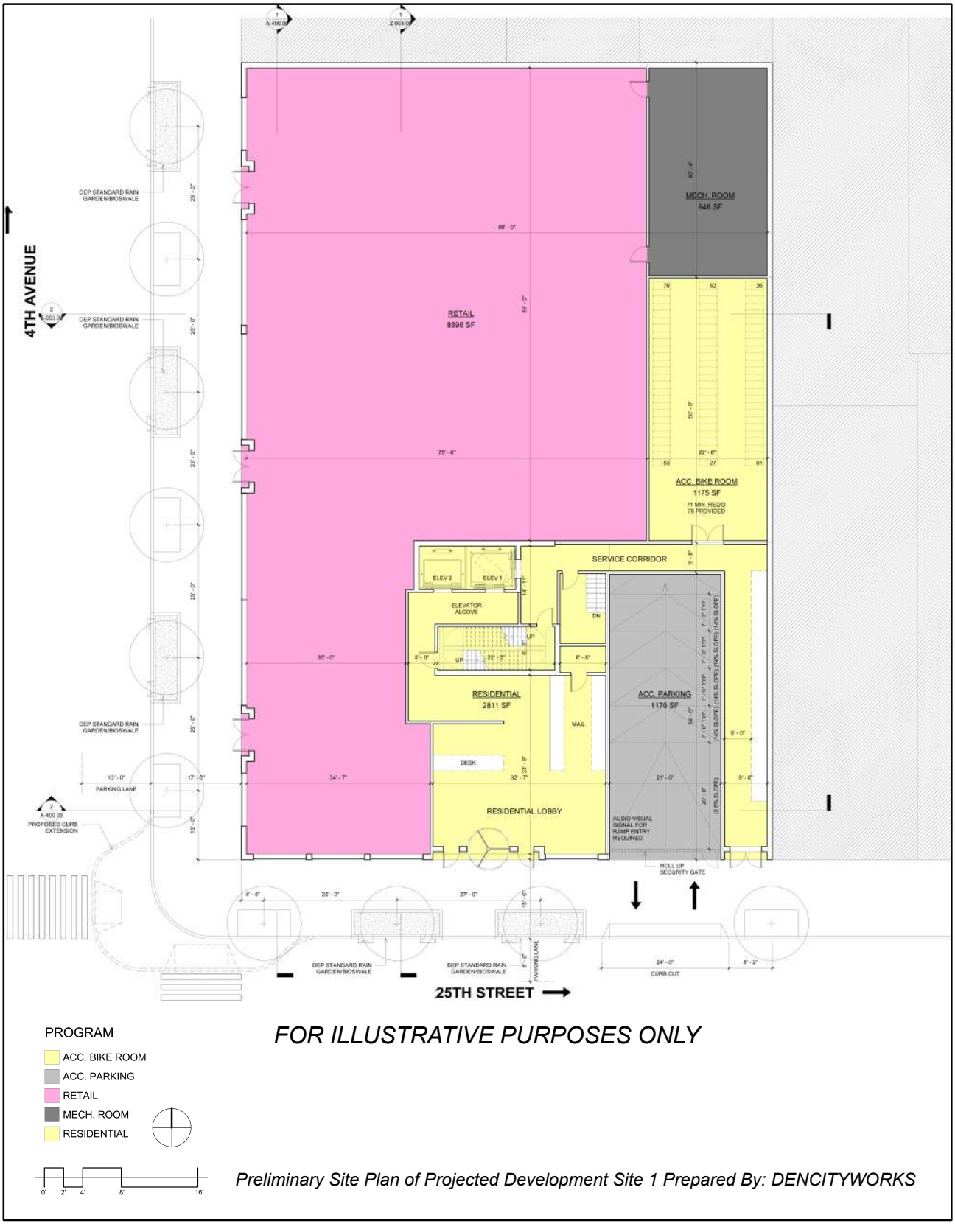


Building Section Diagram of Projected Development Site 1 Prepared By: DENCITYWORKS

Legend

Residential | Residential Amenity | Commercial (Local Retail) | Mechanical/Parking

Site Plan



FOR ILLUSTRATIVE PURPOSES ONLY

Preliminary Site Plan of Projected Development Site 1 Prepared By: DENCITYWORKS

housing affordable to households at an average of 115 percent AMI, with no unit targeted to a household exceeding 135 percent AMI.

VI. ANALYSIS FRAMEWORK

Analysis Year

It is anticipated that the proposed development on Block 652, Lot 1 (Projected Development Site 1) would be certified in ULURP in 2019. Assuming the completion of the ULURP process by early- to mid-2020 after an approximately 7-month period, and a period of no more than approximately 22-months of construction, completion and occupancy of the proposed development is expected to occur by late-2021 or early-2022. In addition to the proposed development, an additional projected development site (Projected Development Site 2) has been identified in the Project Area that is likely to be developed as a result of the Proposed Actions (Lot 7). However, as described below, no formal redevelopment plans exist for the site. Nonetheless, the sites meet the CEQR soft site criteria and, as such, are anticipated to be redeveloped by 2024. This Build Year reflects a reasonable estimate of the time needed for the Applicant to demolish the existing structure on Lot 7, design the project, obtain design approvals, and construct the project (approximately five years).[4] Accordingly, this environmental review will use 2024 as the Build Year for analysis of future conditions consistent with *CEQR Technical Manual* guidance.

Identification of Development Sites

According to the *2014 CEQR Technical Manual*, the following factors, commonly referred to as "soft site criteria," are generally considered when evaluating whether some amount of development would likely be constructed by the Build Year as a result of Proposed Actions:

- The uses and bulk allowed: Lots located in areas where changes in use would be permitted and/or contain buildings built to substantially less than the maximum allowable floor area ratio (FAR) under the existing zoning are considered "soft" enough such that there would likely be sufficient incentive to develop in the future, depending on other factors specific to the area (e.g., the amount and type of recent as-of-right development in the area, recent real estate trends, site specific conditions that make development difficult, and issues relating to site control or site assemblage that may affect redevelopment potential); and
- Size of the development site: Lots must be large enough to be considered "soft." Generally, lots with a small lot size are not considered likely to be redeveloped, even if they are currently built to substantially less than the maximum allowable FAR. A small lot is often defined for this purpose as 5,000 sf or less, but the lot size criteria is dependent on neighborhood-specific trends, and common development sizes in the study area should be examined prior to establishing this criterion.

However, the following uses and types of buildings that meet the soft site criteria are typically excluded from development scenarios because they are unlikely to be redeveloped as a result of Proposed Actions:

[4] Currently, no design plans for Lot 7 have been developed, and the Applicant intends to redevelop Lot 7 at a later date. As such, construction of the two sites would be split into two separate phases and would not overlap.

- Full block and newly constructed buildings with utility uses, as these uses are often difficult to relocate;
- Lots where construction is actively occurring, or has recently been completed, as well as lots with recent alterations that would have required substantial capital investment, unless recently constructed or altered lots were built to less than or equal to half of the maximum allowable FAR under the proposed zoning;
- Lots whose location or irregular shape would preclude or greatly limit future as-of-right development. Generally, development on irregular lots does not produce marketable floor space;
- Long-standing institutional uses with no known development plans; or
- Residential buildings with six or more units constructed before 1974. These building are likely to be rent-stabilized and difficult to legally demolish due to tenant relocation requirements.

Definition of Projected and Potential Development Sites

To produce a reasonable, conservative estimate of future growth, identified development sites are typically divided into two categories: projected development sites and potential development sites. Projected development sites are considered more likely to be developed within the analysis period for the Proposed Actions (i.e. by 2024), while potential sites are considered less likely to be developed over the same period.

Lot 1 (Projected Development Site 1)

The Applicant-owned site is considered a projected development site, as in the future with the Proposed Actions the Applicant intends to redevelop the site with a 14-story predominantly residential building with ground floor commercial and accessory parking, as detailed above. As discussed below, one other tax lot included in the Project Area (Projected Development Site 2) is anticipated to be redeveloped as a projected development site as a result of the Proposed Actions.

Lot 7 (Projected Development Site 2)

In addition to Lot 1 (Projected Development Site 1), the Project Area includes Lot 7, which is also owned and controlled by the Applicant. 731 Fourth Avenue (Lot 7) is a 5,017-sf rectangular-shaped corner lot that would be entirely located within the Project Area. With an existing built FAR of 0.86, Lot 7 is substantially underbuilt relative to the permitted density that would be allowed under the Proposed Actions (i.e., the site has a built FAR less than half the permitted 7.02 FAR under With-Action conditions). Therefore, as Lot 7 meets the development site criteria identified above, it is considered a projected development site that would be redeveloped in the future With-Action condition.[5]

Reasonable Worst-Case Development Scenario (RWCDS)

In order to assess the possible effects of the Proposed Actions and resulting projected developments, a reasonable worst-case development scenario (RWCDS) was established for both the future without the Proposed Actions (No-Action) and the future with the Proposed Actions (With-Action) for an analysis year, or Build year, of 2024. The incremental difference between the No-Action and With-Action conditions will

[5] As described above, there are currently no design plans for Lot 7, and the Applicant intends to redevelop Lot 7 at a later date. As such, construction of the two sites would be split into two separate phases and would not overlap.

serve as the basis of the impact category analyses. The projected development sites described above, which would occupy the entire Project Area, would have a built FAR of approximately 7.2, and would therefore maximize the allowable residential/commercial FAR for the sites under the Proposed Actions. For the above reasons, the projected development sites constitute the RWCDS for the Build year of 2024.

The Future Without the Proposed Actions (No-Action)

In the 2024 future without the Proposed Actions (the No-Action condition), the Project Area would retain its M1-1D zoning designation, and all existing uses on the two projected development sites are assumed to remain as under existing conditions (refer to Table A-4 below).

The Future With the Proposed Actions (With-Action)

In the 2024 future with the Proposed Actions (the With-Action condition), the proposed zoning map amendments and zoning text amendments would be implemented in the Project Area. As such, the Project Area would be remapped as an R8A zoning district with a C2-4 commercial overlay mapped to a depth of 100 feet along the southeast side of Fourth Avenue between 24th and 25th streets, and would be designated as an MIH Area, as well as part of the Special EC-1 Districts. Under With-Action conditions, the maximum allowable FAR in the Project Area would increase to 7.2 when fully utilizing the additional FAR under the MIH Program.

Lot 1 (*Projected Development Site 1*)

As detailed above, the Applicant-owned Lot 1 (Projected Development Site 1) is considered a projected development site, as in the future with the Proposed Actions the Applicant intends to redevelop the 15,017 sf site with a 14-story (145-feet in height) residential building with ground floor retail, with a total of approximately 127,825 gsf (108,118 zsf), with an FAR of 7.2. It is anticipated that the proposed development would contain a total of 115,411 gsf (99,534 zsf) of residential space with approximately 142 DUs on the building's upper floors and approximately 8,896 gsf (8,585 zsf) of commercial (local retail) space on the ground floor, as well as approximately 43 accessory parking spaces in a single cellar level (refer to Table A-3). Of the proposed residential units, 25 percent or up to 35 units would be designated as permanently affordable pursuant to Option 1 of the MIH Program.

Lot 7 (*Projected Development Site 2*)

As discussed above, Lot 7 is a 5,017-sf rectangular-shaped lot currently occupied by a two-story (29-feet in height) building containing several commercial uses including eating and drinking establishments, an autobody repair, and a vehicle lease return office with an FAR of 0.86, well below 50 percent of the maximum allowable 7.2 FAR in the future with the Proposed Actions. As such, it is expected that Lot 7 would be redeveloped to the maximum permitted FAR of 7.2, with a maximum building height of 130 feet.[6] Under these conditions, the existing structure on Lot 7 would be demolished, and Lot 7 would be redeveloped with an approximately 41,525 gsf (36,122 zsf) mixed-use residential building with ground floor retail (refer to Table A-3 above). Projected Development Site 2 would include approximately 38,405 gsf (47 DUs) and 3,120 gsf of local retail. It is expected that local retail uses would be located along the

[6] Though the maximum permitted building height in R8A districts under MIH with qualifying ground floors is 145 feet, based on the size, shape and allowable floorplate of Lot 7, it is reasonable to assume that Projected Development Site 2 would not be able to fully utilize the maximum permitted building height of 145 feet in R8A districts.

building's Fourth Avenue frontage, with the residential entrance along the building's 24th Street frontage. Pursuant to ZR Section 25-242, off-street parking requirements would be waived.

TABLE A-3
2024 With-Action Condition – Projected Development Sites on Block 652

Lot	Lot Area (sf)	FAR[1]	Residential		Commercial[4]	Total Mixed-Use Building	Parking Spaces[6]	Max. Building Height[8]
			Sf[2]	DUs[3]				
1	15,017	7.2	115,411 gsf (99,534 zsf)	142 (35 affordable)	8,896 gsf (8,585 zsf)	127,825 gsf[5] (108,118 zsf)	45	145
7	5,017	7.2	38,405 gsf (33,122 zsf)	47 (12 affordable)	3,120 gsf (3,000 zsf)	41,525 gsf (36,122 zsf)	-[7]	130
Total RWCDS With-Action Increment within Project Area:			**153,816 gsf (132,656 zsf)**	**189 (47 affordable)**	**12,016 gsf (11,585 zsf)**	**169,350 gsf (144,240 zsf)**	**45**	**-**

Notes:
[1] The proposed maximum allowable FAR in the Project Area increases from 6.02 to 7.2 FAR when utilizing the MIH Program.
[2] The estimate of maximum residential GSF is based on a rate of residential ZSF plus 15 percent.
[3] Twenty-five percent of the residential floor area would be affordable units pursuant to the MIH Program. The estimates of RWCDS DUs are based on standard average unit sizes of approximately 815 gsf per unit.
[4] The estimate of maximum commercial GSF is based on a rate of commercial ZSF plus four percent.
[5] The estimate of total mixed-use building floor area accounts for an additional 3,518 gsf of mechanical and accessory parking space located above grade.
[6] As the site is in a Designated Transit Zone, no accessory parking is required for the affordable housing units, and parking would be provided for 40 percent of the market-rate units (43 spaces under MIH Option 1). Accessory parking for the commercial use would be waived as less than 40 parking spaces are required.
[7] As the lot area of Lot 7 is below 10,000 sf, accessory parking requirements would be waived pursuant to ZR Section 25-242.
[8] A maximum building height of 145 feet is permitted with a qualifying ground-floor.

Possible Effects of the Proposed Actions

Table A-4 below provides a comparison of the No-Action and With-Action conditions identified for analysis purposes. As shown, the incremental (net) change that would result from the Proposed Actions is the addition of a total of 153,816 gsf of residential uses, including approximately 189 DUs, of which up to approximately 47 would be affordable units, and 2,925 gsf of commercial (local retail) uses. The Proposed Actions would also result in a net increase of 45 below-grade accessory parking spaces and a reduction of 11 unenclosed, surface parking spaces. In terms of population, the Proposed Actions are expected to generate approximately 562 incremental residents and 21 incremental employees, as compared to the 2024 No-Action condition.

TABLE A-4
Comparison of 2024 No-Action and With-Action Conditions at the Project Area

	No-Action	With-Action	Increment
Land Use			
Residential	0	153,816 gsf (189 DUs)	**+153,816 gsf (189 DUs)**
Market Rate	0	142	**+142**
Affordable[1]	0	Up to 47	**+47**
Commercial (Local Retail)	9,091 gsf	12,016 gsf	**+2,925 gsf**
Parking Spaces			
Accessory Parking Lot	11	0	**-11**
Accessory Parking Garage	0	45	**+45**
Population[2]			
Residents	0	562	**+562**
Workers	24	45	**+21**

Notes:
[1] Estimate of the affordable housing units is based on Option 1, which assumes up to 25 percent of units would be affordable to households averaging 60 percent of AMI.
[2] Population estimates based on the following assumptions: 2.97 residents per unit (average persons per household for Brooklyn CD 7, 2010 Census); three retail employees per 1,000 sf of retail; one employee per 1,000 sf of auto repair; one employee per 50 parking spaces; and one residential employee per 25 DUs.

VII. REQUIRED APPROVALS

As noted above, the proposed zoning map and text amendments are discretionary public actions that are subject to both the ULURP and CEQR. ULURP is a process that allows public review of Proposed Actions at four levels: the Community Board; the Brooklyn Borough President; the New York City Planning Commission; and 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.

Attachment B
Supplemental Screening

737 Fourth Avenue Rezoning EAS
Attachment B: Supplemental Screening

I. INTRODUCTION

This Environmental Assessment Statement ("EAS") has been prepared in accordance with the guidance and methodologies presented in the 2014 *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 this guidance, preliminary screening assessments were conducted for the Proposed Actions and resultant reasonable worst-case development scenario (RWCDS) 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; Community Facilities; Open Space; Shadows; Urban Design and Visual Resources; Hazardous Materials; Transportation; Air Quality; Noise; Public Health; Neighborhood Character; and Construction; 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: Socioeconomic Conditions; Historic and Cultural Resources; Natural Resources; Water and Sewer Infrastructure; Solid Waste and Sanitation Services; Energy; and Greenhouse Gas Emissions and Climate Change.

The supplemental screening assessments contained herein identified that additional analyses are required in the areas of Land Use, Zoning, and Public Policy, Open Space, Urban Design and Visual Resources, Air Quality, and Noise. These analyses are provided in Attachments C, D, E, F, and G, 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, as a RWCDS, a new 14-story predominantly residential building with ground floor commercial would be constructed on the applicant-owned development site (Projected Development Site 1) at 737 Fourth Avenue (Brooklyn Block 652, Lot 1), with a total of approximately 127,825 gross square feet (gsf) (108,119 zoning square feet [zsf]), with a floor area ratio (FAR) of 7.2. It is anticipated that the With-Action building would contain a total of approximately 115,411 gsf (99,534 zsf) of residential space with approximately 142 dwelling units (DUs), and approximately 8,896 gsf of commercial local retail space, as well as approximately 45 accessory parking spaces. Up to 25 percent of the residential floor area (equivalent to up to approximately 35 DUs) would be designated as permanently affordable units pursuant to Option 1 of the Mandatory Inclusionary Housing (MIH) Program.

As described in Attachment A, "Project Description," for reasonable worst-case environmental analysis purposes, it is assumed that the Proposed Actions would allow for the development of a second applicant-owned site on adjacent Lot 7 (Projected Development Site 2) pursuant to R8A/C2-4 (EC-1) zoning regulations. Under With-Action conditions, Projected Development Site 2 would comprise of an approximately 41,525 gsf (36,122 zsf) mixed-use building containing approximately 38,405 gsf (47 DUs) of residential uses (of which, up to 12 units would be designated as permanently affordable pursuant to MIH) and 3,120 gsf of local retail space. No other tax lots are expected to be redeveloped or enlarged in the future with the Proposed Actions. As such, compared to No-Action conditions (identified in Attachment

A, "Project Description"), the incremental (net) change that would result from the Proposed Actions is the addition of a total of 158,344 gsf of residential uses, including approximately 189 DUs, of which up to approximately 47 would be affordable units, 2,925 gsf of commercial local retail uses, and 34 accessory parking spaces. In terms of population, the Proposed Actions are expected to generate approximately 562 incremental residents and 21 incremental employees, as compared to the 2024 No-Action condition.

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 (HVAC)
Greenhouse Gas Emissions		X	
Noise			X
Public Health		X	
Neighborhood Character		X	
Construction		X	

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 include zoning map amendments and zoning text amendments. Therefore, a 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.

Community Facilities

Potential direct or indirect effects of a proposed action(s) 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 and associated RWCDS could result in the development of 189 dwelling units, of which up to approximately 57 would be considered affordable under MIH Option 2.[1] 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	220[1]
Public High Schools	150 or more high school students	1,767[1]
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

Sources: *CEQR Technical Manual; CEQR App.*
Notes:
[1] Based on school multipliers defined by the School Construction Authority (SCA) for Central School District (CSD) 15: 0.18 for Primary/Elementary School (age 4-10); 0.05 for Intermediate School (age 11-13); and 0.09 for High School (age 14-17).

Public Schools, Child Care Facilities, Libraries, Health Care Facilities, and Fire and Police Protection

As the Proposed Actions would not result in the introduction of a sizeable new neighborhood, would not result in a more than five percent increase in the ratio of residential units to libraries in Brooklyn (i.e., would result in the development of fewer than 734 DU), would not result in the generation of more than 50 elementary and intermediate school students or 150 high school students, and would not result in more than 110 affordable dwelling units, analyses of fire and police protection, health care facilities,

[1] It should be noted that the Applicant intends to provide permanently affordable units at Projected Development Site 1 pursuant to Option 1 of the City's MIH program, which requires 25 percent of DUs to be designated as affordable.

libraries, public schools, and child care facilities are not warranted, and significant adverse impacts are not anticipated in these technical areas.[2]

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 200 residents or 500 workers in an area of the City that has not been designated as either "underserved" or "well-served" by publicly accessible open space resources.[3]

The Proposed Actions would result in 562 new residents and 21 (net) employees. As the Proposed Actions would result in an increase in residents above the *CEQR Technical Manual* threshold for analysis, a residential open space analysis is provided in Attachment E, "Open Space." As discussed in detail in the attachment, no significant adverse 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 sunlight-sensitive 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 2014 *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," as a RWCDS, the Proposed Actions would facilitate the construction of an approximately 145-foot tall building at the applicant-owned proposed development site, which is near sunlight-sensitive open space resources. Therefore, an assessment of shadows is warranted to determine whether the RWCDS would result in new shadows long enough to reach sunlight-sensitive resources as compared to the No-Action condition.

[2] Though the initial screening in the EAS Form determined that the Proposed Actions could result in 50 or more elementary/intermediate school students based on the school multipliers presented in Table 6-1 of the *CEQR Technical Manual*, a refined public schools screening utilizing CEQRApp, as recommended by DCP in comments distributed on June 18, 2019, concluded that the Proposed Actions would not result in the generation of more than 50 elementary/intermediate school students in NYC Central School District (CSD) 15. Based on CEQRApp, the school multipliers for CSD 15 are 0.18 elementary school students per DU, 0.05 intermediate school students per DU, and 0.09 high school students per DU.

[3] According to the *CEQR Technical Manual*, underserved open space areas are areas of high population density in the City that are generally the greatest distance from publicly accessible parkland where the amount of open space per 1,000 residents is less than 2.5 acres. Well-served open space areas are those that either (i) have an open space ratio above 2.5 acres per 1,000 residents accounting for existing parks that contain developed recreational resources; or (ii) are located within 0.25 miles (approximately a 10-minute walk) from developed and publicly accessible portions of regional parks.

Preliminary Screening Assessment

Tier 1 Screening Assessment

According to the 2014 *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 and occurs on December 21, the Winter Solstice. For Projected Development Sites 1 & 2 (Brooklyn Block 652, Lot 1 and Block 652, Lot 7, respectively), the maximum height of the projected developments, including mechanical bulkhead (approximately 179 feet), was used to determine the maximum shadow radius of 770 feet (Tier 1 Assessment). Within this longest shadow study area, there are two potential sunlight-sensitive resources: Greenwood Cemetery (a sunlight-sensitive open space resource) and Weir Greenhouse (a sunlight-sensitive historic resource). Therefore, further screening was warranted in order to determine whether any resources could be affected by project-generated shadows at Projected Development Sites 1 & 2.

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 project 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 projected developments.

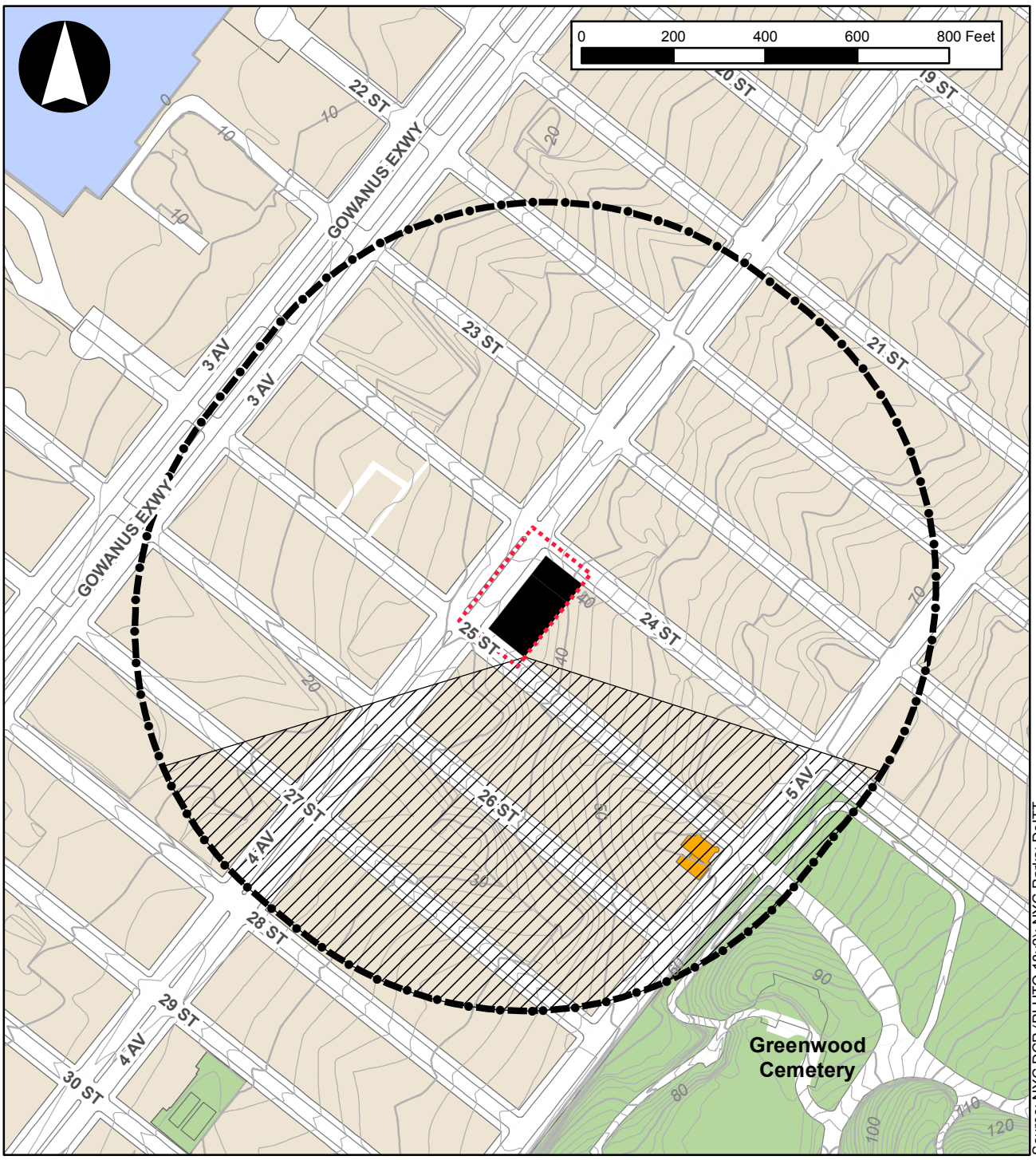
Figure B-1 provides a base map illustrating the results of the Tier 1 and Tier 2 screening assessments (i.e., the portion of the longest shadow study area lying within -108 degrees from true north and +108 degrees from true north as measured from the southernmost corner of the projected development sites). As shown in Figure B-1, the shadows cast by the projected developments would not reach any publicly accessible open space resources or any other sunlight-sensitive resource. Therefore, further analysis is not warranted and the Proposed Actions would not result in any significant adverse shadow impacts.

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 action 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.

Tier 1 and Tier 2 Shadows Assessment



Legend

- Projected Development Sites 1 & 2
- Project Area
- Tier 1: Longest Shadow Study Area
- Tier 2: Area That Cannot Be Shaded
- Open Space Resource
- Historic Resource
- 40 U.S. Geological Survey (USGS) Contour Line

The Proposed Actions include the rezoning of area from M1-1D to R8A/C2-4 (EC-1), which would result in development that would differ from what is currently permitted as-of-right, and as such, an analysis of urban design and visual resources is appropriate. This analysis is provided in Attachment F, "Urban Design and Visual Resources." As discussed in Attachment F, there would be no significant adverse impacts to urban design and visual resources as a result of the Proposed Actions.

Hazardous Materials

As defined in the 2014 *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 (VOCs and SVOCs), methane, polychlorinated biphenyls (PCBs) 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 Assessment (ESA)

As the Proposed Actions would result in new in-ground disturbance at the Project Area (Block 652, Lots 1 and 7), a Phase I Environmental Site Assessment (ESA) was prepared for each lot to determine whether hazardous materials exist on the site. The Phase I ESA for Lots 1 and 7 were both prepared by P.W. Grosser Consulting, Inc. (PWGC). The Phase I ESA for Lot 1 was prepared in March 2018 and updated in August 2018, and the Phase I ESA for lot 7 was prepared in January 2019. Each Phase I ESA was prepared in conformance with the guidelines described in ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process – E1527-13. The Phase I ESAs consisted of visual observations, a review of historical information, environmental databases, information provided by the applicant, and interviews with current site representatives.

Phase I ESA – Lot 1

As outlined in the Phase I ESA for Lot 1, PWGC evaluated the findings associated with the subject property and identified two Recognized Environmental Conditions (RECs), two Historic RECs (HRECs), and no Controlled RECs (CRECs) with respect to the subject property (refer to Appendix I). Conditions determined to be RECs are identified below:

- The site was historically utilized as a gasoline service station and auto repair shop for approximately eight decades. This long history of usage has resulted in the site's inclusion in several environmental databases (USTs, LTANKS, and Liens) and the installation of numerous monitoring wells throughout the subject property and surrounding areas related to an active spill being investigated and remediated by the New York State Department of Environmental Conservation (NYSDEC). Information from the NYSDEC indicates that there was likely some minor gasoline contamination in the soils beneath the site and that there is gasoline contamination in the groundwater beneath the site. It is unlikely that the plume of oil associated with spill #93-05122 originated from the subject property; however, there is the potential that the gasoline impact in the groundwater is originating from the subject property and/or other nearby properties. The presence of gasoline contamination beneath the site is considered a REC.

- Two closed on-site spill numbers appeared to be minimal in nature and actual spills or leaks of significant product was not identified. Due to the closed status of these spills, they are HRECs.
- Several off-site properties have been identified that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property, most notably in the form of spill #93-05122. Due to the open status of these spills and their known migration onto the subject property, their presence is considered a REC.

Based on the identified RECs, PWGC recommended a Phase II ESA be performed at the site to determine the extent of the petroleum contamination migrating beneath the subject property and to determine if the subject property is a contributing party to the contamination. Furthermore, based upon an August 13, 2018 correspondence between PWGC and the NYSDEC Project Manager for Spill #93-05122, it is understood that the spill and the associated project identification number (PIN) used for payment to the NYSDEC contractors will be closed following final payment on outstanding contractor invoices. A new PIN was opened, effective July 2, 2018, relating to Spill #16-10374 at 207 25th Street (Block 652, Lot 80), the neighboring property to the subject property (Lot 1). This reflects NYSDEC's understanding that the contamination identified at the subject site is migrating beneath the subject site from an up-gradient source.

Phase I ESA – Lot 7

As outlined in the Phase I ESA for Lot 7, PWGC evaluated the findings associated with the subject property and identified two Recognized Environmental Conditions (RECs); no Historic RECs (HRECs) or Controlled RECs (CRECs) with respect to the subject property (refer to Appendix I). Conditions determined to be RECs are identified below:

- The site was historically utilized as a metals manufacturer, a junk yard, and an auto repair shop; use as an auto body repair shop has continued to the present day. The majority of these activities appeared to have been conducted in the rear portion of the property along 24th Street. Petroleum compounds and chemical solvents are typically associated with these activities. Based upon the long history of industrial uses and the likely presence of these chemicals, the usage of the site represents a REC.

- Several off-site properties have been identified with petroleum spills that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property. Due to the open status of these spills, their presence is considered a REC.

Based on the identified RECs, PWGC recommended a Phase II ESA be performed at the site to determine if the historic usage of the property has resulted in impacts to the subsurface and to determine if off-site spills have impacted groundwater or soil vapor beneath the site.

Phase II Environmental Site Assessment (ESA) – Lot 1

Based upon the recommendations of the March 2018 (updated in August 2018) Phase I ESA for Lot 1 prepared by PWGC, a Phase II was conducted. As shown in Appendix II, the Phase II ESA for Lot 1, also prepared by PWGC, included an evaluation of soil and groundwater quality based on data collected through field work conducted between April and May 2018. The findings of the Phase II ESA are detailed in Appendix II and summarized below.

- Seven soil borings were conducted on-site (Lot 1). Photo-ionization detector (PID) readings and olfactory observations indicated that impact was not observed in the vadose zone, but higher readings and stronger odors were obtained closer to the groundwater table. The highest PID readings were obtained at the groundwater table and in the borings closest to the up-gradient side of the property.[4] Volatile Organic Compounds (VOCs) were detected at concentrations exceeding the NYSDEC's Title 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 and Final Commissioner Policy, CP-51 Soil Cleanup Levels (SCOs) in two of the soil borings, SB002 and SB004, which are located closest to 25th Street with the highest concentrations observed in SB004. Semi-Volatile Organic Compound (SVOC) impact was not identified.
- Ten previously installed groundwater monitoring wells were gauged and sampled. Light non-aqueous phase liquid (LNAPL) was observed in three of the wells located on the up-gradient side of the property or on the adjacent sidewalk, measuring between 0.85 feet and 1.42 feet and consisting of oil. Groundwater analytical results indicated that VOC impact to the groundwater is limited to the up-gradient portion of the property and SVOC impact is observed site-wide at low level concentrations exceeding the NYSDEC groundwater quality standards (GQS).

As NYSDEC indicated that they are in the process of closing Spill #93-05122, PWGC recommends no further action at this time regarding the closure of the spill.

Phase II Environmental Site Assessment (ESA) – Lot 7

Based upon the recommendations of the January 2019 Phase I ESA for Lot 7 prepared by PWGC, a Phase II was conducted. As shown in Appendix II, the Phase II ESA for Lot 7, also prepared by PWGC, included an investigation of soil vapor based on data collected through field work conducted between February and March 2019. The findings of the Phase II ESA are detailed in Appendix II and summarized below.

- As access to the subject property (Lot 7) was not granted, five soil vapor probes were installed on the neighboring property to the southwest (Lot 1) and on the adjacent sidewalk along 24th Street. Soil vapor sample analytical data were compared to the USEPA Vapor Intrusion Screening Levels (VISLs). Two compounds in two different soil vapor samples exceeded their respective VISLs.
- The first soil vapor probe contained an exceedance of 1,3-Butadiene. The compound 1,3-Butadiene is utilized in industry as a monomer in the production of synthetic rubber which is not known to have occurred at this site. It is also commonly found in ambient air in urban and suburban areas as a consequence of emissions from vehicles.
- The second soil vapor probe contained an exceedance of Chloroform. Chloroform may be released to the air as a result of its formation in the chlorination of drinking water and wastewater or from use/disposal at pulp and paper mills, hazardous waste sites, or sanitary landfills. These activities are also not known to have occurred at the subject property.
- Based on the comparison of detectable concentrations to the USEPA VISLs and analysis conducted by PWGC, the detected VOCs (i.e., chlorinated solvents and petroleum related compounds) do not appear to be related to the subject property or require action. Although impacts beneath the subject property cannot be ruled out, shallow soil gas immediately adjacent to the site does not reflect that a significant source of VOCs exists in the immediate area.

[4] According to historic ESAs, groundwater flow direction is towards the north or northwest, indicating that the portion of the property at Lot 1 located closest to 25th Street is the up-gradient side of the property.

To avoid the potential for significant adverse impacts related to hazardous materials, an (E) designation will be placed on Block 652, Lots 1 and 7. The (E) designation program is administered by the Mayor's Office of Environmental Remediation (OER). Approval of a hazardous materials remedy by OER is required prior to the granting of building permits by the New York City Department of Buildings (DOB). The text of the (E) designation for hazardous materials is as follows:

> **Task 1:**
>
> **The Applicant submits to OER, for review and approval, a Phase I ESA for the Project Site along with a soil, soil gas, and groundwater testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.**
>
> **Task 2:**
>
> **A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER. If remediation is indicated from the test results, a proposed remediation plan must be submitted to OER for review and approval. The Applicant must complete such remediation as determined necessary by OER. The Applicant should then provide proper documentation that the work has been satisfactorily completed. An OER-approved construction-related health and safety plan (CHASP) would be implemented during evacuation 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. All demolition or rehabilitation would be conducted in accordance with applicable requirements for disturbance, handling and disposal of suspect lead-paint and asbestos-containing materials. In addition to the requirements for lead-based paint and asbestos, requirements (including those of NYSDEC), should petroleum tanks and/or spills be identified and for off-site disposal of soil/fill, would need to be followed.**

With the requirements of the (E) designation or comparable measures, no significant adverse impacts related to hazardous materials would be expected to occur. The implementation of the preventative and remedial measures outlined in the (E) designation would reduce or avoid the potential of significant adverse hazardous materials impacts from potential construction at the projected development sites. Following such construction, there would be no potential for significant adverse impacts.

Transportation

The *CEQR Technical Manual* identifies minimum development densities that have the potential to result in significant adverse impacts to traffic conditions and therefore require a detailed transportation analysis.

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 include all areas within 0.25 miles of a subway station), the development thresholds are an increment of 200 residential units, 100,000 gsf of office space, 20,000 gsf of regional retail, 15,000 gsf of local retail, 20,000 gsf of restaurant uses, 25,000 gsf of community facility uses, or 85 off-street parking spaces.

According to the *CEQR Technical Manual*, if an action would result in development greater than one of the minimum development densities in Table 16-1, a Level 1 (Project Trip Generation) Screening Assessment should be prepared. Except in unusual circumstances, if a 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 a proposed action would result in a mix of land uses, it may be appropriate to conduct a preliminary trip generation assessment for each land use or use a weighted average to determine whether the total site generated trips exceed the threshold for analysis. If the trip generation screening thresholds are exceeded, a Level 2 (Project-Generated Trip Assignment) Screening Assessment should be prepared to determine if a 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, a detailed analysis for the respective mode is required.

In the 2024 future without the Proposed Actions, it is assumed that the Project Area would retain its M1-1D zoning designation, and all existing uses on the two projected development sites are assumed to remain as under existing conditions, which includes approximately 9,091 gsf of local retail uses and 11 unenclosed surface parking spaces. As the Proposed Actions would introduce approximately 189 DUs, 12,016 gsf of local retail uses, and 45 below-grade parking spaces, the incremental (net) change for transportation analysis is the addition of 189 DUs, 2,925 gsf of local retail uses, and 45 below-grade parking spaces, and a loss of 11 unenclosed surface parking spaces. As the weighted average of incremental land uses exceeds the thresholds identified in Table 16-1 for Zone 2, a preliminary analysis of transportation is warranted.

Level 1 (Trip Generation) Screening Assessment

A travel demand forecast was prepared to determine if the Proposed Actions would exceed the Level 1 Screening Assessment thresholds. Table B-3 shows the transportation planning factors used to forecast travel demand under the No-Action and With-Action conditions in the weekday AM, midday, and PM and Saturday midday peak hours, including trip generation rates, temporal and directional distributions, mode choice factors, and vehicle occupancy rates. As shown in Table B-3, planning factors are based on the *CEQR Technical Manual*, 2012-2016 American Community Survey (ACS) Means of Transportation to Work data for Brooklyn Census Tracts 101 and 145, and the 2012 *Triangle Plaza Hub EAS*.

Table B-4 presents the incremental person and vehicle trips expected to be generated as a result of the Proposed Actions. The Proposed Actions would generate an incremental total of approximately 172, 192, 228, and 218 person trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Transportation demand by mode is discussed in detail below.

Traffic

As shown in Table B-4, the Proposed Actions would generate an incremental total of approximately 18, 18, 21, and 18 vehicle trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Per *CEQR Technical Manual* Level 1 (Trip Generation) Screening Assessment guidance, further traffic analysis is not warranted as development facilitated by the Proposed Actions would not generate more than 50 vehicle trips in any peak hour.

Parking

The proposed project would introduce an increment of 45 below-grade accessory off-street parking spaces. As the proposed accessory parking spaces would comply with zoning requirements and a detailed traffic analysis is not warranted, it is expected that the projected development sites would accommodate all action-generated parking demand and further assessment of parking conditions is not warranted.

Transit

As shown in Table B-4, the proposed project would generate an incremental total of approximately 100, 54, 110, and 96 subway trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. During the same peak periods, the number of incremental bus-only trips would total approximately 8, 10, 11, and 10. Per *CEQR Technical Manual* Level 1 Screening Assessment guidance, further transit analysis is not warranted as development facilitated by the Proposed Actions would not generate more than 200 transit-oriented trips in any peak hour.

Pedestrians

As shown in Table B-4, the proposed project would generate an incremental total of approximately 41, 108, 77, and 86 walk-only trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Incremental pedestrian trips (including walk-only and walk trips en route to/from subway and bus stops) would total approximately 149, 172, 198, and 192in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Per *CEQR Technical Manual* Level 1 Screening Assessment guidance, further pedestrian analysis is not warranted as development facilitated by the Proposed Actions would not generate more than 200 pedestrian trips in any peak hour.

Table B-3
Transportation Planning Factors

Land Use:	Residential		Local Retail	
Size/Units:	189 DU		2,925 gsf	
Trip Generation:	(1)		(1)	
Weekday	8.075		205	
Saturday	9.600		240	
	per DU		per 1,000 gsf	
Temporal Distribution:	(1)		(1)	
AM	10.0%		3.0%	
MD	5.0%		19.0%	
PM	11.0%		10.0%	
SatMD	8.0%		10.0%	
	(2)		(3)	
Modal Splits:	All Periods		All Periods	
Auto	15.0%		5.0%	
Taxi	0.0%		1.0%	
Subway	65.0%		3.0%	
Bus	4.0%		6.0%	
Walk/Other	16.0%		85.0%	
	100.0%		100.0%	
	(3)		(3)	
In/Out Splits:	In	Out	In	Out
AM	15.0%	85.0%	50%	50%
MD	50.0%	50.0%	50%	50%
PM	70.0%	30.0%	50%	50%
Sat MD	50.0%	50.0%	50%	50%
Vehicle Occupancy:	(2,3)		(3)	
	All Periods		All Periods	
Auto	1.41		2.00	
Taxi	1.40		2.00	
Truck Trip Generation:	(1)		(1)	
Weekday	0.06		0.35	
Saturday	0.02		0.04	
	per DU		per 1,000 sf	
	(1)		(1)	
AM	12.0%		8.0%	
MD	9.0%		11.0%	
PM	2.0%		2.0%	
Sat MD	9.0%		11.0%	
	In	Out	In	Out
AM/MD/PM	50.0%	50.0%	50.0%	50.0%

Notes :

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

(2) Based on 2012-2016 *American Community Survey (ACS)* Means of Transportation to Work Table for Brooklyn Census Tracts 101 and 145.

(3) Based on *Triangle Plaza Hub EAS,* March 2012.

Table B-4
Travel Demand Forecast

Land Use:		Residential		Local Retail		Total	
Size/Units:		189	DU	2,925	gsf		
Peak Hour Person Trips:							
	AM	154		18		172	
	MD	78		114		192	
	PM	168		60		228	
	Sat MD	146		72		218	
Person Trips:							
		In	Out	In	Out	In	Out
AM	Auto	3	20	0	0	3	20
	Taxi	0	0	0	0	0	0
	Subway	15	85	0	0	15	85
	Bus	1	5	1	1	2	6
	Walk/Other	4	21	8	8	12	29
	Total	23	131	9	9	32	140
		In	Out	In	Out	In	Out
MD	Auto	6	6	3	3	9	9
	Taxi	0	0	1	1	1	1
	Subway	25	25	2	2	27	27
	Bus	2	2	3	3	5	5
	Walk/Other	6	6	48	48	54	54
	Total	39	39	57	57	96	96
		In	Out	In	Out	In	Out
PM	Auto	18	8	2	2	20	10
	Taxi	0	0	0	0	0	0
	Subway	75	33	1	1	76	34
	Bus	5	2	2	2	7	4
	Walk/Other	19	8	25	25	44	33
	Total	117	51	30	30	147	81
		In	Out	In	Out	In	Out
Sat MD	Auto	11	11	2	2	13	13
	Taxi	0	0	0	0	0	0
	Subway	47	47	1	1	48	48
	Bus	3	3	2	2	5	5
	Walk/Other	12	12	31	31	43	43
	Total	73	73	36	36	109	109
Vehicle Trips :							
		In	Out	In	Out	In	Out
AM	Auto (Total)	2	14	0	0	2	14
	Taxi	0	0	0	0	0	0
	Taxi Balanced	0	0	0	0	0	0
	Truck	1	1	0	0	1	1
	Total	3	15	0	0	3	15
		In	Out	In	Out	In	Out
MD	Auto (Total)	4	4	2	2	6	6
	Taxi	0	0	1	1	1	1
	Taxi Balanced	0	0	2	2	2	2
	Truck	1	1	0	0	1	1
	Total	5	5	4	4	9	9
		In	Out	In	Out	In	Out
PM	Auto (Total)	13	6	1	1	14	7
	Taxi	0	0	0	0	0	0
	Taxi Balanced	0	0	0	0	0	0
	Truck	0	0	0	0	0	0
	Total	13	6	1	1	14	7
		In	Out	In	Out	In	Out
Sat MD	Auto (Total)	8	8	1	1	9	9
	Taxi	0	0	0	0	0	0
	Taxi Balanced	0	0	0	0	0	0
	Truck	0	0	0	0	0	0
	Total	8	8	1	1	9	9

	Total Vehicle Trips		
	In	Out	Total
AM	3	15	18
MD	9	9	18
PM	14	7	21
Sat MD	9	9	18

Air Quality

According to *CEQR Technical Manual* guidance, air quality analyses are conducted 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 2014 *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. Per the EAS Form, and as shown in Table B-4 above, the Proposed Actions would not generate peak hour vehicle volumes in exceedance of the CEQR threshold of 170 vehicle trips, and therefore, further analysis of air quality mobile sources from action-generated vehicle trips has been screened out in accordance with 2014 *CEQR Technical Manual* guidance.

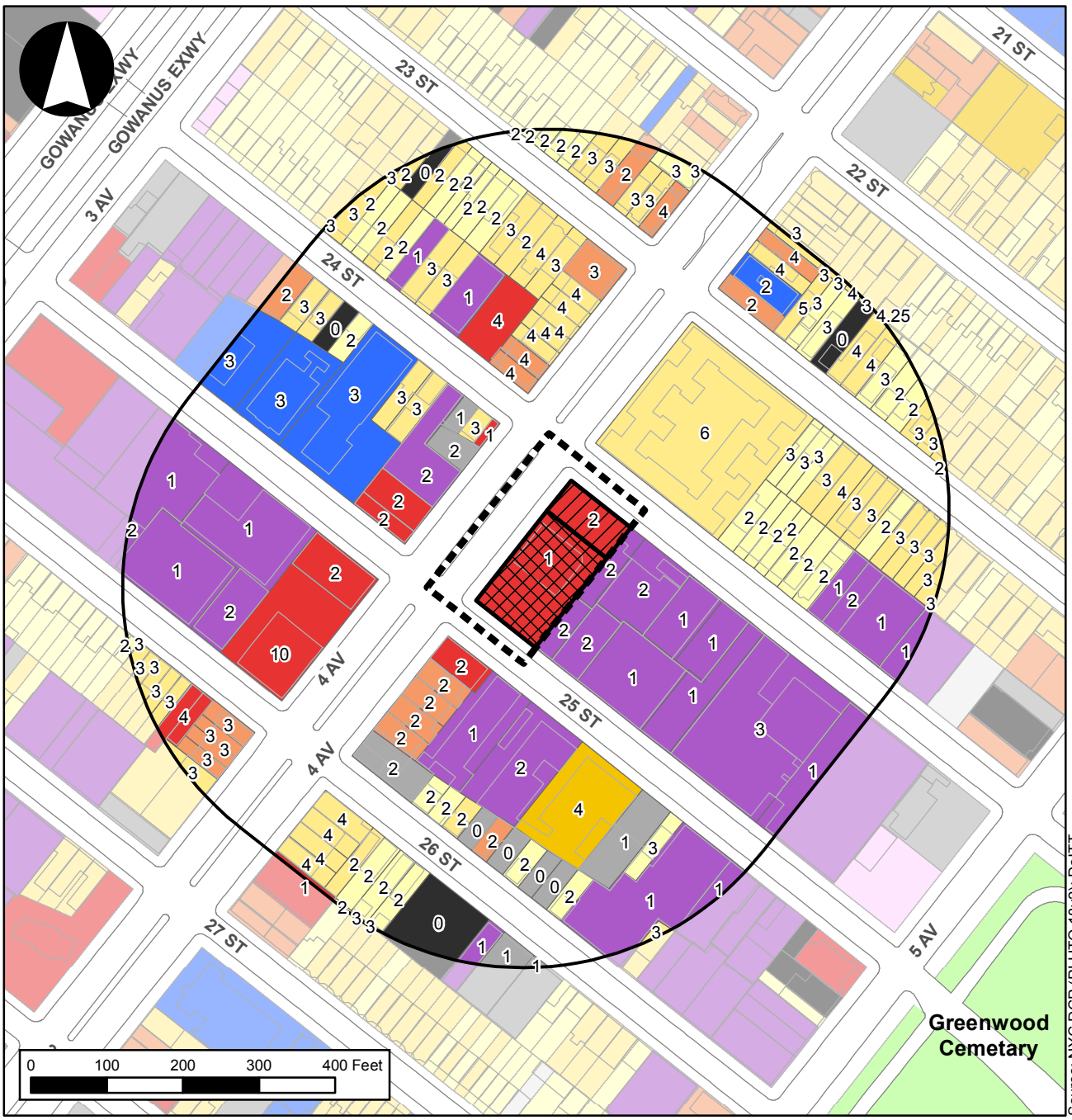
Stationary source impacts could occur with actions that create new stationary sources or pollutants, such as emission stacks for industrial plants, hospitals, or other large institutional uses, or a building's boiler stacks used for heating/hot water, ventilation, and air conditioning ("HVAC") systems, 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.

To determine whether a detailed project-on-existing or project-on-project HVAC analysis is warranted, an air quality nomograph screening was performed using Figure 17-3 of the *CEQR Technical Manual*. The RWCDS resulting from the Proposed Actions would include a 14-story (approximately 145 feet tall) building on Block 652, Lot 1 (Projected Development Site 1) and a 12-story (approximately 130 feet tall) building on Lot 7 (Projected Development Site 2). A review of existing land uses within approximately 400 feet of the proposed development site via the New York City Open Accessible Space Information System (OASIS) Land Use interactive mapping application and Google imaging map shows that no taller existing residential buildings are located within 400 feet of the development site– with the tallest nearby existing building being ten-stories tall at 764 Fourth Avenue at the northwest corner of Fourth Avenue and 26th Street (Block 654, Lot 34) (see Figure B-2).

The air quality analysis of boiler HVAC emissions is based on the screening procedures and methodologies provided in Sub-Section 322.1 of the *CEQR Technical Manual.* This analysis uses a nomograph procedure based on the size of the development (i.e., floor area square footage), fuel type, and distance to the nearest receptor or buildings of a height similar to or greater than the stack height of the RWCDS. The nomograph figure was specifically developed through detailed mathematical modeling to predict the threshold of development size below which a project would not be likely to have a significant impact. This procedure is only appropriate for buildings at least 30 feet or more from the nearest building of similar or greater height. If a proposed project passes the screening analysis, then there is no potential for a significant adverse air quality impact from the project's boiler, and a detailed analysis may not need to be conducted. According to the *CEQR Technical Manual*, if a building of similar or greater height is beyond 400 feet of the development site, 400 feet is used.

Based on Figure 17-3 of the *CEQR Technical Manual*, the HVAC systems for RWCDS would not result in any air quality impacts to existing sensitive receptors. As there are no existing buildings that are taller than

Figure B-2
Surrounding Land Uses



Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- 400-ft Radius
- Building Footprint
- 1 Number of Floors

Land Uses

- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Building
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Transportation/Utility
- Industrial/Manufacturing
- Public Facilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land

the proposed buildings within 400 feet of the Project Area, emissions from RWCDS would fall below the applicable curve and would therefore not result in any adverse air quality impacts (see Figure B-3). However, emissions from heating, ventilation, and air conditioning (HVAC) system of Projected Development Site 2, which would be shorter than and directly adjacent to Projected Development Site 1, may have the potential to significantly impact residential receptors on the upper floors of Projected Development Site 1. As such, a detailed analysis of emissions as a result of the Proposed Actions and associated RWCDS are warranted.

According to *CEQR Technical Manual* guidelines, the impacts of these emissions would be a function of fuel type, stack height, building size, and location of each emissions source relative to nearby sensitive land uses. As presented in Attachment G, "Air Quality," the conclusions of the dispersion analysis of the HVAC emissions associated with Projected Development Site 2 regarding potential impacts on Projected Development Site 1 are as follows:

1. A critical factor in determining the significance of potential impacts of the HVAC emissions from Site 2 as they affect Site 1 receptors is the downwash effect;

2. With downwash effect incorporated into the analysis, the potential air quality impacts are not considered to be significant – even with the Site 2 stack located a minimum (10 foot) distance from Site 1, and with either natural gas or fuel oil.

3. Without downwash effects considered, compliance with the applicable standards could only be achieved with the Site 2 stack setback on bulkhead, and E-designations would be required for the stack location to be set back and to exclude the use of fuel oil.

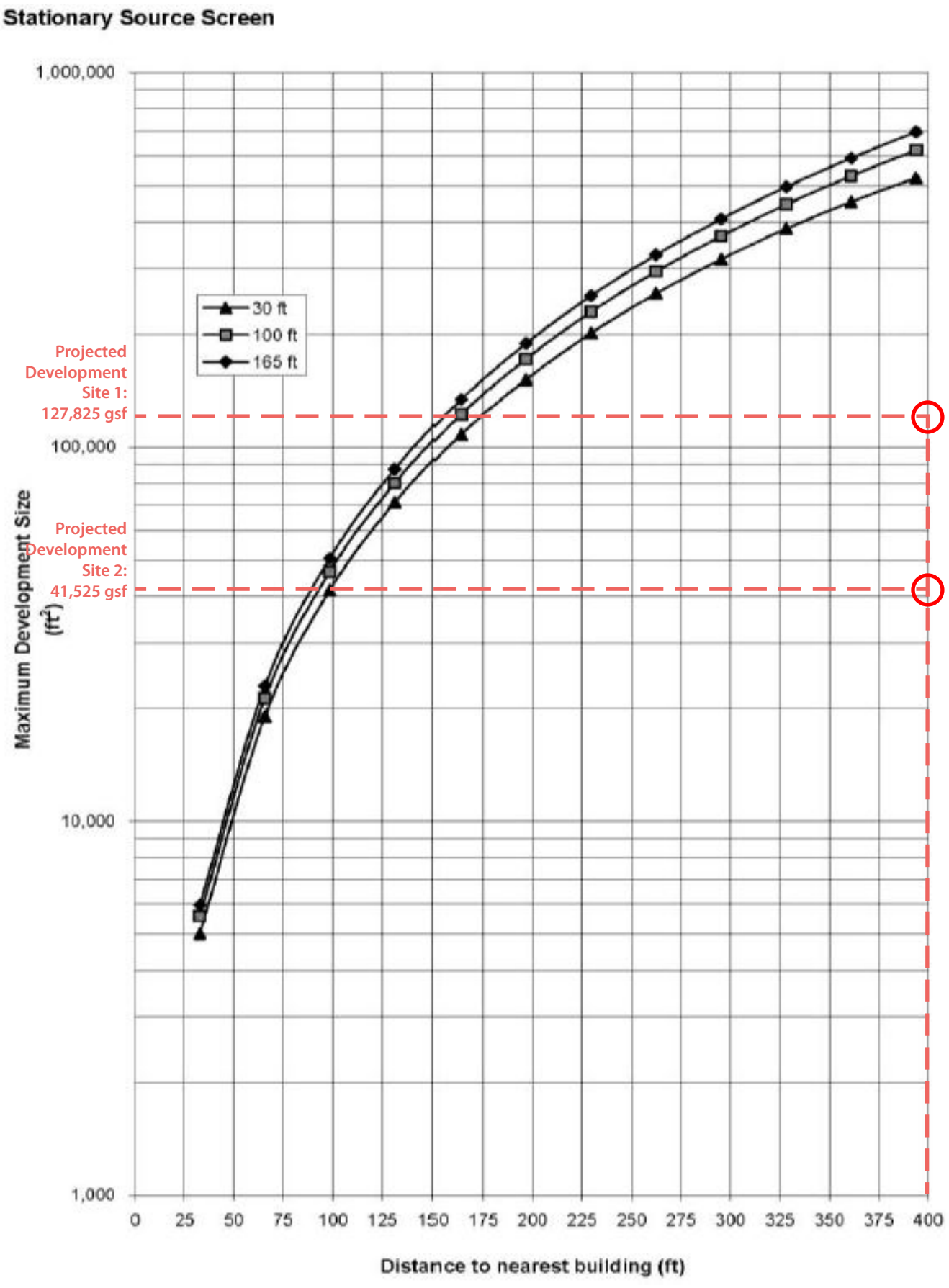
Noise

The purpose of a noise analysis is to determine both a proposed project's potential effects on sensitive noise receptors and the effects of ambient noise levels on new sensitive uses introduced by the proposed project. The principal types of noise sources affecting the New York City environment are mobile sources (primarily motor vehicles), stationary sources (typically machinery or mechanical equipment associated with manufacturing operations or building HVAC systems) and construction noise (e.g. trucks, bulldozers, power tools, etc.).

As detailed in the detailed assessment provided in Attachment H, "Noise," noise from the increased traffic volumes generated by the Proposed Actions would not cause significant adverse noise impacts as the relative increases in noise levels would fall below the applicable *2014 CEQR Technical Manual* significant adverse impact threshold (3.0 dBA).

Based on the calculated With-Action L_{10} noise levels, the following composite window/wall attenuations were determined for future residential/community facility uses as well as commercial uses within the rezoning area:

- A minimum of 31 dBA composite window/wall attenuation is required for residential/community facility uses on any western-facing facades of projected development site 1 (Lot 1) and 2 (Lot 7) fronting Fourth Avenue. The required composite window/wall attenuation for commercial uses would be 5 dBA less.


Stationary Source Screen
1,000,000
100,000
10,000
1,000
Maximum Development Size (ft²)
30 ft
100 ft
165 ft
Projected Development Site 1: 127,825 gsf
Projected Development Site 2: 41,525 gsf
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
Distance to nearest building (ft)

- No special attenuation measures beyond standard construction practices would be required for residential/community facility uses and commercial uses on any other frontage within the Project Area.

The composite window/wall noise attenuations described above would be required through the assignment of an (E)-designation for noise to projected development site's 1 and 2 (Block 652, Lots 1 and 7, respectively) in conjunction with the Proposed Actions. With implementation of the attenuation levels outlined above and described in Attachment H, the Proposed Actions and subsequent RWCDS projected developments would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior noise level guidelines. Therefore, the Proposed Actions would not result in any significant adverse impacts related to noise attenuation.

Public Health

Public health involves the activities that society undertakes to create and maintain conditions in which people can be healthy. Many public health concerns are closely related to air quality, water quality, hazardous materials, and noise.

According to the guidelines of the *2014 CEQR Technical Manual*, a public health assessment may be warranted if a project results in (a) increased vehicular traffic or emissions from stationary sources resulting in significant adverse air quality impacts; (b) increased exposure to heavy metals and other contaminants in soil/dust resulting in significant adverse impacts, or the presence of contamination from historic spills or releases of substances that might have affected or might affect groundwater to be used as a source of drinking water; (c) solid waste management practices that could attract vermin and result in an increase in pest populations; (d) potential significant adverse impacts to sensitive receptors from noise and odors; (e) vapor infiltration from contaminants within a building or underlying soil that may result in significant adverse hazardous materials or air quality impacts; (f) exceedances of accepted federal, state, or local standards; or (g) other actions that might not exceed the preceding thresholds but might, nonetheless, result in significant health concerns.

As detailed in the analyses provided in this EAS, the Proposed Actions would not result in significant adverse impacts in the areas of air quality, water quality, hazardous materials, or noise. Therefore, the Proposed Actions do not have the potential to result in significant adverse public health impacts, and further assessment is not warranted.

Neighborhood Character

As the EAS provides assessments of land use, zoning, and public policy (Attachment C), open space (Attachment E), urban design and visual resources (Attachment F), and noise (Attachment H), a preliminary screening analysis is necessary to determine if a detailed neighborhood character analysis is warranted.

Neighborhood character is an amalgam of various elements that give neighborhoods their distinct "personality." According to the *CEQR Technical Manual*, a preliminary assessment may be appropriate if a project has the potential to result in any significant adverse impacts on any of the following technical areas: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; or noise. Per the analyses provided in this EAS, although the proposed project required supplemental screening or assessment of some of these technical areas, there would be no action-generated significant adverse impacts.

The *CEQR Technical Manual* also states that for projects not resulting in significant adverse impacts to any technical areas related to neighborhood character, additional analyses may be required to determine if the Proposed Actions would result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character. However, the *CEQR Technical Manual* indicates that neighborhood character impacts are rare and it would be unusual that, in the absence of a significant adverse impact in any of the relevant technical areas, a combination of moderate effects in the neighborhood would result in any significant adverse impact to neighborhood character.

As the Proposed Actions would not be considered to have any significant effects on any of the technical areas relating to neighborhood character, a neighborhood character assessment can be screened out, and no significant adverse neighborhood character impacts would occur. Therefore, no additional analysis is warranted for neighborhood character.

Construction

Although temporary, construction impacts can include noticeable and disruptive effects from a project that is associated with construction or could induce construction. Determination of the significance of construction impacts and need for mitigation is generally based on the duration and magnitude of the impacts. Based on *CEQR Technical Manual* guidelines, when the duration of construction is expected to be short-term (less than two years), any impacts resulting from construction generally do not require detailed assessment. Construction impacts are usually important when construction activity could affect traffic conditions, archaeological resources, the integrity of historic resources, community noise patterns, and air quality conditions.

According to the *CEQR Technical Manual*, construction duration is broken into short-term (less than two years) and long-term (two or more years). Where the duration of construction is expected to be short-term, any resulting impacts generally do not require detailed assessment. For conservative analysis purposes, it is estimated that the two RWCDS projected development sites would each take up to 22 months to complete, with potential overlaps of construction period timing. As such, a preliminary assessment of potential construction impacts is warranted for the Proposed Actions.

Governmental Coordination and Oversight

The governmental oversight of construction in New York City is extensive and involves a number of city, state, and federal agencies. Table B-5 shows the main agencies involved in construction oversight and each agency's areas of responsibility. The primary responsibilities lie with New York City agencies. DOB has the primary responsibility for ensuring that construction meets the requirements of the Building Code, and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both construction workers and the public. The areas of responsibility include the installation and operation of construction equipment, such as cranes and lifts, sidewalk sheds, safety netting, and scaffolding. OER enforces the Noise Code, approves remedial action plans (RAPs) and Construction Health and Safety Plans (CHASPs), and regulates water disposal into the sewer system. The New York City Fire Department (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. The New York City Department of Transportation (DOT) reviews and approves any traffic land and sidewalk closures. New York City Transit (NYCT) is in charge of bus stop relocations and any subsurface construction within 200 feet of a subway. The Landmarks Preservation Commission (LPC) approves studies and testing to prevent loss of archaeological materials and to prevent damage to fragile historic structures.

TABLE B-5
Construction Oversight in New York City

Agency	Area(s) of Responsibility
New York City	
Department of Buildings (DOB)	Primary oversight for the Building Code and site safety, noise*
Mayor's Office of Environmental Remediation (OER)	Noise*, hazardous materials, dewatering, air quality, dust mitigation
Fire Department (FDNY)	Compliance with the Fire Code, tank operation
Department of Transportation (DOT)	Traffic lane and sidewalk closures
New York City Transit Authority (NYCT)	Bus stop relocation; any subsurface construction within 200 feet of a subway
Landmarks Preservation Commission (LPC)	Archaeological and historic architectural protection
New York State	
Department of Labor (DOL)	Asbestos workers
Department of Environmental Conservation (DEC)	Dewatering, hazardous materials, tanks, Stormwater Pollution Prevention Plan, Industrial State Pollution Discharge Elimination System (SPDES), if any discharge into the Hudson River
United States	
Environmental Protection Agency (EPA)	Air emissions, noise, hazardous materials, toxic substances
Occupational Safety and Health Administration (OSHA)	Worker safety

***** The Noise Code is typically enforced by OER, except for Special Mixed-Use Districts, where it is enforced by DOB.

The NYSDEC regulates discharge of water into rivers and streams, disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. The New York State Department of Labor (DOL) licenses asbestos workers. On the federal level, the United States Environmental Protection Agency (EPA) has wide ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons. Much of the responsibility is delegated to the state level. The United States Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

Conceptual Construction Schedule and Activities

Hours of Work

Construction activities for buildings in New York City generally take place Monday through Friday, with exceptions that are discussed separately below. In accordance with City laws and regulations, construction work on the projected development sites would generally begin at 7AM on weekdays, with workers arriving to prepare work areas between 6AM and 7AM. Construction work would typically end at 3:30PM, but at times the workday could be extended to complete some specific tasks beyond normal work hours, such as completing the drilling of piles, finishing a concrete pour for a floor deck, or completing the bolting of a steel frame erected that day. The extended workday could last until about 9PM and would not include all construction workers on-site, but just those involved in the specific task requiring additional work time. Extended work hours would be subject to after-hours work variance permits from DOB. Additionally, all construction sites require preparation of a noise mitigation plan as outlined in Section 24-219 of the Administrative Code of the City of New York.

Occasionally, Saturday or overtime hours may be required to complete time-sensitive tasks. Weekend work requires a permit from the DOB and, in certain instances, approval of a noise mitigation plan from the DEP under the City's Noise Code. The New York City Noise Control Code, as amended December 2005 and effective July 1, 2007, limits construction (absent special circumstances as described below) to

weekdays between the hours of 7AM and 6PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6PM and 7AM and on weekends) may be permitted only to accommodate: (i) emergency conditions; (ii) public safety; (iii) construction projects by or on behalf of City agencies; (iv) construction activities with minimal noise impacts; and (v) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts and/or financial considerations. In such cases, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. The typical weekend workday would be on Saturday from 7AM with worker arrival and site preparation to 5PM for site cleanup, or as specified in DOB-issued work variance permits.

Construction Sequencing

As with all construction projects in New York City, construction activities would normally take place Monday through Friday, although the delivery/installation of certain critical equipment could occur on weekend days with special permission from DOB. Construction staging would most likely occur on the projected development sites and may occasionally extend within portions of the sidewalks, curbs, and travel lanes of public streets adjacent to the sites. Any sidewalk or street closures require the approval of DOT's Office of Construction Management and Coordination (DOT-OCMC), the entity that insures critical arteries are not interrupted, especially in peak travel periods. Builders would be required to plan and carry out noise and dust control measures during construction. In addition, there would be requirements for street crossing and entrance barriers, protective scaffolding, and strict compliance with all applicable construction safety measures.

As previously noted, for conservative analysis purposes, it is assumed that the two RWCDS projected development sites would each take up to 22 months to complete. However, it is unlikely that construction timelines would overlap between Projected Development Site 1 and Projected Development Site 2. Table B-6 illustrates the conceptual construction sequencing of the two RWCDS projected development sites associated with the Proposed Actions. As shown in the table, it is expected that each site would undergo an initial approximately six months of demolition/excavation/foundation work, approximately six months of building superstructure erection, and approximately 10 months of exterior and interior building fit-out. An outline of typical construction activities expected to take place during these stages is provided below.

TABLE B-6
Conceptual Design and Construction Sequencing of Projected Development Sites 1 & 2

Projected Development Sites	2019				2020				2021				2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1 (Lot 1)																								
2 (Lot 7)																								

KEY:	
	Design/Construction Document Approvals
	Demolition/Excavation/Foundation
	Building Superstructure
	Exterior/Interior Fit-Out

Typical Construction Activities

- Stage 1 (Months 1-6): Site clearance, excavation, and foundation. The first step in this construction phase would be a remediation of hazardous materials on each projected

development site. Typical equipment used for these activities would include excavators, backhoes, tractors, pile-drivers, hammers, and cranes. Trucks would arrive at the sites to remove any material and construction debris. As discussed in the assessment of potential hazardous materials impacts above, remediation is required at each projected development site, and all necessary abatement activities would be conducted in accordance with OER-approved Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP). Subsequently, the remainder of the sites would be cleared in preparation for excavation.

Once soil remediation is completed, below grade excavation and construction would begin. Project construction activities are expected to be typical of similar medium-density construction projects in New York City, including digging; excavation for the foundation; dewatering (to the extent required), and reinforcing and pouring of the foundation. Typical equipment used for these activities would include excavators, backhoes, tractors, hammers, and cranes. Trucks would arrive at the sites with pre-mixed concrete and other building materials, and would remove any excavated material and construction debris.

- Stage 2 (Months 7-10): Erection of the superstructure. Once the foundations have been completed, the construction of the buildings' steel, block, and plank framework would take place. This process involves the installation of CMU blocks, beams, columns and decking or concrete plank, and would require the use of cranes, derricks, hoists, and welding equipment, as warranted.

- Stage 3 (Months 11-22): Façade and roof construction, mechanical installation, interior and finishing work. This would include the assembly of exterior walls and cladding; installation of heating, ventilation and air conditioning (HVAC) equipment and ductwork; installation and checking of elevator, utility, and life safety systems; and work on interior walls and finishes. During these activities, hoists and cranes would continue to be used as warranted, and trucks would remain in use for material supply and construction waste removal. It should be noted that much of this work occurs when the building is fully enclosed, and therefore is not disruptive to the surrounding neighborhood.

During the course of construction, traffic lanes and sidewalks adjacent to the projected development sites may have to be intermittently or temporarily closed or protected for varying periods of time to allow for certain construction activities. Any sidewalk or street closures would require the approval of DOT-OCMC, the entity that ensures critical arteries are not interrupted, especially in peak travel periods. Construction activities would be subject to compliance with the New York City Noise Code and EPA noise emission standards for construction equipment. In addition, there would be requirements for street crossing and entrance barriers, protective scaffolding, and strict compliance with all construction safety measures outlined in the DEP-approved CHASP.

As shown in Table B-6, the anticipated construction timelines detailed above would not overlap. However, for conservative analysis purposes, in the event that the design process (i.e., schematic drawings and design development) for Projected Development Site 2 commence in early-to-mid-2020 immediately following completion of the ULURP process, and if project design and construction documents are all approved by mid-2021, construction activity on Lot 7 could potentially begin by mid-to-late 2021. As such, construction overlaps between Projected Development Site 1 and Projected Development Site 2 could occur for approximately six-to-nine months between mid-to-late 2021 and early 2022. However, these

overlaps would occur while one site undergoes initial demolition/excavation/foundation work and one site completes its exterior/interior building fit-out. As noted above, the last few months of construction (during the exterior/interior building fit-out stage) typically occur within the fully enclosed building envelope, and this stage is therefore not externally disruptive. Additionally, as the lots and projected buildings are not large, completion of each site could easily occur in less than 22 months. As such, potential overlapping construction timelines in the Project Area would not result in significant disturbances to the surrounding neighborhood.

Potential Impacts During Construction

In accordance with the *CEQR Technical Manual*¸ development facilitated by the Proposed Actions was reviewed to determine whether further analysis of the proposed construction activities is needed for any technical area, as discussed below.

Land Use and Neighborhood Character

According to the *CEQR Technical Manual*, a construction impact analysis of land use and neighborhood character is typically needed if construction would require continuous use of a property for an extended duration, thereby having the potential to affect the nature of the land use and character of the neighborhood. A land use and neighborhood character assessment for construction impacts looks at the construction activities that would occur on the site (or portions of the site) and their duration. The analysis determines whether the type and duration of the activities would affect neighborhood land use patterns or neighborhood character. For example, a single property might be used for staging for several years, resulting in a "land use" that would be industrial in nature. Depending on the nature of existing land uses in the surrounding area, this use of a single piece of property for an extended duration and its compatibility with neighboring properties may be assessed to determine whether it would have a significant adverse impact on the surrounding area.

Construction activities would affect land uses on the two projected development sites (which all currently accommodate commercial retail and/or auto repair uses), but would not alter surrounding land uses. Construction of each building would occur over a period of up to 22 months. As is typical with construction projects in New York City, during periods of peak construction activity there would be some disruption, predominantly noise, to the nearby area. There would be construction trucks and construction workers coming to the site as well as noise, sometimes intrusive, from building construction, and trucks and other vehicles backing up, loading, and unloading. These disruptions would be temporary in nature and would have limited effects on land uses in the surrounding area, particularly as most construction activities would take place on the projected development sites or on portions of sidewalks, curbs, and/or travel lanes of public streets immediately adjacent to the sites.

Throughout the construction period, access to residences, businesses, and institutions in the area surrounding the projected development sites would be maintained, as required by City regulations. In addition, as required by applicable laws and regulations, measures would be implemented to control noise, vibration, emissions, and dust on construction sites, including the erection of construction fencing. Because none of these impacts would be continuous or ultimately permanent and would be limited to the Project Area and its immediate vicinity, they would not create significant impacts on land use patterns or neighborhood character in the area. Therefore, while construction of the projected development sites would cause temporary impacts, it is expected that such impacts in any given area would be relatively short-term and therefore not create a land use or neighborhood character impact. Therefore, no

significant adverse construction impacts to land use or neighborhood character are expected as a result of the Proposed Actions and further assessment is not warranted.

Socioeconomic Conditions

According to the *CEQR Technical Manual*, construction impacts to socioeconomic conditions are possible if a development would entail construction of a long duration that could affect the access to and therefore viability of a number of businesses, and if the failure of those businesses has the potential to affect neighborhood character. Construction activities associated with the Proposed Actions would not result in any significant adverse impacts to socioeconomic conditions. Construction of the two projected development sites would be of limited duration, each lasting up to 22 months, with the potential for construction overlap unlikely, as detailed above. Construction would, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the projected development sites, including Fourth Avenue, 24th Street, and 25th Street. However, lane and/or sidewalk closures are expected to be of very limited duration and would not occur in front of entrances to any existing businesses. In addition, construction activities would not obstruct major thoroughfares used by customers or businesses, and businesses would not be significantly affected by any temporary reductions in the amount of pedestrian foot traffic or vehicular delays that could occur as a result of construction activities. As such, no significant adverse construction impacts to socioeconomic conditions are anticipated as a result of the Proposed Actions and further assessment is not warranted.

Community Facilities & Services

According to the *CEQR Technical Manual*, construction impacts on community facilities are possible if a community facility would be directly affected by construction (i.e., if construction would disrupt services provided at a facility or close a facility temporarily). Construction activities facilitated by the Proposed Actions would not physically displace or alter any existing community facilities. No community facilities would be directly affected by construction activities for an extended duration. The projected development sites would be surrounded by construction fencing and barriers that would limit the effects of construction on nearby facilities. Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, child care facilities, and health care services in the area. Construction of the projected development sites would not block or restrict access to any community facilities in the area, and would not materially affect emergency response times. NYPD and FDNY emergency services and response times would not be materially affected as a result of the geographic distribution of the police and fire facilities and their respective coverage areas throughout the City. Therefore, no significant adverse construction impacts to community facilities are anticipated as a result of the Proposed Actions and further assessment is not warranted.

Open Space

According to the *CEQR Technical Manual*, construction impacts to open space are possible if open space resources are taken out of service for a period of time during the construction process. No open space resources would be disrupted during the construction of the projected development sites, nor would access to any publicly accessible open spaces be impeded during construction. Although construction activities may generate higher noise levels during the early stages of construction, those levels would be temporary and construction activities in the Project Area would be required to comply with the New York City Noise Code, which regulates construction noise to reduce the effects on noise sensitive receptors including public parks. Additionally, construction fences around the projected development sites would

shield nearby open space resources from construction activities. As such, no construction impacts related to open space are expected as a result of the Proposed Actions, and no further assessment is warranted.

Historic and Cultural Resources

According to the guidelines in the *CEQR Technical Manual*, construction impacts may occur on historic and cultural resources if in-ground disturbances or vibrations associated with project construction could undermine the foundation or structural integrity of nearby resources. As discussed above, the Project Area does not contain any architecturally and/or archaeologically significant resources of concern, and there are no architectural or archaeological resources within 90 feet of the proposed rezoning area (refer to Appendix III). Therefore, no construction impacts related to historic and cultural resources are anticipated as a result of the Proposed Actions, and further assessment is not warranted.

Natural Resources

According to the *CEQR Technical Manual*, a preliminary construction assessment is not required for natural resources unless the construction activities would disturb a site or be located adjacent to a site containing natural resources. As there are no natural resources within the Project Area or its vicinity, no significant adverse construction impacts to natural resources are likely as a result of the Proposed Actions, and no further assessment is warranted.

Hazardous Materials

According to the guidelines of the *CEQR Technical Manual*, a construction assessment is not needed for hazardous materials unless the construction activities would disturb a site or be located adjacent to a site containing hazardous materials. Both a Phase I and Phase II ESA was conducted for both Projected Development Sites 1 and 2 on Lots 1 and 7, respectively, as detailed above. Based on the findings of both Phase II ESAs, and as NYSDEC indicated that they are in the process of closing Spill #93-05122, PWGC did not recommend any further action. As such, it was determined that the Proposed Actions would not result in significant adverse impacts related to hazardous materials. Additionally, all applicable federal, state, and city regulations pertaining to the asbestos, lead paint, and other toxic substances would be required during and after completion of demolition activities, and any required CHASPs would be submitted to OER. Therefore, no significant adverse construction impacts related to hazardous materials are anticipated as a result of the Proposed Actions, and further assessment is not warranted.

Transportation

Construction of the proposed buildings would generate trips resulting from arriving and departing construction workers, movement of materials and equipment, and removal of construction waste. As discussed above, construction of the projected development sites are expected to occur during the typical construction hours of 7AM and 3:30PM. Therefore, worker trips would be concentrated in off-peak hours and would not represent a substantial increment during the area's peak travel periods. Construction workers would use both public transportation and private automobiles. Construction workers typically park off-site for larger developments and at curbside in the vicinity of smaller developments. These curbside spaces are typically available as area residents use their autos to travel to work and elsewhere, and are vacated by construction workers in the afternoon before resident demand increases after the typical workday.

Truck movements would be spread throughout the day and would generally occur between the hours of 6AM and 3PM, depending on the stage of construction. Flaggers are expected to be present during construction to manage the access and movements of trucks to and from the proposed development site. Little if any rerouting of traffic is anticipated as a result of the construction of the proposed buildings. Additionally, moving lanes of traffic are expected to be available at all times along the affected streets except on limited days when cranes will be erecting planks. These conditions would be temporary and not result in significant adverse impacts on traffic conditions.

Construction activities could result in short-term disruption of pedestrian movements around the Project Area, occurring primarily as a result of the temporary loss of curbside lanes from the staging of equipment and the movement of materials to and from the site. Additionally, it is anticipated that some sidewalks immediately adjacent to the projected development sites on Fourth Avenue, 24th Street, and 25th Street could also be closed to accommodate heavy loading areas for at least several months of the construction period for activities associated with the construction of each projected development site. These activities would include the unloading of construction materials from trucks and the loading of trucks with construction debris. Curb lane and/or sidewalk closures would not affect access points to public transportation including subway and bus stops. In these instances, pedestrians would either walk on the opposite side of the street or in a sectioned-off portion of the street. Detailed Maintenance and Protection of Traffic (MPT) Plans for each building would be submitted prior to construction for approval by DOT-OCMC, which issues permits for any street/sidewalk closures after evaluation of traffic and pedestrian conditions. Appropriate protective measures for ensuring pedestrian safety surrounding each of the projected development sites would be implemented under these plans. Therefore, no significant adverse construction impacts on transportation are anticipated as a result of the Proposed Actions, and no further analysis is warranted.

Air Quality

Possible impacts on local air quality during construction of the two projected development sites include: fugitive dust (particulate) emissions from land clearing operations; and mobile source emissions, including hydrocarbons, nitrogen oxide, and carbon monoxide.

Fugitive dust emissions could occur from land clearing, excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Actual quantities of emissions depend on the extent and nature of the land clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which are expected to settle within a short distance from the construction site and to not significantly impact nearby buildings or people. All appropriate fugitive dust control measures, including watering of exposed areas and dust covers for trucks, would be employed during construction of the projected developments.

Mobile source emissions may result from the operation of construction equipment, trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near a construction site. Localized increases in mobile source emissions would be minimized by following standard traffic maintenance requirements, such as:

- Construction requiring temporary street closings would be performed during off-peak hours wherever possible;

- The existing number of traffic lanes would be maintained to the maximum extent possible;
- Idling of delivery trucks or other equipment would not be permitted during unloading or other inactive times.
- Use of best available technologies with regard to emissions for construction equipment; and
- Implementation of real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed.

Additionally, as detailed above in "Land Use, Zoning, & Public Policy," the buildings in the immediate vicinity of the projected development sites are predominately classified as industrial/ manufacturing. Due to the distances of sensitive receptors from the projected development sites, it is not expected that any fugitive dust or mobile source emissions occurring in the immediate vicinity of the sites would negatively affect these sensitive receptors. Therefore, no significant adverse construction impacts related to air quality are expected as a result of construction facilitated by the Proposed Actions, and further analysis is not warranted.

Noise

Impacts on noise levels during construction of the projected development sites would include noise and vibration from the operation of construction equipment and delivery vehicles traveling to and from the proposed construction site. The severity of impacts from these noise sources would depend on the noise characteristics of the equipment and activities involved, the construction schedule, and the distance to potentially sensitive noise receptors. Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, as well as the distance from the construction site. Noise caused by construction activities would vary widely, depending on the phase on construction – demolition, land clearing and excavation, foundation and capping, erection of structural steel, construction of exterior walls, etc. – and the specific task being undertaken. Increased noise levels caused by construction activities can be expected to be most significant during the early phases of construction before the buildings are enclosed (approximately ten months for each building). Increases in noise levels caused by delivery trucks and other construction vehicles would not be significant. Small increases in noise levels are expected to be found near a few defined truck routes and the streets in the immediate vicinity of the Project Area. Additionally, as detailed in Attachment H, "Noise," it is not anticipated that construction of the projected development sites would result in noise that would negatively affect nearby sensitive receptors.

Construction noise is regulated by the New York City Noise Control Code and by EPA emission standards for construction equipment. These local and federal requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emissions standards; that, except under exceptional circumstances, construction activities be limited to weekdays between the hours of 7AM and 6PM; and that construction material be handled and transported in such a manner as not to create unnecessary noise. These regulations would be carefully followed in the future with the Proposed Actions. In addition, appropriate low-noise emission level equipment and operational procedures would be used. Compliance with noise control measures would be ensured by directives to the construction contractor. Therefore, no significant adverse construction impacts related to noise are anticipated as a result of the Proposed Actions, and no further analysis is warranted.

Attachment C
Land Use, Zoning & Public Policy

I. INTRODUCTION

737 Fourth Avenue, LLC (the "Applicant") is seeking zoning map and text amendments from the New York City Planning Commission (CPC) (the "Proposed Actions") to facilitate the development of a predominantly residential building with ground floor retail at 737 Fourth Avenue in the Greenwood Heights neighborhood of Brooklyn Community District (CD) 7. As presented in Attachment A, "Project Description," under the reasonable-worst case development scenario (RWCDS), the Proposed Actions would facilitate the incremental development of 189 dwelling units (DUs) (including a net increase of up to approximately 47 affordable DUs[1]) and 2,925 gross square feet (gsf) of ground floor commercial (local retail) space, as well as 34 accessory parking spaces in one below-grade level, on two projected development sites by 2024.

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 and zoning is warranted and 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.

II. PRINCIPAL CONCLUSIONS

No significant adverse impacts on land use, zoning, or public policy, as defined by the guidance for determining impact significance set forth in the *CEQR Technical Manual*, are anticipated in the 2024 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 residential uses as-of-right and increasing the allowable residential and community facility bulk. The Proposed Actions would not directly displace any land uses to adversely affect surrounding land uses, nor would they generate land uses that would be incompatible with land uses, zoning, or public policy in the secondary study area. The Proposed Actions would not create land uses or structures that would be incompatible with the underlying zoning, nor would they cause a substantial number of existing structures to become nonconforming. Moreover, the Proposed Actions would not result in land uses that conflict with public policies applicable to the primary or secondary study areas.

[1]For CEQR analysis purposes, "affordable" refers to residential units set aside for households earning 60 percent or below of the Area Median Income (AMI) under Option 1 of the Mandatory Inclusionary Housing (MIH) Program.

III. METHODOLOGY

The purpose of this analysis is to examine the effects of the Proposed Actions and determine whether or not they would result in any significant adverse impacts on land use, zoning, or public policy. The analysis methodology is based on the guidelines of the *CEQR Technical Manual* and examines the Proposed Actions consistency with land use patterns and development trends, zoning regulations, and other applicable public policies.

According to the *CEQR Technical Manual*, a detailed assessment of land use, zoning, and public policy may be appropriate when a change in land use and zoning would occur and a preliminary assessment cannot succinctly describe land use conditions in the study area. As the Proposed Actions would result in changes to permitted use, density, and bulk on a site in an area where land uses on other sites will change under No-Action conditions, a detailed assessment is necessary to provide a sufficient description and assessment of the effects on conditions. In addition, a detailed assessment is needed to sufficiently inform other technical reviews and determine whether changes in land use could affect conditions analyzed in those technical areas. Therefore, this attachment includes a detailed analysis that involves a thorough description of existing land uses within the directly affected area and the broader study area. Following the guidelines of the *CEQR Technical Manual*, the detailed analysis describes existing and anticipated future conditions to a level necessary to understand the relationship of the Proposed Actions to such conditions, assesses the nature of any changes on these conditions that would be created by the Proposed Actions, and identifies those changes, if any, that could be significant or adverse.

As noted 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 this assessment, the primary study area encompasses the Project Area (comprising Lots 1 and 7 in their entirety on Brooklyn Block 652). 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. The secondary study area is generally bound by midway between Third and Fourth avenues to the northwest, midway between 22nd and 23rd streets to the northeast, midway between Fourth and Fifth avenues to the southeast, and midway between 26th and 27th streets to the southwest. Both the primary and secondary study areas have been established in accordance with *CEQR Technical Manual* guidance and can be seen in Figure C-1.

Existing land uses were identified through review of a combination of sources including field surveys and secondary sources (such as the *South Park Slope Rezoning EAS* (2005) and the *Special Fourth Avenue Enhanced Commercial District EAS* (2011)), as well as the City's Primary Land Use Tax Lot Output (PLUTO™) data files for 2018 and websites, such as NYC Open Accessible Space Information System (OASIS, www.oasisnyc.net) and NYCityMap (http://gis.nyc.gov/doitt/nycitymap/). New York City Zoning Maps and the Zoning Resolution (ZR) of the City of New York were consulted to describe existing zoning districts in the study areas and provided the basis for the zoning evaluation of the future No-Action and future With-Action conditions. 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.

As described in Attachment A, "Project Description," in order to assess the possible effects of the Proposed Actions, an RWCDS was established for the future without the Proposed Actions (the No-Action condition) and future with the Proposed Actions (the With-Action condition) for the Project Area in the 2024 analysis year. The analysis projects land use, zoning, and public policy conditions in the 2024 analysis

Figure C-1
Land Use Study Areas

Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2
- 652 Tax Block
- 1 Tax Lot
- Existing Buildings

year without the Proposed Actions. The No-Action conditions 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 2024 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* guidance, 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 community facilities (public elementary and intermediate schools), open space, urban design and visual resources, air quality, and noise. Therefore, a detailed assessment of land use and zoning is warranted and provided in Section V below.

In addition, an assessment of public policy should accompany an assessment of land use and zoning. 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 area. If the proposed project could potentially alter or conflict with identified policies, a detailed assessment should be conducted. Otherwise, no further analysis of public policy is necessary. As the Project Area is located within

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 area. 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 designated Industrial Business Zone (IBZ), a Business Improvement District (BID), a designated historic district, or within an area defined by an adopted 197-a plan. The land use study area also falls outside of New York City's coastal zone boundary and therefore would not be subject to the City's Waterfront Revitalization Program. Applicable public policies to the study areas include the Food Retail Expansion to Support Health (FRESH) Program, the Southwest Brooklyn Empire Zone, Housing New York, and One New York: The Plan for a Strong and Just City (OneNYC).

The primary and secondary study areas are located within a FRESH-designated area. The FRESH Program promotes the establishment and retention of neighborhood grocery stores in underserved communities by providing zoning and financial incentives to eligible grocery store operators and developers. The land use study area is located within a FRESH program area that provides discretionary financial incentives to promote the establishment and retention of neighborhood grocery stores, including real estate tax reductions, sales tax exemption, and mortgage recording tax deferral (note that the FRESH Program, as applicable to the primary and secondary study area, does not provide zoning incentives). Stores that benefit from the FRESH program must also meet the following criteria: a) provide a minimum of 6,000 sf of retail space for a general line of food and non-food grocery products intended for home preparation, consumption and utilization; b) provide at least 50 percent of a general line of food products intended for home preparation, consumption and utilization; c) provide at least 30 percent of retail space for perishable goods that include dairy, fresh produce, fresh meats, poultry, fish and frozen foods; and d) provide at least 500 sf of retail space for fresh produce.

Under the proposed C2-4 commercial overlay in the with-action condition, FRESH supermarkets as well as other food stores would be permitted as-of-right in the Project Area. However, there are no current plans to include a supermarket as part of the proposed 8,896 gsf of commercial uses on Projected Development Site 1. Additionally, it is unclear at this time whether the projected commercial uses at the Projected Development Site 2 would include a supermarket. However, when considering Projected Development Site 2's lot size, allowable commercial floorplate, and projected future commercial uses[2], as well as the site's FRESH Program designation, which does not provide zoning incentives, it is reasonable to believe that a supermarket would not be included on this site in the future With-Action condition. As such, the Proposed Actions would not alter or conflict with the objectives of the FRESH program, and no significant adverse impacts would result.

Portions of the primary and secondary study areas fall within the New York State designated South Brooklyn Empire Zone. Empire Zones are designated areas throughout the State that offer special incentives to encourage economic and community development, business investment, and job creation. As an Empire Zone, South Brooklyn receives numerous financial incentives intended to attract new businesses and enable existing businesses to expand their operations. These incentives typically extend for a fixed number of years and may include items such as tax credits, sales tax exemptions, utility rate reductions, and low-interest loans. The Proposed Actions would result in the introduction of new commercial and local retail uses that would provide an opportunity for economic development and help further the objectives of the South Brooklyn Empire Zone. Therefore, the Proposed Actions would not conflict with the goals or objectives of the South Brooklyn Empire Zone.[3]

The Proposed Actions would support the policies and goals of *Housing New York* by establishing a MIH Area encompassing the area to be rezoned, which would require development in the With-Action Condition to include permanent affordable dwelling units. Pursuant to the MIH, at a minimum 25 percent of residential floor area in the With-Action Condition would be allocated to affordable housing units for low, moderate, and middle-income families. The affordable dwelling units under the With-Action Condition would provide the area with a 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,

[2] It is anticipated that Projected Development Site 2 would include approximately 3,120 gsf of commercial uses in the future With-Action condition. As this is significantly less than the FRESH Program's minimum requirement of 6,000 sf of retail space for food and non-food grocery products, it is reasonable to assume that Projected Development Site 2 would not qualify for the FRESH Program's financial incentives, and as such, would not include a supermarket on the site in the future With-Action condition.

[3] It should be noted that the New York State Empire Zone program is closed to new entrants.

the development under the With-Action Condition would be consistent with the policy goals and objectives of *Housing New York*.

One New York: The Plan for a Strong and Just City (OneNYC) OneNYC is the City's long-term sustainability plan to address New York City's long-term challenges: the forecast of nine million residents by 2040, changing climate conditions, an evolving economy, and aging infrastructure. The plan sets goals and targets that are both aspirational and achievable, encompassing both short-term actions and ambitious plans to address future challenges. Originally released in 2007, and updated most recently in 2011 and 2015 under Local Law 84 (2013), a long-term plan that considers population projections, housing, air quality, coastal protections, and other sustainability and resiliency factors is required every four years on Earth Day. The plan is divided into four visions for a stronger, more equitable, more sustainable, and more resilient New York City, and includes over 200 new initiatives, with over 80 specific new metrics and targets. OneNYC represents a unified vision for a sustainable, resilient, and equitable city and charts the path for collectively achieving this goal. The Proposed Actions are consistent with the goals of OneNYC, as it would result in the creation of affordable housing and contribute to the economic development of Greenwood Heights and the greater Brooklyn area.

V. DETAILED ASSESSMENT

Existing Conditions

Land Use

Primary Study Area (Project Area)

The approximately 20,034-sf Project Area, which is coterminous with the primary study area, comprises the 15,017-sf Applicant-owned Brooklyn Block 652, Lot 1 (Projected Development Site 1), and the 5,017-sf Lot 7 of Block 652 (Projected Development Site 2; also Applicant-owned) in the Greenwood Heights neighborhood of Brooklyn CD 7. The Project Area has frontage on Fourth Avenue to the northwest, 24th Street to the northeast, and 25th Street to the southwest.

Projected Development Site 1 at 737 Fourth Avenue (Lot 1 on Block 652) is a rectangular-shaped corner lot with approximately 150 feet of frontage on Fourth Avenue (a wide street), and 50 feet of frontage on 25th Street (a narrow street). It has a total lot area of 15,017-sf and is occupied by a single-story (15-feet in height) commercial building containing an approximately 4,774 gsf Dunking Donuts/Basking-Robbins eating and drinking establishment (0.32 FAR) with an accessory drive-through and 11 accessory off-street parking spaces. The New York City Department of Buildings (DOB) estimates that the existing building on Lot 1 was constructed in 2002. The building is set back from Fourth Avenue and 25th Street, and occupies the northern half of the site, while the 11-space at-grade parking lot occupies the southern half of the site, which is accessible from curb cuts on Fourth Avenue and 25th Street.

The other property within the primary study area – Lot 7 (Projected Development Site 2) – abuts Lot 1 to the northeast, and is also owned and controlled by the Applicant. Lot 7, a corner lot at 741 Fourth Avenue with approximately 50 feet of frontage on Fourth Avenue and 100 feet of frontage on 24th Street (a narrow street), would be located entirely within the Project Area. Projected Development Site 2 comprises approximately 5,017 sf of lot area, and is occupied by a two-story (29-feet in height), approximately 4,317 gsf (0.86 FAR) building containing several commercial uses, including an eating and drinking establishment, autobody repair, and a vehicle lease return office. The commercial uses have main

entrances on both Fourth Avenue and 24th Street. DOB estimates that the existing building on Lot 7 was constructed in 1960 with alterations in 1973 and 1984. The existing building on Lot 7 is generally built to the lot line.

Secondary Study Area

As shown in Figure C-2 and Table C-1, existing land uses within the study area are mostly residential and industrial with some public facility uses and commercial/office buildings. There are few vacant lots and parking facilities spread throughout the study area, and commercial uses are generally concentrated along Fourth Avenue. Residential uses, including attached and detached one- and two-family homes and higher-density walkup apartment buildings, are primarily located north of 24th Street; an exception to this includes a single elevator apartment building located on 25th Street between Fourth and Fifth avenues. Industrial uses are generally located in the midblocks between 24th and 26th streets. In addition, there are a couple of mixed-use commercial and residential buildings, which are also generally concentrated along Fourth Avenue.

TABLE C-1
Existing Land Uses within the Secondary Study Area

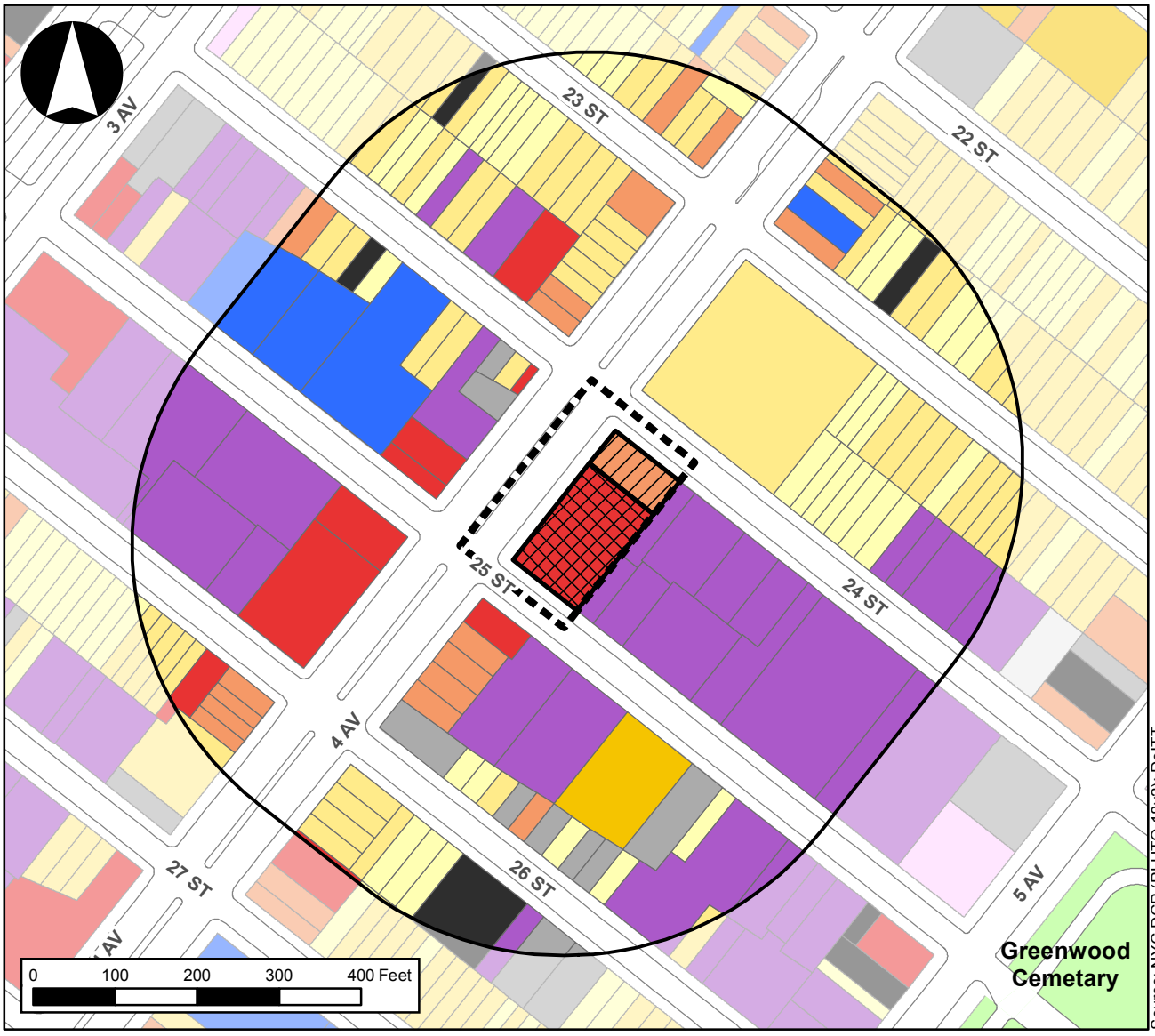
Land Use	Number of Lots	Percentage of Total Lots (%)	Lot Area (sf)	Percentage of Total Lot Area (%)	Building Area (sf)	Percentage of Total Building Area (%)
Residential	110	60.1%	283,140 sf	39.0%	504,190 sf	46.3%
One & Two-Family Residential	42	23.0%	83,839 sf	11.6%	81,833 sf	7.5%
Multi-Family Walkup Buildings	67	36.6%	185,741 sf	25.6%	389,207 sf	35.7%
Multi-Family Elevator Buildings	1	0.5%	13,560 sf	1.9%	33,150 sf	3.0%
Mixed Commercial/Residential Buildings	18	9.8%	37,464 sf	5.2%	67,053 sf	6.2%
Commercial/Office Buildings	10	5.5%	57,430 sf	7.9%	111,052 sf	10.2%
Industrial/Manufacturing	27	14.8%	255,464 sf	35.2 %	336,064 sf	30.8 %
Transportation/Utility	0	0%	0 sf	0 %	0 sf	0 %
Public Facilities & Institutions	4	2.2%	45,549 sf	6.3%	47,734 sf	4.4%
Open Space	0	0%	0 sf	0%	0 sf	0%
Parking Facilities	10	5.5%	30,343 sf	4.2%	23,727 sf	2.2%
Vacant Land	4	2.2%	16,074 sf	2.2%	0 sf	0%
Total	183	100.0%	725,464 sf	100.0%	1,089,820 sf	100.0%

Source: 2018 v1 PLUTO Data

Higher density multifamily residential buildings are generally located closer to the avenues, and one- and two-family homes generally characterize the midblocks between the avenues. Much of the residential uses are located on small lots, with an average lot size of approximately 2,500 sf. Community facility uses, which include two houses of worship (Our Lady of Czestochowa-St. Casimir Parish and Iglesia Cristiana Rehoboth), are scattered throughout the area. Fourth Avenue is an active commercial corridor featuring low-rise commercial uses including clothing and accessory stores, fast food, services, and supermarkets, and a few mixed-use buildings.

As mentioned above, low-rise light industrial uses are primarily located in the midblocks between 24th and 26th streets. These buildings are generally one- to two-story warehouse and light manufacturing buildings

Figure C-2
Land Uses



Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2

Land Uses

- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Building
- Mixed Commercial/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Public Facilities & Institutions
- Parking Facilities
- Vacant Land

set on large, rectangular-shaped lots. Some light-industrial uses in this area include bakeries, distributors, and art studios.

Within the secondary study area, the 25th Street R subway station is located directly southwest of the primary study area, with the northbound and southbound service entrances located on the southeast and southwest corners of Fourth Avenue and 25th Street, respectively. The 36th Street D/N/R subway station is located approximate 0.5 miles southwest of the primary study area, with station entrances on the northeast and northwest corners of Fourth Avenue and 36th Street. In addition, several local and express bus services are provided just outside the secondary study area, including the B63 (connecting Bay Ridge and Cobble Hill) which runs along Fifth Avenue one block southeast of the primary study area, and the B37 (connecting Bay Ridge and Boerum Hill) which runs along Third Avenue one block northwest of the primary study area. There are also two CitiBike stations located approximately 0.5 miles southwest of the primary study area along Second Avenue: one at the 36th Street intersection, and one at the 39th Street intersection.

Zoning

Primary Study Area

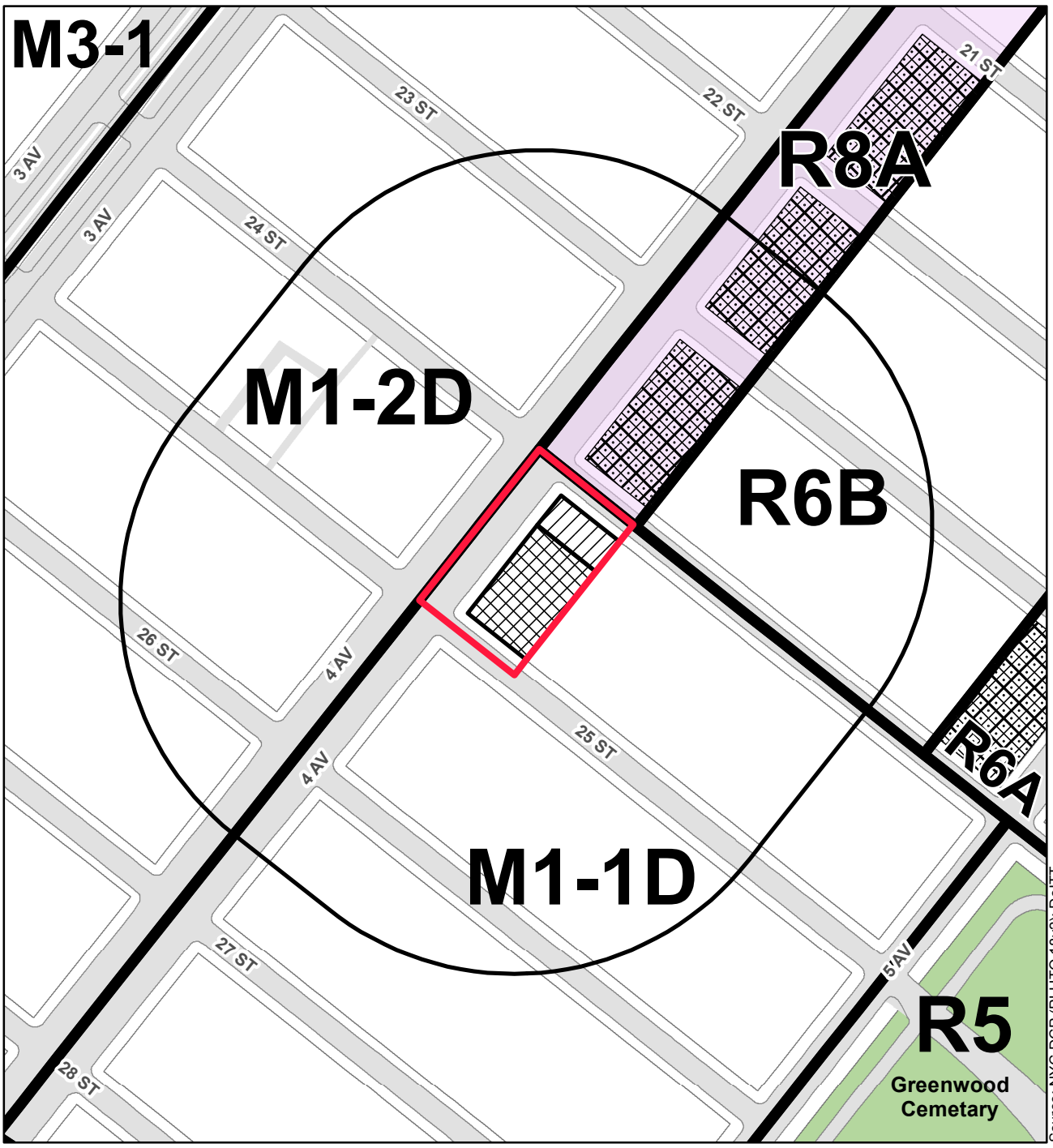
As shown in Figure C-3, the Project Area is located in a M1-1D zoning district, a designation that resulted from a zoning map amendment in January 1990. Prior to the 1990 map amendment, this district was originally zoned as a M1-1 zoning district, which was established as part of the 1961 Zoning Resolution. M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities (Use Groups 4 to 14, 16, and 17). Offices, hotels, and most retail uses are also permitted, while certain community facilities, such as hospitals, are allowed in M1 districts only by special permit. Though residential uses are generally not permitted in M1 districts, they may be permitted in M1-1D districts by authorization of the City Planning Commission (CPC) pursuant to ZR 42-47. M1-1D districts have a maximum industrial/commercial FAR of 1.0 and a maximum community facility FAR of 2.4; permitted residential uses pursuant to ZR 42-47 would have a maximum residential FAR of 1.65. Building heights for commercial or industrial developments in M1-1D districts are governed by the sky-exposure plane; the maximum building height for residential developments is 32 feet.

The existing building on Projected Development Site 1 has a built FAR of 0.32, and is therefore underbuilt for the allowable industrial/commercial FAR of up to 1.0. The existing building on Projected Development Site 2 has a built FAR of 0.86, and is therefore not underbuilt under the existing zoning according to CEQR "soft site" criteria (refer to Section VI of Attachment A, "Project Description").

THIRD AVENUE-PROSPECT AVENUE-FIFTH AVENUE-38TH STREET REZONING (1990)

The 1990 Third Avenue-Prospect Avenue-Fifth Avenue-38th Street Rezoning (ULURP No. C 900258 ZMK) rezoned portions of the M1-1 and M1-2 districts in Sunset Park/Greenwood Heights to M1-1D and M1-2D districts, respectively. Though the area was zoned for manufacturing in 1961, the intent of the 1990 rezoning was to help maintain the viability of long-standing residential uses that predated the 1961 designation, while protecting and preserving the City's manufacturing and commercial uses. The rezoning relaxed restrictions on existing residential uses and created opportunities for new housing, under controlled conditions, on sites that were deemed least appropriate for industrial uses.

Figure C-3
Study Area Zoning



Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2
- M1-1D Zoning District
- C2-4 Commercial Overlay
- Special Enhanced Commercial District 1

Secondary Study Area

As shown in Figure C-3, the surrounding area is predominately zoned M1-2D west of Fourth Avenue; to the east of Fourth Avenue, the study area is predominately zoned M1-1D south of 24th Street and R6B north of 24th Street. Also located north of 24th Street is an R8A district with C2-4 commercial overlays, which are mapped on the east side of Fourth Avenue at a depth of 100 feet. The R8A/C2-4 district is also regulated by the Special Enhanced Commercial District 1 (EC-1). A summary of the general uses and maximum FARs of the secondary study area zoning districts is provided in Table C-2, below.

TABLE C-2
Secondary Study Area Zoning Districts

Name	Definition/General Use	Maximum FAR
Manufacturing Districts		
M1-1D	M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, which must meet the stringent M1 performance standards. Residential uses may be permitted by CPC authorization pursuant to ZR 42-47.	R: 1.65[1]; C: 1.0; CF: 2.4[2]; M: 1.0
M1-2D	M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, which must meet the stringent M1 performance standards. Residential uses may be permitted by CPC authorization pursuant to ZR 42-47.	R: 1.65[1]; C: 2.0; CF: 4.8[2]; M: 2.0
Residential Districts		
R6B	R6B districts are contextual residential districts and are often traditional rowhouse districts. The base height must be between 30 and 40 feet, and a maximum building height after setback is 50 feet.	R: 2.0; C: 0.0; CF: 2.0; M: 0.0
R8A	In R8A contextual residential districts, the mandatory Quality Housing regulations typically produce high lot coverage, 12- to 14-story residential buildings.	R: 6.02; C: 0.0; CF: 6.5; M: 0.0
Commercial Districts		
C2-4 (overlays)	C2 commercial overlays are mapped within residential districts along streets that serve local retail needs. In mixed-use buildings, commercial uses are limited to one or two floors and must always be located below the residential uses. C2 commercial overlay districts permit a slightly wider range of uses than C1 districts.	R & CF: same as underlying R district; C: 1.0 within R1-R5 districts & 2.0 within R6-R10 districts; M: 0.0
Special Districts		
EC-1	The Special EC-1 District along Fourth Avenue applies ground floor use regulations, retail transparency requirements, and limitations on parking and curb cuts so as to enhance the pedestrian environment and create active streetscapes.	R, C, CF, and M: same as underlying districts

Source: Zoning Resolution of the City of New York.
Notes: R=Residential; C=Commercial; CF=Community Facility; M=Manufacturing
[1] Residential uses permitted only by CPC authorization pursuant to ZR 42-47.
[2] Up to 20 percent increase for public plaza bonus.

Similar to M1-1D districts described above, M1-2D districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities (Use Groups 4 to 14, 16, and 17). Though residential uses are generally not permitted in M1 districts, they may be permitted in M1-2D districts by authorization of the City Planning Commission (CPC) pursuant to ZR 42-47. M1-2D districts have a maximum industrial/commercial FAR of 2.0 and a maximum community facility FAR of 4.8; permitted residential uses pursuant to ZR 42-47 would have a maximum residential FAR of 1.65. Building heights for commercial or industrial developments in M1-1D districts are governed by the sky-exposure plane; the maximum building height for residential developments is 32 feet.

R6B are contextual lower-density residential zoning districts (Use Groups 1-4) that are often traditional rowhouse districts with a maximum 2.0 FAR. The base height of an R6B development must be between 30 and 40 feet, and the maximum building height after setback (i.e., 10 feet fronting a wide street; 15 feet fronting a narrow street) is 50 feet. For buildings providing a qualifying ground floor, the maximum base height and overall height may be increased by five feet. Curb cuts are prohibited on zoning lot frontages less than 40 feet. The street wall of a new development, on any lot up to 50 feet wide, must by as deep

as one adjacent street wall but no deeper than the other. The minimum required lot width is 18 feet, and a minimum lot area of 1,700 sf. Off-street parking is generally required for 50 percent of a building's dwelling units.

R8A are contextual higher-density residential districts (Use Groups 1-4) that typically result in high lot coverage residential buildings of roughly 12 to 14 stories, set at or near the street line, with a maximum 6.02 FAR. Above a base height of 60 to 95 feet, a development must set back to a depth of 10 feet on a wide street and 15 feet on a narrow street before rising to a maximum building height of 125 feet.[4] Quality Housing bulk regulations are mandatory in R8A districts. Off-street parking is generally required for 40 percent of a building's dwelling units.

Commercial overlays are often mapped along streets that serve local retail needs, including neighborhood grocery stores, restaurants, and beauty parlors. C2 districts permit a slightly wider range of uses, such as funeral homes and repair services. In mixed buildings, commercial uses are limited to one or two floors and must always be located below the residential use. When C2-4 overlays are mapped in R6 through R10 districts, the maximum commercial FAR is 2.0. C2-4 commercial overlays are generally mapped at a depth of 100 feet.

SOUTH PARK SLOPE REZONING AND TEXT AMENDMENT (2005)

The South Park Slope Rezoning (ULURP No. 060054 ZMK) rezoned all or portions of fifty blocks in the Brooklyn neighborhoods of Park Slope South, Greenwood Heights, and Windsor Terrace, known collectively as "South Park Slope," from R5 and R6 districts to R5B, R6B, R6A, C4-3A, and R8A contextual districts. In addition to these zoning map amendments, a zoning text amendment (ULURP No. N060053 ZRK) designated the Inclusionary Housing program to be used in the rezoned R8A districts on Fourth Avenue in Brooklyn CD 7. The intent of the zoning map and text amendments was to protect the relatively low-rise neighborhood character from out of scale development, reinforce several of the avenues as corridors for mixed retail/residential developments, and provide opportunities for residential development and incentives for affordable housing on Fourth Avenue within the rezoning area.

The zoning changes were a response to requests in August 2004 by two local civic groups, South South Slope and the Concerned Citizens of 23rd Street, and a September 2004 resolution from Community Board 7 to study the area for contextual zoning designations, over fears that several out-of-scale tower developments throughout the neighborhood would erode the low-rise, rowhouse neighborhood character. Specifically, in regards to the secondary study area, the area north of 24th Street was rezoned from R6 to R6B, with an R8A/C2-4 district mapped along the east side of Fourth Avenue at a depth of 100 feet.

SPECIAL FOURTH AVENUE ENHANCED COMMERCIAL DISTRICT REZONING (2011)

On November 29, 2011, the New York City Council approved zoning map (ULURP No. C 110386 ZMK) and zoning text amendments (ULURP No. N 110387 ZRK) to establish the Special Fourth Avenue Enhanced Commercial (EC-1) District on 56 blocks along Fourth Avenue between Atlantic Avenue and 24th Street in the Park Slope and South Park Slope neighborhoods of Brooklyn Community Districts 2, 6, and 7. The

[4] R8A contextual districts generally permit base heights of 60 to 85 feet and a maximum permitted building height of 120 feet. However, for sites outside the Manhattan core, R8A districts permit base heights of 60 to 95 feet and a maximum permitted building height of 125 feet for developments with a Qualifying Ground Floor; for MIH sites, R8A districts permit base heights of 60 to 105 feet and a maximum building height of 145 feet.

intention of the Special EC-1 District is to ensure a lively pedestrian context by imposing transparency requirements, limiting curb cuts and establishing special use provisions to require ground-floor neighborhood services and amenities and limiting parking and residential uses on the ground floor facing Fourth Avenue to better serve the growing residential population.

Specifically, the Special EC-1 District comprises of three major components for new developments or enlargements, and are as follows:

- Enlivening uses – Special Use Provisions require the entire ground floor be developed or enlarged with permitted non-residential uses, except where residential lobbies and off-street parking facilities are permitted. Of the ground floor frontage of the zoning lot, at least 50 percent must be occupied by streetscape enlivening commercial uses to a minimum depth of 30 feet.

- Sidewalk continuity – To ensure pedestrian safety, curb cuts serving new buildings are generally limited to the side streets.

- Streetscape design – To ensure an interactive and social space along Fourth Avenue, new retail and commercial establishments are required to adhere to a minimum level of streetwall transparency.

The Special EC-1 District is located directly north of but does not include the Project Area.

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

Land Use and Zoning

Primary Study Area (Project Area)

As presented in Attachment A, "Project Description," in the 2024 future without the Proposed Actions, it is anticipated that no changes would occur in the primary study area, and the existing uses would remain.

In addition, the Project Area's existing M1-1D zoning district would remain.

Secondary Study Area

While there are no known or anticipated zoning changes or developments within the 400-foot radius secondary study area, for the purposes of other technical analyses that assess conditions in larger study area, developments anticipated within an approximate ½-mile of the Project Area are summarized in Table C-3 and shown graphically in Figure C-4. As presented in Table C-3, in the future without the Proposed Actions, it is anticipated that 506 DUs, approximately 231,322 gsf of commercial floor area (much of which would include ground floor retail and hotel uses), 445 keyed hotel rooms, 24,009 gsf of community facility floor area, and 106 off-street accessory parking spaces would be developed within a ½-mile of the Project Area at 37 sites.

TABLE C-3
No-Action Developments within a ½-Mile of the Project Area

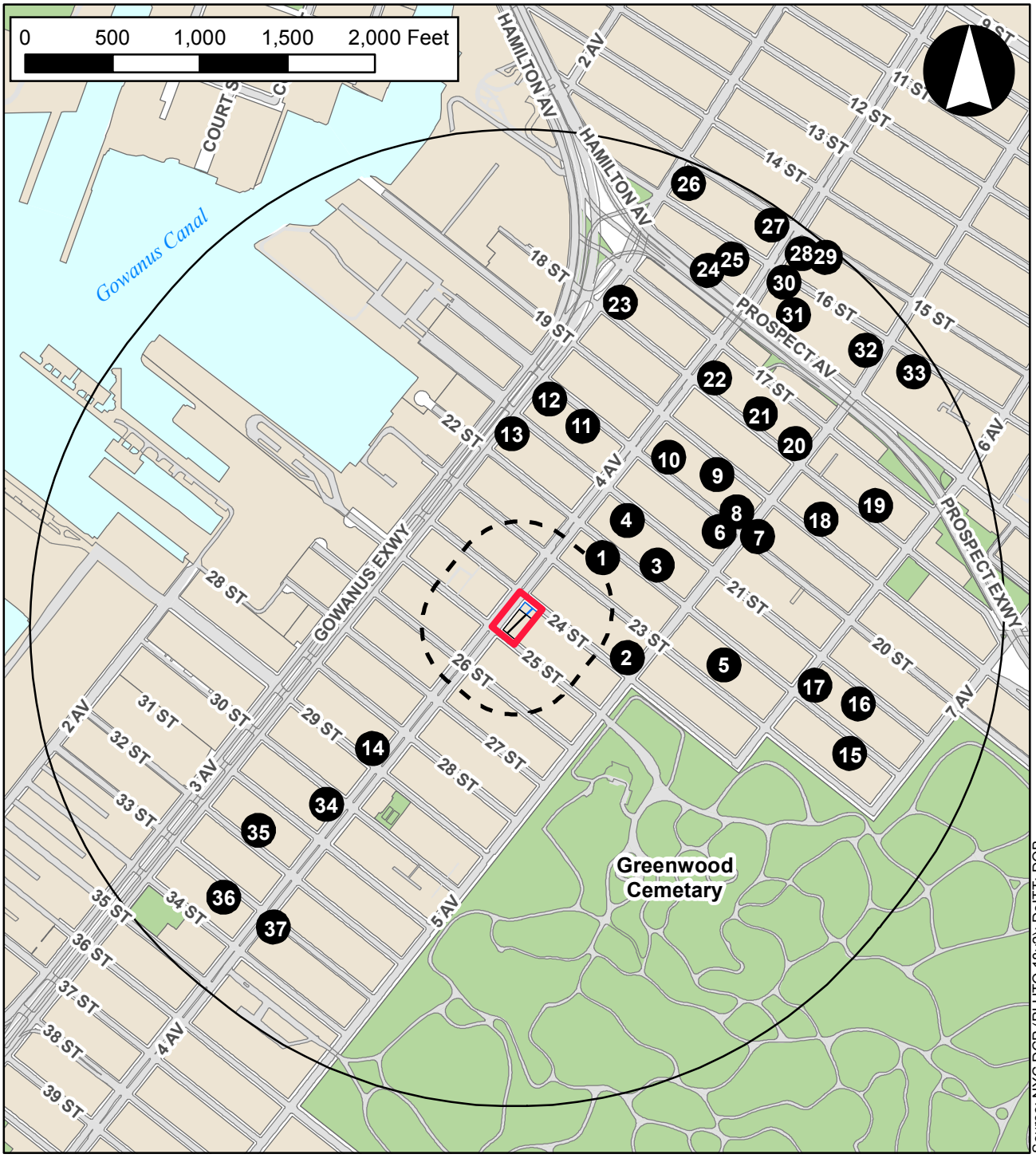
Map No.[1]	Block	Lot(s)	Address	Residential (GSF)	No. DUs	Commercial (GSF)	No. Hotel Rooms	Community Facility (GSF)	Parking Spaces	# of Floors	Build Year
1	646	18	194 22nd St.	6,145	7					4	2018
2	649	38	734 5th Ave	19,791	19				5	6	2019
3	643	54	217 22nd St.	5,250	2					3	2019
4	643	11	186 21st St.	35,017	26					5	2018
5	899	26	274 22nd St.	2,197	4					4	2019
6	640	34	230 20th St.	10,850	10					5	2018
7	885	1	669 5th Ave	3,260	6					5	2019
8	637	52	231 20th St.	5,999	6					5	2018
9	637	26	208 19th St.	4,973	3					3	2019
10	637	76	187 20th St.	9,704	8					4	2019
11	639	25	150 20th St.			31,623	84			6	2018
12	639	16	132 20th St.			4,101	14		1	4	2018
13	642	13	131 22nd St.			21,306	58			4	2019
14	664	37	826 4th Ave			23,737	62	24,009		8	2019
15	900	27	334 22nd St.	13,879	8					4	2019
16	898	23	328 21st St.	5,692	5					4	2019
17	898	3	719 6th Ave	20,646	12					5	2019
18	879	74	261A 19th St.	3,110	2					3	2019
19	873	60	279 18th St.	3,280	1					3	2019
20	631	49	626 5th Ave	20,602	20	1,948			14	6	2019
21	631	64	211 18th St.	3,272	2					3	2019
22	631	1	609 4th Ave	84,647	73	4,065			8	11	2019
23	630	61	127 18th St.			31,734				3	2019
24	1051	48	165 Prospect Ave	2,134	2					3	2019
25	1051	28	96 16th St.	6,717	4					4	2018
26	1046	7	577 3rd Ave	23,874	19	952				7	2019
27	1046	37	554 4th Ave	42,137	40	5,282				11	2019
28	1047	3	541 4th Ave	101,116	134	12,255			26	11	2019
29	1047	13	158 15th St.	3,851	6					4	2018
30	1052	11	561 4th Ave	9,692	8	652				5	2018
31	1052	5	581 4th Ave	89,442	70	4,620			40	11	2019
32	1052	46	578 5th Ave	8,635	8	2,192				5	2019
33	1053	24	194 16th St.	2,029	1					3	2019
34	672	35	162 30th St.			20,020	81		12	4	2019
35	676	53	135 32nd St.			28,716	74			6	2019
36	684	25	142 33rd St.			36,179	72			7	2019
37	685	8	883 4th Ave			1,940				4	2019
			Totals:	***547,941***	***506***	***231,322***	***445***	***24,009***	***106***		

Source: New York City Department of Buildings 'Building Information Systems (BIS)' filing records.
Notes: [1] Refer to Figure C-4.

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

In the 2024 future with the Proposed Actions, the Proposed Actions, which include zoning map and text amendments, would be approved. As presented in Attachment A, "Project Description," under the RWCDS, the Proposed Actions would facilitate the incremental development of 189 DUs (including a net increase of up to approximately 47 affordable DUs), approximately 2,925 gsf of commercial local retail uses, and 34 accessory parking spaces.

Figure C-4
No-Build Sites



Source: NYC DCP (PLUTO 18v2); DoITT; DOB

Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- 400-ft Radius
- 1/2-Mile Radius
- 1 No-Build Sites (Refer to Table C-2)

Land Use

Primary Study Area (Project Area)

The Proposed Actions would result in changes to land use within the primary study area by introducing residential uses at a greater density along a wide street corridor than would be allowed in the No-Action condition. These proposed residential and local retail uses at the projected development sites would be consistent with uses already present in the surrounding area. Notably, in the immediate vicinity of the rezoning area, Fourth Avenue (a wide street) is the surrounding area's main commercial corridor lined with many retail, mixed-use residential and commercial, and other commercial uses. Further, generally to the north of 24th Street and south of 26th Street, the surrounding area is characterized by a combination of one- and two-family residential buildings that occupy small, narrow lots, and larger multi-unit residential buildings that occupy larger lots.

In addition, certain industrial uses (i.e., Use Groups 10 through 13, 16, and 17) would no longer be permitted as-of-right in the Project Area under With-Action conditions (see Table C-3). These uses include manufacturing, semi-industrial, automotive uses, as well as large retail uses (such as department stores), amusement establishments, and large entertainment facilities, which would generally be permitted in M1-1D districts under No-Action conditions. As a result of the rezoning, one existing auto repair use located in the Project Area on Lot 7 would become a nonconforming use under the proposed R8A/C2-4 zoning. However, as discussed further below, Lot 7 is considered a projected development site and is expected to be redeveloped with conforming residential and commercial uses by the 2024 analysis year. Therefore, the duration of nonconforming uses on Lot 7 would be brief. Additionally, the displacement of this industrial use would not adversely affect the surrounding land uses, as a majority of the block (Block 652) would continue to be comprised of industrial uses in the future With-Action condition (refer to Figure C-2).

Under the RWCDS, Projected Development Site 1 would be improved with a 14-story, 127,825 gsf mixed-use development with a residential FAR of 6.63 and commercial FAR of 0.57 (for a total FAR of 7.2 which would be the maximum FAR permitted), as well as 45 accessory parking spaces that would be provided below-grade. Proposed uses include 142 DUs, including up to approximately 35 permanently affordable DUs, and approximately 8,896 gsf of local retail space on the ground floor. Forty-five accessory parking spaces, required for the market-rate residential units, would be provided on a single cellar level. Parking requirements would be waived for affordable DUs pursuant to ZR Section 25-251. Accessory parking requirements for the proposed commercial uses would be waived pursuant to ZR Section 36-232. Access to the below-grade parking garage would be provided from 25th Street.

In addition, under the RWCDS, Projected Development Site 2 would be improved with a 12-story, 41,525 gsf mixed-use development with a residential FAR of 6.6 and commercial FAR of 0.6 (for a total FAR of 7.2 which would be the maximum FAR permitted). The mixed-use development would include approximately 47 DUs, including up to approximately 12 permanently affordable DUs, and approximately 3,120 gsf of local retail space on the ground floor. Off-street parking requirements would be waived for the market-rate and affordable residential uses pursuant to ZR Section 25-242 and 25-251, respectively. Accessory parking requirements for the commercial uses would be waived pursuant to ZR Section 36-232. No other additional changes to existing land uses in the primary study area are expected as a result of the Proposed Actions.

The Proposed Actions would not generate land uses that would be incompatible with surrounding uses, nor would they directly 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 zoning in the secondary study area. As noted above, the secondary study area is predominantly comprised of residential and industrial uses, as well as commercial uses generally concentrated along Fourth Avenue, and a few public facilities/institutions. Therefore, the Proposed Actions would not introduce any new land uses that would be incompatible with their surroundings, 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 (Project Area)

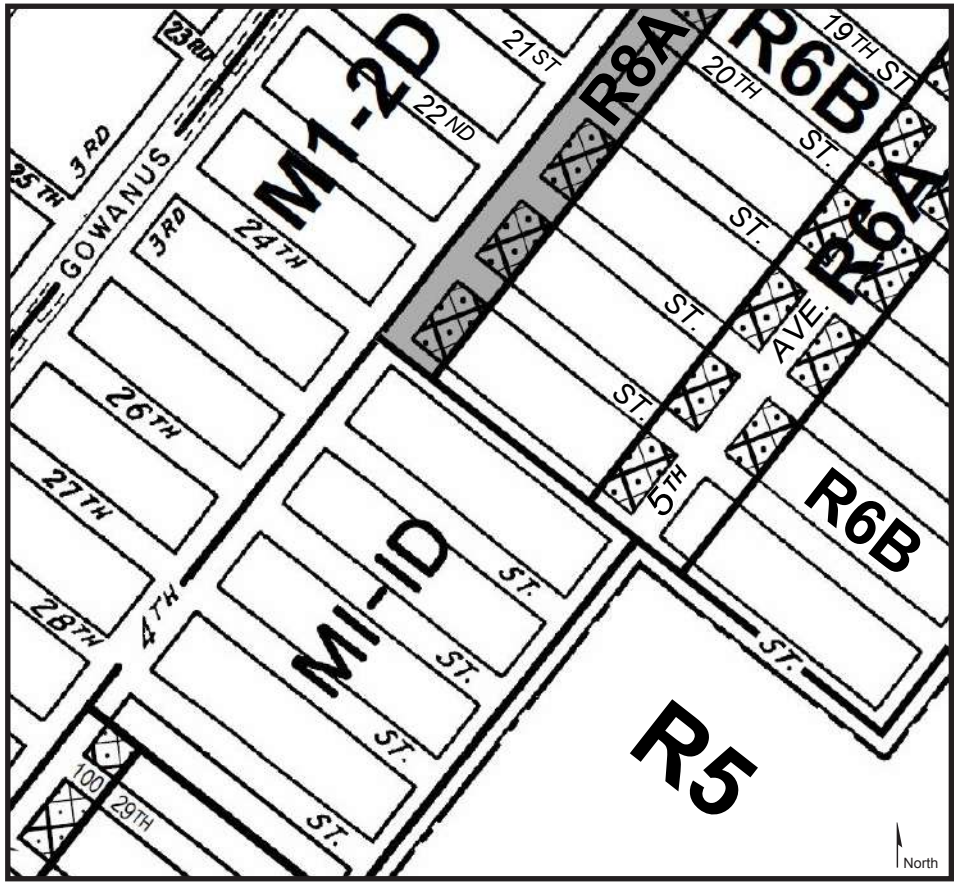
In the future with the Proposed Actions, the existing zoning in the primary study area would change. The primary study area would be rezoned from M1-1D to R8A/C2-4 (EC-1) (with MIH) (see Figure C-5). As shown in Table C-3, the proposed R8A (MIH) zoning would increase the allowable maximum floor area to 7.2 FAR with MIH for residential uses and up to 6.5 for community facility uses, which would facilitate new housing development including affordable housing units. The proposed C2-4 commercial overlay would be mapped to a depth of 100 feet along the eastern side of Fourth Avenue between 24th and 25th streets, and would allow commercial uses up to a 2.0 FAR. The proposed EC-1 map and text amendments would impose additional transparency requirements, limit curb cuts and establish special use provisions to require ground-floor neighborhood services and amenities and limit parking and residential uses on the ground floor facing Fourth Avenue.

TABLE C-3
Comparison of Existing and Proposed Zoning in the Primary Study Area

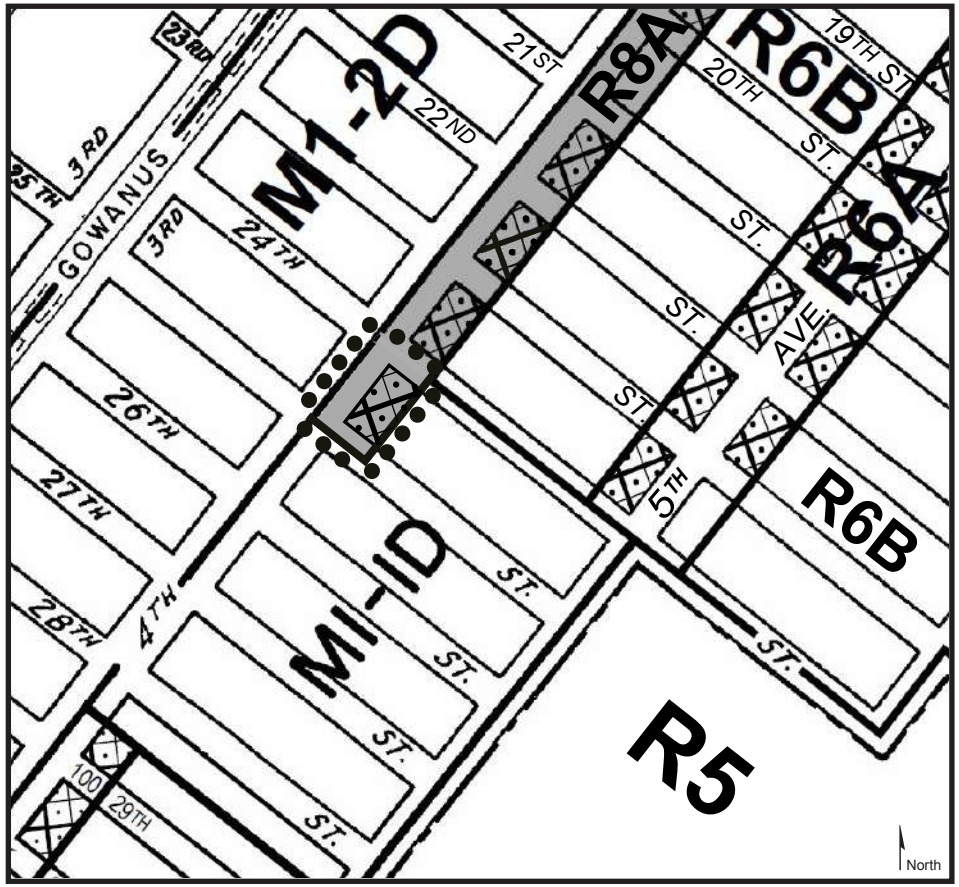
	Existing/No-Action	Proposed
	M1-1D	**R8A/C2-4 (EC-1)**
Use Groups	4-14, 16, 17[1]	1-9, 14
Maximum FAR		
Residential	0.0[1]	7.2[2]
Community Facility	2.4	6.5
Commercial	1.0	2.0 within the C2-4 overlay
Manufacturing	1.0	0.0

Source: *Zoning Resolution of the City of New York.*
Notes:
[1] Use Groups 1 and 2 may be permitted in M1-1D districts by CPC authorization pursuant to ZR 42-47, which would allow a maximum residential FAR of 1.65, with a maximum residential building height of 32 feet.
[2] The MIH area sets a new maximum permitted residential FAR that supersedes the FAR permitted by the underlying R8A zoning district. With both the designation of the Project Area as an MIH area and its rezoning to R8A zoning districts, the maximum permitted residential FAR within the proposed rezoning area would be 7.2, and the maximum building height would be 145 feet with qualifying ground floor).

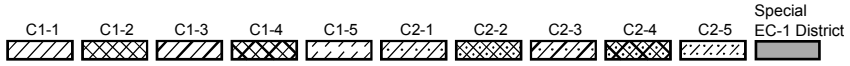
The proposed zoning map and text amendments would create additional zoning capacity in a transit-accessible area to support new housing creation and increase the number of affordable housing units available in New York City. While the proposed R8A/C2-4 (EC-1) (MIH) district would permit development at a density greater than permitted under existing or No-Action conditions, the Project Area's location



Existing Zoning Map (16d)



Proposed Zoning Map (16d)
Area to be rezoned is outlined with dotted lines



along a wide street, Fourth Avenue, in a transit accessible area is well-suited for additional development. In addition, the proposed extension of the Special EC-1 District would continue to encourage the trend of mixed-use development with ground floor commercial uses along Fourth Avenue, while ensuring a lively pedestrian context by imposing transparency requirements, limiting curb cuts and establishing special use provisions to require ground-floor neighborhood services and amenities and limiting parking and residential uses on the ground floor facing Fourth Avenue.

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 to encourage higher density development on wide streets served by public transit. The proposed R8A/C2-4 (EC-1) (MIH) district would also facilitate the development of affordable housing.

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.*

Attachment D

Open Space

737 Fourth Avenue Rezoning EAS
Attachment D: Open Space

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 the guidance of the *City Environmental Quality Review* (CEQR) *Technical Manual,* as the Project Area is located in an area considered neither underserved nor well-served by open space, a project that would add more than 200 residents or 500 employees, or a similar number of other users, is considered to have indirect effects on open space.

As discussed in Attachment A, "Project Description," approval of the Proposed Actions would result in the development of a 14-story (145-feet) mixed-use building with approximately 127,825 gsf of floor area (7.2 FAR) on the Applicant-owned lot (Projected Development Site 1). The ground floor would contain 8,896 gsf of retail use with 115,411 gsf (142 DUs) of residential uses on the upper floors. Up to 35 of these DUs would be designated as affordable under the MIH program. On Projected Development Site 2, 731 Fourth Avenue, the RWCDS assumes the existing two-story building would be demolished and replaced by a 41,525 gsf mixed-use residential building with ground floor retail. The development would contain 38,405 gsf (47 DUs) of residential space and 3,120 gsf of local retail. As the Proposed Actions would generate an increment of approximately 562 additional residents and 45 workers at the Project Area, an assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area's residential 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 that is considered neither well-served or underserved by open space as defined in the *CEQR Technical Manual Appendix: Open Space Maps*.

In New York City, local open space ratios vary widely, and the median ratio at the Citywide Community District level is 1.5 acres of open space per 1,000 residents. Typically, for the assessment of indirect effects, citywide local norms have been calculated for comparison and analysis. As a planning goal, a ratio of 2.5 acres per 1,000 residents represents an area well-served by open spaces, and is consequently used as an

optimal benchmark for residential populations in large-scale plans and proposals. Ideally, this would comprise 0.50 acres of passive open space and 2.0 acres of active open space per 1,000 residents.

According to the *CEQR Technical Manual*, a preliminary open space assessment may be useful when the open space assessment can be targeted to a particular user group, or if it is not clear whether a full, detailed open space analysis is necessary. If the preliminary open space assessment concludes that the open space ratio would increase or remain substantially the same in the With-Action condition compared to the existing condition, no further analysis of open space is needed (unless direct, qualitative changes to an existing open space resource may occur because of the proposed project). Decreases in the open space ratio would generally warrant a more detailed analysis under the following conditions:

- If the decrease in the open space ratio approaches or exceeds five percent, it is generally considered to be a substantial change warranting more detailed analysis.
    - The closer the ratio is to 2.5 acres per 1,000 residents, or when the existing open space ratio in the study area exceeds this benchmark, a greater percentage of change (more than five percent) may be tolerated.
- If the study area exhibits a low open space ratio (e.g., below the citywide average of 1.5 acres per 1,000 residents), indicating a shortfall.

As discussed in detail below, the open space assessment shows that the development of 737 and 731 Fourth Avenue as a result of the Proposed Actions would result in the decrease in the open space ratio by 3.55 percent in the residential study area, which would be below the CEQR impact threshold of five percent. 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, 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 the guidance provided in the *CEQR Technical Manual*. 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 in the future, 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 the guidance provided in the *CEQR Technical Manual,* 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 the Project Area is located in an area neither underserved nor well-served by open space and would generate more than 200 residents but less than 500 workers, a half-mile radius is the appropriate study area boundary.

Open Space Study Area

Pursuant to *CEQR Technical Manual* guidance, the residential open space study area includes all census tracts that have at least 50 percent of their area located within a half mile of the Project Area and all open space resources within it that are publicly accessible.

As shown in Figure D-1, the ½-mile open space study area includes the following census tracts in their entirety: census tracts 101, 143, 145, and 147. The open space study area extends to Johnson Avenue and Prospect Avenue to the north; 7th Avenue and 5th Avenue to the east; to 33rd Street to the south; and 3rd Avenue to the west.

Analysis Framework

Direct Effects Analysis

According to the *CEQR Technical Manual*, a project 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 there are no publicly accessible open spaces within the projected development sites, the Proposed Actions would not have any direct effects and no further analysis is warranted. Additionally, the Proposed Actions would not result in the imposition of noise, air pollutant emissions, odors, or significant new shadows on public open spaces that may alter usability.

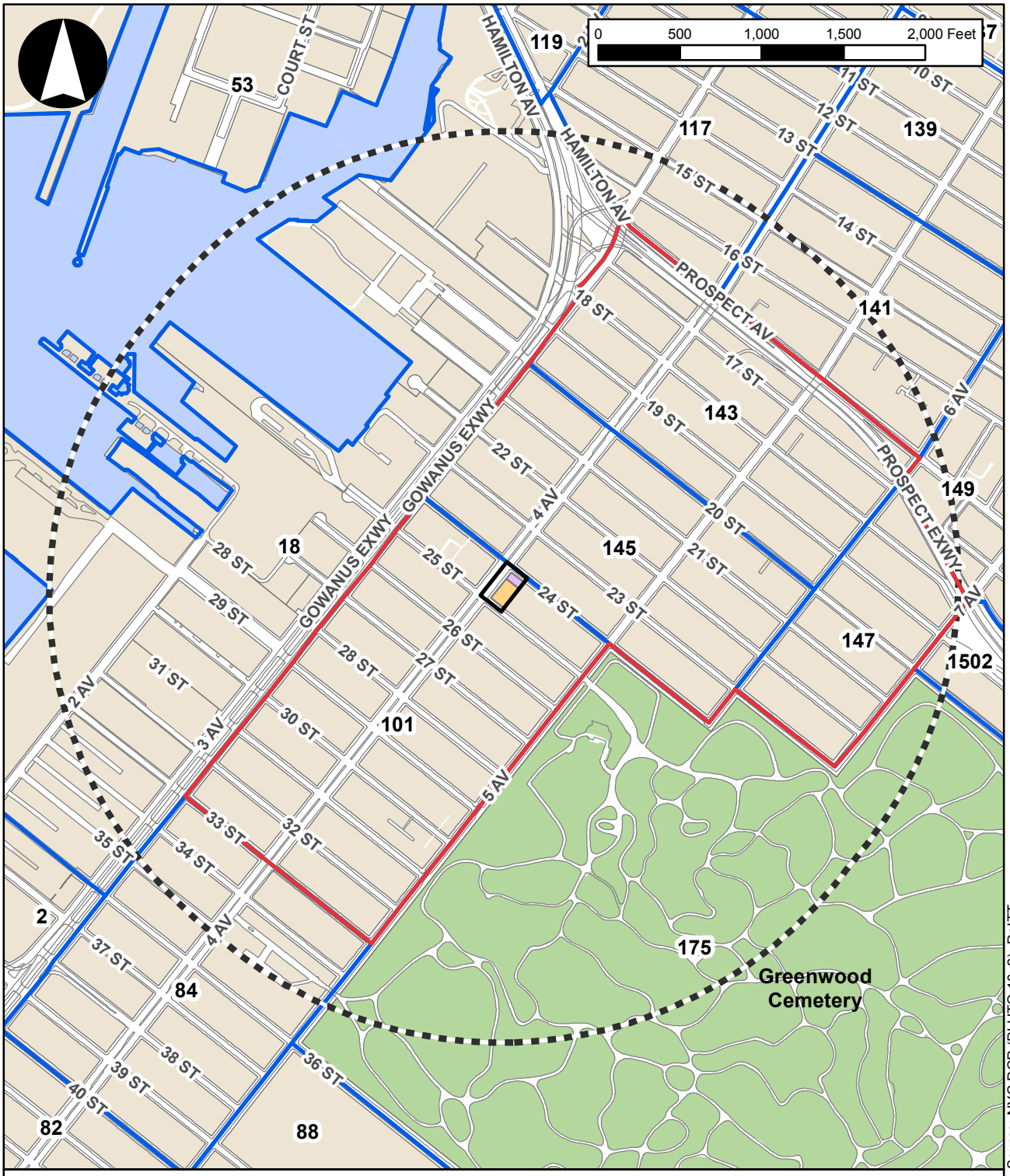
Indirect Effects Analysis

Indirect effects occur to an area's open spaces when a proposed action would add enough population, either workers or residents, to noticeably diminish the ability of an area's open space to serve the existing or future population. The *CEQR Technical Manual* methodology 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 noted above, the projected development sites are located in an area that is neither well-served or underserved by open space as defined in the *CEQR Technical Manual*.

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, including proximity to additional open space 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 chapter includes:

- Characteristics of the existing and future (2024) residential users. To determine the number of residents in the study area, 2016 data from the U.S. Census Bureau has been compiled for census tracts comprising the open space study area. The 2024 No-Action residential population was calculated in consideration of anticipated background growth and planned and anticipated study

Figure D-1
Open Space Study Area



Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- Open Space Residential Study Area
- 1/2-mile Radius
- 101 Census Tracts

Source: NYC DCP (PLUTO 18v2); DoITT

area residential developments. The residential population introduced on each of the projected development sites was estimated based on the average household size of Brooklyn Community District (CD) 7 (2.97 persons per household) per the 2010 census

- An inventory of all publicly accessible passive and active 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.
    - As a planning goal, a ratio of 2.5 acres per 1,000 residents represents an area well-served by open spaces and is consequently used by the City as an optimal benchmark for residential populations in large-scale plans and proposals. Ideally, this would be 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).
    - Local open space ratios vary widely, and the median ratio at the citywide community district level is 1.5 acres of open space 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.

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 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 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, the effects of new open space provided by the proposed project, a comparison of projected open space ratios with City guidance, and open spaces created by the proposed project 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. EXISTING CONDITIONS

Demographic Characteristics of the Study Area

To determine the residential population served by existing open space resources, 2012-2016 5-Year American Community Survey (ACS) Estimates Census data were compiled for the census tracts comprising the 1/2-mile study area. As mentioned above and shown in Figure D-1, the open space study area is comprised of four census tracts. As shown in Table D-1 below, Census data indicates the study area has a total residential population of 14,628 people.

Table D-1
Existing Open Space Study Area Residential Population

Census Tract	Residential Population
101	4,297
143	3,561
145	4,507
147	2,264
Total	**14,628**

Source: U.S. Census Bureau, ACS 2012-2016 Five-Year Estimates

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 also use traditional playgrounds as well as grassy and hard-surfaced open spaces, which are used for activities such as ball playing, running, and skipping rope. Children ages ten through 14 use playground equipment, court spaces, 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.

Therefore, the residential population of the study area was also broken down by age group. As shown in Table D-2, people between the ages of 20 and 64 make up the majority (approximately 70.5 percent) of the residential population. Children and teenagers (0 to 19 years old) account for approximately 20.1percent of the entire residential population, and persons 65 years and over account for approximately 9.4 percent of the residential study area population.

The median age for the population within the individual census tracts of the residential study area ranges from a low of 31.2 years (Census Tracts 145) to a high of 34.8 years (Census Tract 143). This data suggests a need for facilities geared towards the recreational needs of adults, as well as children and teenagers, as the study area exhibits a high percentage of residents in both the 20 to 64 (70.5 percent) and 0 to 19 (20.1 percent) age brackets.

Table D-2
Existing Open Space Study Area Residential Population Characteristics

Census Tract	Residential Population													Median Age
	Total Population	Age Distribution												
		Under 5		5 - 9		10 - 14		15-19		20 - 64		65+		
		#	%	#	%	#	%	#	%	#	%	#	%	
101	4,297	348	8.1%	301	7.0%	228	5.3%	223	5.2%	2,896	67.4%	301	7.0%	31.8
143	3,561	182	5.1%	182	5.1%	89	2.5%	299	8.4%	2,414	67.8%	392	11.0%	34.8
145	4,507	198	4.4%	203	4.5%	153	3.4%	122	2.7%	3,367	74.7%	464	10.3%	31.2
147	2,263	154	6.8%	109	4.8%	66	2.9%	81	3.6%	1,641	72.5%	213	9.4%	33.6
Total	**14,628**	**882**	**6.0%**	**794**	**5.4%**	**536**	**3.7%**	**726**	**5.0%**	**10,318**	**70.5%**	**1,369**	**9.4%**	

Source: *2012-2016 ACS 5-Year Estimates.*

Inventory of Open Space Resources in the Study Area

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*, public open space is defined as facilities open to the public at designated hours on a regular basis and is assessed for impacts under CEQR guidance, whereas private open space is not accessible to the general public on a regular basis, and is therefore only considered qualitatively. Public open spaces that do not contain seating are also excluded from the quantitative assessment, in accordance with *CEQR Technical Manual* methodology. Field surveys and secondary sources were used to determine the number, availability, and condition of publicly accessible open space resources in the study area.

An open space 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.

Within the defined study area, all publicly accessible open spaces were inventoried and identified by their location, size, owner, type, utilization, equipment, hours, and condition. The information used for this analysis was gathered through field inventories conducted February of 2018, the New York City Department of Park and Recreation's (NYC Parks) website, the New York City Open Accessible Space Information System (OASIS) database, and other secondary sources of information.

The condition of each open space facility was generally categorized as "Excellent," "Good," "Fair," or "Poor." A facility was considered in excellent condition if the area was clean and attractive and if all equipment was present and in good repair. A good facility had minor problems such as litter or older but operative equipment. A fair or poor facility 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. Determinations were made based on a visual assessment of the facilities.

Likewise, judgments as to the intensity of use of the facilities were qualitative, based on an observed degree of activity or utilization on a weekday afternoon, which is considered the weekday peak utilization period according to the *CEQR Technical Manual*. If a facility seemed to be at or near capacity (i.e. the majority of benches or equipment was in use), then utilization was considered heavy. 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. Field visits were conducted in February 2018, when the utilization of open space is generally lower than in warmer months. Table D-3, "Inventory of Existing Open Space and Recreational Facilities in Study Area," identifies the address, ownership, features, and acreage of active and passive open spaces in the study area, as well as their condition and utilization. Figure D-2 maps their location in the study area.

Open Space Resources

As shown in Table D-3, there are five publicly-accessible open space resources within the residential study area included in the quantitative analysis. The study area contains a total of approximately 2.89 acres of publicly accessible open space, approximately 70 percent of which (2.02 acres) comprises active open space and approximately 30 percent of which (0.87 acres) comprises passive open space (refer to Table D-3).

As shown in Figure D-2, open space resources are generally clustered in the northeast portion of the open space study area near the Prospect Expressway. The largest open space resource in the study area is the 0.71-acre Purple Playground, located on 17th Street between Fifth and Sixth Avenues at the northernmost point of the open space study area, the playground includes play equipment, walking paths, and seating. The playground is primarily occupied with active space. The second largest open space resource in the residential study area is the Slope Park Playground, a 0.69-acre park located on Sixth Avenue between 18th and 19th Streets. Amenities in this park include a playground and spray showers. The Prospect Expressway Parkway, located at the corner of 17th Street and Sixth Avenue, is a 0.60-acre park which includes equal amounts of active and passive space with a dog run and areas with seating. On the corner of Prospect Avenue and Sixth Avenue is the Prospect Avenue Parkway, a 0.43-acre park with only passive area. The parkway includes plantings and benches, with shrubs placed along the southern fence to obstruct the view and sound of the Prospect Expressway. Finally, in the southern portion of the open space study area is the P.S. 172 Playground on 29th Street and Fourth Avenue. The playground is fully occupied by active uses including a playground and asphalt play area.

Assessment of Open Space Adequacy

The following analysis of the adequacy of open space resources within the residential study area takes into consideration the ratios of active, passive, and total open space resources per 1,000 residents.

QUANTITATIVE ASSESSMENT

With a total of 2.89 acres of open space, of which approximately 0.87 acres are for passive use and approximately 2.02 acres are for active use, and a total residential population of 14,628, the residential study area has an overall open space ratio of 0.198 acres per 1,000 residents (see Table D-4). This is less than the City's planning goal of 2.5 acres of combined active and passive open space per 1,000 residents. The study area's residential passive and active open space ratios are 0.059 acres and 0.138acres per 1,000 residents, respectively. Both the passive open space ratio and the active open space ratio are below the applicable City open space guidelines. As shown in Table D-4, the passive open space ratio of 0.059 is below the applicable City open space goal for passive open space (0.50 acres of passive open space per 1,000 people). Additionally, the active open space ratio of 0.138 acres per 1,000 people is below the *CEQR Technical Manual* goal of 2.0 acres of active open space per 1,000 residents. As such, there is an existing shortfall of passive and active open space in the open space study area.

Table D-3
Inventory of Existing Open Space and Recreational Resources in Study Area

Map No.	Name	Location	Owner/Agency	Amenities	User Groups	Hours of Access	Total Acres	Active		Passive		Condition & Utilization
								%	Acres	%	Acres	
Open Space Resources Included in Quantitative Analysis												
1	P.S. 172 Schoolyard to Playground	29th Street and 4th Avenue	DCAS/DOE	Playground, Asphalt play area	Children, Teenagers	8 AM to Dusk when School is not in session. After school to Dusk when School is in session	0.46	100	0.46	0	0	Good, Moderate
2	Purple Playground	17th Street between 5th and 6th Avenues	NYC Parks	Playground, Seating	Children	6AM – 9PM	0.71	90	0.64	10	0.07	Good, Moderate
3	Prospect Avenue Parkway	Prospect Avenue and 6th Avenue	NYC Parks	Seating, Gardens	Adults, Senior Citizens	Dawn - Dusk	0.43	0	0	100	0.43	Good, Low
4	Prospect Expressway Parkway	17th Street and 6th Avenue	NYC Parks	Dog Run, Garden, Seating	Adults	6AM – 9PM	0.60	50	0.30	50	0.30	Good, Low
5	Slope Park Playground	6th Avenue between 18th and 19th Streets	NYC Parks	Playgrounds, Spray Showers	Children, Adults	6AM – 9PM	0.69	90	0.62	10	0.07	Excellent, High
						Total:	**2.89**	**70%**	**2.02**	**30%**	**0.87**	

Sources: NYC OASIS, NYC Parks, October 2018 field visits.
Notes: [1]Refer to Figure D-2

Figure D-2
Open Space Resources

Source: NYC DCP (PLUTO 18v2); NYC Parks; DoITT

Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- Open Space Residential Study Area
- 1 — Open Space Resources Included in Quantitative Analysis
- A — Open Space Resources Included in Qualitative Analysis

Table D-4
Adequacy of Open Space Resources: 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
Residents	14,628	2.89	0.87	2.02	0.198	0.059	0.138	2.50	0.50	2.00

QUALITATIVE ASSESSMENT

Although the residential study area contains a mixture of recreational facilities, with approximately 70percent dedicated to active uses and 30 percent dedicated to passive use, the open space ratios per 1,000 residents still fall well below the guideline goal of 2.5 acres per 1,000 residents and the citywide median of 1.5 acres per 1,000 residents.

The deficiency of open space resources within the residential study area is partially ameliorated by several factors. First, as shown in Table D-3, all existing open space resources in the residential study area are considered to be in good to excellent condition. Typical utilization rates of these resources are low to moderate with the exception being the Slope Park Playground. There are also three additional open spaces not included in the quantitative analysis that offer active and passive open space for residents of the open space study area, two of which are located within a half-mile radius of the Project Area but are not within the residential study area. The first of which is D'Emic Playground) located on Third Avenue between 34th and 35th Streets (refer to Figure D-2: Map No. A. The 1.13-acre park features a playground, spray showers, handball, and basketball courts. Detective Joseph Mayrose Playground is located on 17th Street between Sixth and Seventh Avenues and is within a half-mile of the Project Area (refer to Figure D-2: Map No. B. The 1.31-acre park features walking paths, benches, and a small dog park. Approximately 600-feet east of the Project Area is the 478-acre Greenwood Cemetery (refer to Figure D-2: Map No. C). The cemetery is passive open space with several benches. Finally, just outside of the half-mile radius of the Project Area is the Butterfly Gardens located at 18th Street and 7th Avenue (refer to Figure D-2: Map No. D. Butterfly Gardens is a 0.44-acre park that offers benches and walking paths. Together these three open space resources, approximately a half-mile from the Project Area, offer an additional 480.88-acres of open space for area residents that is not considered in the quantitative analysis.

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

Study Area Population

In the 2024 future without the Proposed Actions, 26 developments that are currently being planned or are under construction are expected to be completed in the residential open space study area (shown in Table D-5). These No-Action developments are expected to introduce a total of approximately 642 residents to the residential open space study area by 2024. Under the No-Action condition each of the projected development sites are to remain in their existing condition.

Table D-5
No-Action Developments*

Project	Market-Rate DUs	Affordable DUs	Residential (sf)	Commercial (sf)	Hotel Rooms	Community Facility (sf)	Industrial (sf)	Parking Spaces	# of Floors	Build Year
194 22nd Street	7		6,145						4	2018
734 5th Avenue	19		19,791					5	6	2019
217 22nd Street	2		5,250						3	2019
186 21st Street	26		35,017						5	2018
274 22nd Street	4		2,197						4	2019
230 20th Street	10		10,850						5	2018
669 5th Avenue	6		3,260						5	2019
231 20th Street	6		5,999						5	2018
208 19th Street	3		4,973						3	2019
187 20th Street	8		9,704						4	2019
150 20th Street				31,623	84				6	2018
132 20th Street				4,101	14			1	4	2018
131 22nd Street				21,306	58				4	2019
826 4th Avenue				23,737	62	24,009			8	2019
334 22nd Street	8		13,879						4	2019
328 21st Street	5		5,692						4	2019
719 6th Avenue	12		20,646						5	2019
261A 19th Street	2		3,110						3	2019
279 18th Street	1		3,280						3	2019
626 5th Avenue	20		20,602	1,948				14	6	2019
211 18th Street	2		3,272						3	2019
609 4th Avenue	73		84,647	4,065				8	11	2019
629 3rd Avenue/127 18th Street				31,734					3	2019
165 Prospect Avenue	2		2,134						3	2019
162 30th Street				20,020	81			12	4	2019
135 32nd Street				28,716	74				6	2019
Total	**216**	**-**	**260,448**	**138,534**	**299**	**24,009**	**-**	**40**		

Source: New York YIMBY, The Real Deal, DOB
*Refer to Figure C-4 and Table C-3 in Attachment C, "Land Use, Zoning, & Public Policy."

Table D-6
No-Action Open Space Study Area Population

	Existing Population	Additional Population as a Result of No-Action Developments	Future No-Action Population
Residents	14,628	642	15,270

Note: Additional population was determined using the average household size of Brooklyn Community District (CD) 7 (2.97 persons per household as determined by the 2010 Census).

Open Space Resources

At this time no planned alterations to the study area open spaces are expected by the 2024 analysis year. The residential open space study area will continue to be served by the existing 2.89 acres of open space presented above.

Assessment of Open Space Adequacy

In the future No-Action condition, the additional population introduced to the residential open space study area would increase the demand on the area's open spaces. With the anticipated No-Action development, the residential study area will continue to be underserved by passive and active open spaces in comparison to the City's guidance. As indicated in Table D-7, the No-Action total, passive, and active open space ratios per 1,000 residents are expected to decline to 0.189, 0.057, and 0.132, respectively. The No-Action residential open space ratios for total, passive, and active open space would continue to be less than the City's guideline ratio of 2.5 acres of open space per 1,000 residents and 2.0 acres of active open space per 1,000 residents.

Table D-7
Adequacy of Open Space Resources: 2024 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
Residents	15,270	2.89	0.87	2.02	0.189	0.057	0.132	2.50	0.50	2.00

The ratios for total, passive, and active open space within the residential study area would remain below the City's guidelines in the future without the Proposed Actions. As under existing conditions, there are a number of additional open space resources in and around the study area that could be accessed by residents that are not included in the quantitative analysis including D'Emic Playground, Detective Joseph Mayrose Playground, and the Butterfly Gardens. These resources represent a considerable amount of accessible active and passive open space accessible for the residential population.

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

In the future with the Proposed Actions, Projected Development Site 1 would be redeveloped with a 14-story (145-feet), 127,825 gsf mixed-use building with approximately 8,896 gsf of ground floor retail use and 118,929 gsf (142 DUs) of residential uses on the upper floors. Up to 35 of these DUs would be designated as affordable under the MIH program. On Projected Development Site 2, a 41,525 gsf mixed-use residential building would be constructed. The development would contain 38,405 gsf (47 DUs) of residential space and 3,210 gsf of local retail. Combined, these two developments would add 189 DUs to the residential study area.

Study Area Population

In total, the Proposed Actions would result in an incremental increase of 562 residents compared to No-Action conditions. As indicated in Table D-8, the ½-mile study area's residential population is expected to increase to 15,832.

Table D-8
2024 With-Action Open Space Study Area Population

	No-Action Population	Additional Population as a Result of the development on Projected Development Sites 1 and 2	Future With-Action Population
Residents	15,270	562	15,832

Direct Effects

No publicly-accessible open space is located on either projected development site. Therefore, the Proposed Actions would not result in the physical loss of publicly-accessible open space. In addition, the projected developments would not cause increased shadows, noise, or air pollutant emissions that would affect the usefulness of any study area open space, whether on a permanent or temporary basis. Furthermore, approval of the Proposed Actions would not change the use of any publicly-accessible open space so that it no longer serves the same user population, nor would it limit public access to any open spaces. Therefore, no significant adverse direct effects on open space would occur as a result of the Proposed Actions.

Indirect Effects

Under the future 2024 With-Action condition, total open space ratios in the residential (½-mile) study area would decrease, from 0.189 in the No-Action condition to 0.183 acres per 1,000 residents in the With-Action (see Table D-9). The passive and active open space ratios would also decrease slightly compared to No-Action conditions, from 0.057 and 0.132 to 0.055 and 0.128 acres per 1,000 residents, respectively, which would continue to be below the City's guidance ratios of 0.50 acres of passive open space per 1,000 residents and 2.0 acres of active open space per 1,000 residents.

Table D-9
Adequacy of Open Space Resources: 2024 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
Residents	15,832	2.89	0.87	2.02	0.183	0.055	0.128	2.50	0.50	2.00

In the future with the Proposed Actions, ratios of open space would continue to be lower than the measure of open space adequacy and the CEQR planning guidance for total, passive, and active open spaces. The population to be generated at Projected Development Sites 1 and 2 at 737 and 731 Fourth Avenue are not expected to have any special characteristics, such as a disproportionately younger or older population, that would place heavy demand on facilities that cater to specific groups.

It should also be noted that, while the amounts of total and active open space resources in the residential study area are, and would continue to be, deficient in comparison to City guidelines, the residential study area open spaces tend to have moderate utilization levels, and all are in good- to excellent condition (refer to Table E-3).

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. 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. These reductions may result in overburdening existing facilities or further exacerbating a deficiency in open space. Table D-10 expresses the percentage change from No-Action to With-Action conditions for the residential study area.

Table D-10
Open Space Ratios Summary

Type of Open Space	CEQR Technical Manual Open Space Guideline	Open Space Ratios per 1,000			Percent Change (Future No-Action to Future With-Action)
		Existing	No-Action	With-Action	
Total	2.5	0.198	0.189	0.183	-3.55%
Active	0.5	0.138	0.132	0.128	-3.55%
Passive	2.0	0.059	0.057	0.055	-3.55%

With respect to the reductions in open space within the residential study area, the total, active, and passive open space ratios would remain below the City's guideline ratios of 2.5 acres, 2.0 acres, and 0.5 acres per 1,000 residents, respectively, in the future with the Proposed Actions. The total residential study area open space ratio would decline by 3.55 percent to 0.183 acres per 1,000 residents; the active residential study area open space ratio would decline by 3.55 percent to 0.128 acres per 1,000 residents; and the passive residential study area open space ratio would decrease 3.55 percent to 0.055 acres per 1,000 residents.

Although there would continue to be a shortage of public open space in the study area, the increase in demand from the Proposed Actions would not result in significant reductions in open space ratios (defined as a reduction of five percent or more per *CEQR Technical Manual* guidance) compared to the No-Action condition and would not overburden existing open space resources or further exacerbate a deficiency in open space. Additionally, there are a number of other local open spaces located in the surrounding area that could be accessed by some residents of the study area, including D'Emic Playground, Butterfly Gardens, Detective Joseph Mayrose Playground, Greenwood Cemetery, and Prospect Park.

Moreover, the population to be generated by the development at Projected Development Sites 1 and 2 are not expected to have any special characteristics, such as a disproportionately younger or older population, that would place heavy demand on facilities that cater to specific user groups. The development at both projected development sites would not result in the physical loss of existing public open space resources, and would not result in any adverse shadow, air, noise, or other environmental impacts that would affect the usefulness of any study area open space. Therefore, the Proposed Actions would not result in significant adverse impacts to open space.

Attachment E
Urban Design & Visual Resources

I. INTRODUCTION

This attachment considers the potential effects of the Proposed Actions and subsequent development on urban design and visual resources. As defined in the *City Environmental Quality Review* (CEQR) *Technical Manual*, urban design is the totality of components that may affect a pedestrian's experience of public space. Elements such as streets, buildings, visual resources, open space, natural resources, wind, and sunlight play an important role in the pedestrian experience. The Proposed Actions would facilitate the development of a new predominantly residential building with ground floor commercial use along Fourth Avenue between 24th and 25th streets in the Greenwood Heights neighborhood of Brooklyn Community District (CD) 7.

In accordance with *CEQR Technical Manual* guidance, the assessment focuses on the components of the Proposed Actions and resultant development that may have the potential to alter the arrangement, appearance, and functionality of the built environment. As described in Attachment A, "Project Description," the Proposed Actions, as a reasonable worst-case development scenario (RWCDS), would facilitate the construction of a 14-story predominantly residential building at the Applicant-owned site at Block 652, Lot 1 ("Projected Development Site 1") that would accommodate up to 142 residential dwelling units (DUs) on floors two to 14 and approximately 8,896 gross square foot (gsf) of local retail space on the ground floor, as well as 45 accessory parking spaces on a single cellar level, which is expected to be completed in 2024. In addition, it is anticipated that the Proposed Actions would result in the development of a 12-story predominantly residential building at adjacent Lot 7 ("Projected Development Site 2") that would include up to 47 residential DUs on floors two to 12 and approximately 3,120 gsf of local retail space on the ground floor. In the absence of the Proposed Actions (the No-Action condition), it is assumed that Projected Development Site 1 would continue to be occupied by the existing 4,774 gsf, single-story eating and drinking establishment and accessory drive-through and 11 accessory at-grade parking spaces, and that Projected Development Site 2 would continue to be occupied by the existing 4,317 gsf two-story building containing several commercial uses including an eating and drinking establishment, autobody repair, and vehicle lease return office. The effect of the Proposed Actions represents the incremental effect on conditions resulting from the net change in development at the development site between No-Action and With-Action conditions.

II. PRINCIPAL CONCLUSIONS

The Proposed Actions and subsequent development would not have a significant adverse impact on the area's urban design and visual resources. The Proposed Actions would facilitate new development at the projected development sites, including residential and commercial uses adjacent to existing residential and commercial development, and along a major shopping thoroughfare in Greenwood Heights, Brooklyn. The RWCDS would replace a single-story commercial building and an unenclosed at-grade accessory parking lot with a new 14-story predominantly residential building with ground floor commercial that is expected to bring a 24-hour presence to the development site. Consistent with the proposed R8A/C2-4 (EC-1) contextual zoning district, the projected developments would be constructed at the street line

along all three of each site's street frontages creating a strong streetwall consistent with surrounding development. Projected Development Site 1's proposed ground floor uses with entrances along Fourth Avenue would further activate the streetscapes by increasing pedestrian traffic.

The Proposed Actions would not result in any significant adverse impacts on the existing street network or grid, nor would they affect any view corridors. The developments in the With-Action condition would be larger and taller than the development in the No-Action condition and existing buildings in the study area, but is expected to complement the existing building context, which includes a variety of residential building typologies. The With-Action building would also be consistent with surrounding neighborhood context in terms of use and lot placement, forming consistent streetwalls with buildings lining Fourth Avenue, 24th Street, and 25th Street.

Although the Proposed Actions would result in a building that is larger in height and bulk (scale) than those found in the immediate surrounding neighborhood, from a pedestrian's perspective, the building would not obstruct important view corridors. The With-Action developments would be prominent along Fourth Avenue, 24th Street, and 25th Street. Furthermore, the bulk of Projected Development Site 1 would be massed away from adjacent buildings in the With-Action condition and toward Fourth Avenue, a wide street. The scale of future development would be appropriate for the scale of the streets adjacent to the development sites and study area.

The Proposed Actions would not result in any development that would obstruct or eliminate any public views or affect any existing view corridors or views of visual resources in the study area. As such, the Proposed Actions would not result in any significant adverse impacts to visual resources.

III. METHODOLOGY

Pursuant to the *CEQR Technical Manual*, an assessment of urban design is appropriate when a proposed action(s) may have effects on one or more of the elements that contribute to the pedestrian experience of public space. The assessment focuses on the components of a proposed action(s) that may have the potential to alter the arrangement, appearance, and functionality of the built environment.

As described in the *CEQR Technical Manual*, a preliminary urban design analysis is appropriate when there is potential for a pedestrian to observe from the street level a physical alteration beyond that allowed by existing zoning. A preliminary analysis provides a "snapshot" of the project, comparing existing and future conditions with and without the Proposed Actions. The following analysis examines each of the elements that play an important role in the pedestrian experience, including street hierarchy and streetscape (including the arrangement and orientation of streets); building scale, form and arrangement; and natural features, open space, and topography.

Per criteria of Section 230 of the *CEQR Technical Manual,* a wind condition analysis is not warranted for the Proposed Actions. The Project Area and two projected development sites are not located in a high wind location (such as along west and northwest-facing waterfronts), and the RWCDS would not result in the construction of more than two tall buildings that would have the potential to alter wind conditions.

The analysis is based on field visits, aerial views, photographs, and other graphic images of the Project Area and surrounding neighborhood. Zoning calculations, including floor area calculations, building heights and lot coverage information is also provided.

The following preliminary analysis also considers the effects of the Proposed Actions and associated RWCDS on the area's visual resources, which are generally considered to be important public view corridors, vistas, or natural or built features. Visual resources can include waterfront views, public parks, landmark structures or districts, or natural features, such as rivers or geologic formations.

Based on *CEQR Technical Manual* guidance, the study area for urban design is the area where the Proposed Actions may influence land use patterns and the built environment. The urban design study area consists of both a primary study area (where urban design effects of the Proposed Actions are direct) and a secondary study area. For this assessment, the primary study area encompasses the Project Area. Consistent with the analysis of land use, zoning, and public policy, the secondary study area for urban design resources has been defined as being within approximately 400 feet of the Project Area (see Figure E-1).

As stated in the *CEQR Technical Manual*, for visual resources, the view corridors within the study area from which such resources are publicly viewable should be identified. While the land use study area may serve as the initial basis for analysis, in many cases where significant visual resources exist, it may be appropriate to look beyond the land use study area to encompass views outside of the area, as is often the case with waterfront sites or sites within or near historic districts. For this analysis, prominent visual resources (both within and outside of the urban design study area) that are visible from the Project Area and study area were identified. The primary view sheds of these visual resources that would be affected by construction of the RWCDS were the focus of the visual resources analysis.

IV. PRELIMINARY ASSESSMENT

Existing Conditions

As noted above, Figure E-1 shows both the primary (i.e., Project Area) and 400-foot secondary study areas. Figure E-2 provides a photograph key for the approximate locations of where each of the photographs included in Figures E-3a and E-3b had been taken.

Urban Design

Primary Study Area (Project Area)

The approximately 20,034 sf Project Area, which is coterminous with the primary study area, comprises the 15,017-sf Applicant-owned Brooklyn Block 652, Lot 1 (Projected Development Site 1), and the 5,017-sf Lot 7 of Block 652 (Projected Development Site 2; also Applicant-owned) in the Greenwood Heights neighborhood of Brooklyn CD 7. The Project Area has frontage on Fourth Avenue (a wide street) to the northwest, 24th Street (a narrow street) to the northeast, and 25th Street (a narrow street) to the southwest (refer to Figure E-1).

Building Bulk, Use, Type, and Arrangement

Projected Development Site 1 at 737 Fourth Avenue (Lot 1) is a rectangular-shaped corner lot with approximately 150 feet of frontage on east side of Fourth Avenue, and 50 feet of frontage on the north side of 25th Street. The site is underbuilt, and is occupied by a single-story (15-feet in height), approximately 4,447 gsf Dunkin Donuts/Baskin Robbins eating and drinking establishment (0.32 FAR). As

Figure E-1
Urban Design Study Areas

Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2
- 652 Tax Block
- 1 Tax Lot
- Existing Buildings

shown in Figure E-3a, the building is set back from Fourth Avenue (approximately 6 feet) (see photographs #1 and 4) and 25th Street (approximately 70 feet) (see photograph #3), and comprises the northern portion of the site, while the 11-space at-grade parking lot occupies the southern portion of the site. The building features tan-painted exterior cinderblock walls and a prominent orange band that lines the roof – a common feature of Dunking Donuts/Baskin Robbins establishments (photographs #1 and 3 in Figure E-3a). The New York City Department of Buildings (DOB) estimates that the existing building on Lot 1 was constructed in 2002.

The southern portion of the lot is occupied by a 11-space at-grade, paved accessory parking lot. A freestanding pylon sign is located at the southwest corner of the lot and visible from both Fourth Avenue and 25th Street. The parking lot is accessible from curb cuts on Fourth Avenue and on 25th Street. The main entrance of the Dunkin Donuts/Baskin Robbins is located along the building's Fourth Avenue frontage and includes an ADA accessible ramp. The building does not include any pedestrian entrances along its 25th Street frontages. Most pedestrian activity at the site is along the building's Fourth Avenue frontage and within the accessory parking lot.

As shown in Figure E-1, the other Applicant-owned property included within the Project Area – Lot 7 (Projected Development Site 2) – abuts Lot 1 to the north. Projected Development Site 2, a corner lot at 741 Fourth Avenue with approximately 50 feet of frontage on Fourth Avenue and 100 feet of frontage on 24th Street (a narrow street), comprises approximately 5,017 sf of lot area, and is occupied by a two-story (29-feet in height), approximately 4,317 gsf (0.86 FAR) building containing several commercial uses, including an eating and drinking establishment, autobody repair, and a vehicle lease return office. As shown in photograph #2 of Figure E-3a, the property contains a mixture of red brick, cinder, and concrete exterior walls, and is largely built to the street line along both Fourth Avenue and 24th Street. The commercial uses have main entrances on both Fourth Avenue and 24th Street. At the northeastern edge of the site, the building contains a small garage for auto repairs that is accessible from a curb cut on 24th Street. DOB estimates that the existing building on Lot 7 was constructed in 1960 with alterations in 1973 and 1984.

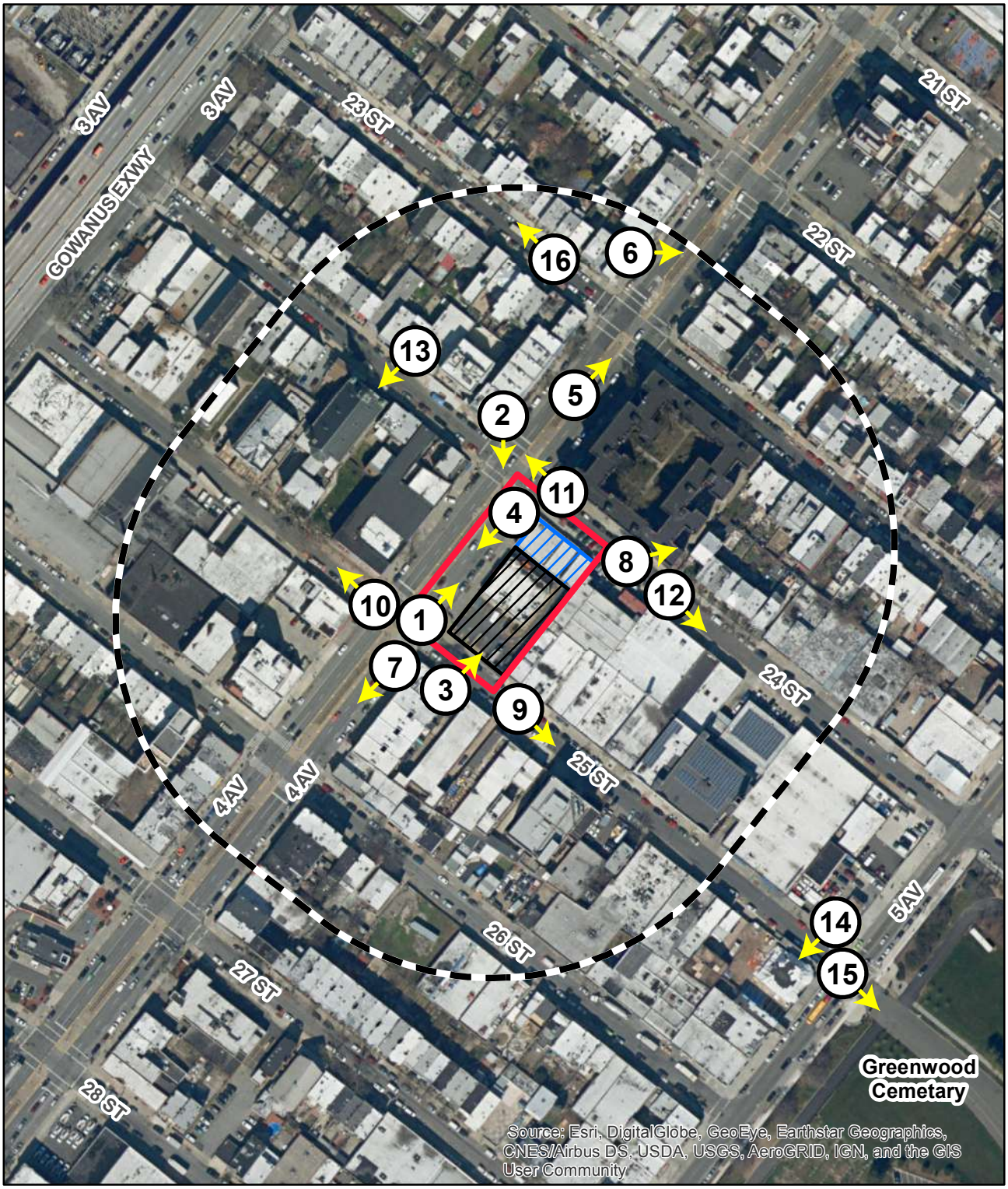
Block Form, Street Pattern, and Street Hierarchy

Fourth Avenue is a two-way principal north-south corridor in Brooklyn, running roughly from Atlantic Terminal to the Verrazzano-Narrows Bridge; 24th Street is a principal westbound roadway, and 25th Street is a principal eastbound roadway, both running roughly between Greenwood Cemetery and the Gowanus Expressway. Based on the widths of the three roadways, Fourth Avenue is considered by zoning to be a "wide street," whereas 24th and 25th streets are both considered to be "narrow streets." Near the Project Area, Fourth Avenue features a central concrete median lined with raised subway vents and is largely flanked with commercial uses that serves as a major shopping destination for the surrounding area (refer to photographs #5, 6, and 7 of Figure E-3b). Fourth Avenue is a wide, heavily trafficked corridor greater than 75 feet in width, and generally includes on-street parking.

Streetscape Elements

Streetscape elements along the Project Area's street frontages include several street trees along Fourth Avenue and 24th Street, parking signage, standard cobra head street lights, trash receptacles, fire hydrants, a "NYCLink" kiosk on the southeast corner of Fourth Avenue and 24th Street and a single bike rack along Fourth Avenue (see Figure E-3a).

Aerial Map and Existing Conditions Photo Key



Legend

- Project Area
- 400-ft Radius
- Projected Development Site 1
- Projected Development Site 2
- 1 Photo Location (Keyed to Figures E-3a, E-3b, E-6a & E-6b)

1) Looking north from the intersection of 25th Street and Fourth Avenue.

2) Looking southeast towards Projected Development Site 2 from the intersection of 24th Street and Fourth Avenue.

3) Looking north towards Projected Development Site 1 from 25th Street.

4) Looking south towards 25th Street in front of the Projected Development Sites.

5) Looking north from the median of Fourth Avenue between 23rd and 24th Street.

6) Looking east from the western side of Fourth Avenue, north of 23rd Street.

7) Looking south from the eastern side of Fourth Avenue, south of 25th Street.

8) Looking north from 24th Street, east of Fourth Avenue.

Topography, Natural Features and Open Space

The topography of the primary study area is generally flat. There are no natural features or open spaces within the Project Area.

Secondary Study Area

As discussed above, the secondary study area has been defined as the area within an approximate 400-foot radius of the Project Area. As shown in Figure E-1, it is generally bound by midway between Third and Fourth avenues to the northwest, midway between 22nd and 23rd streets to the northeast, midway between Fourth and Fifth avenues to the southeast, and midway between 26th and 27th streets to the southwest.

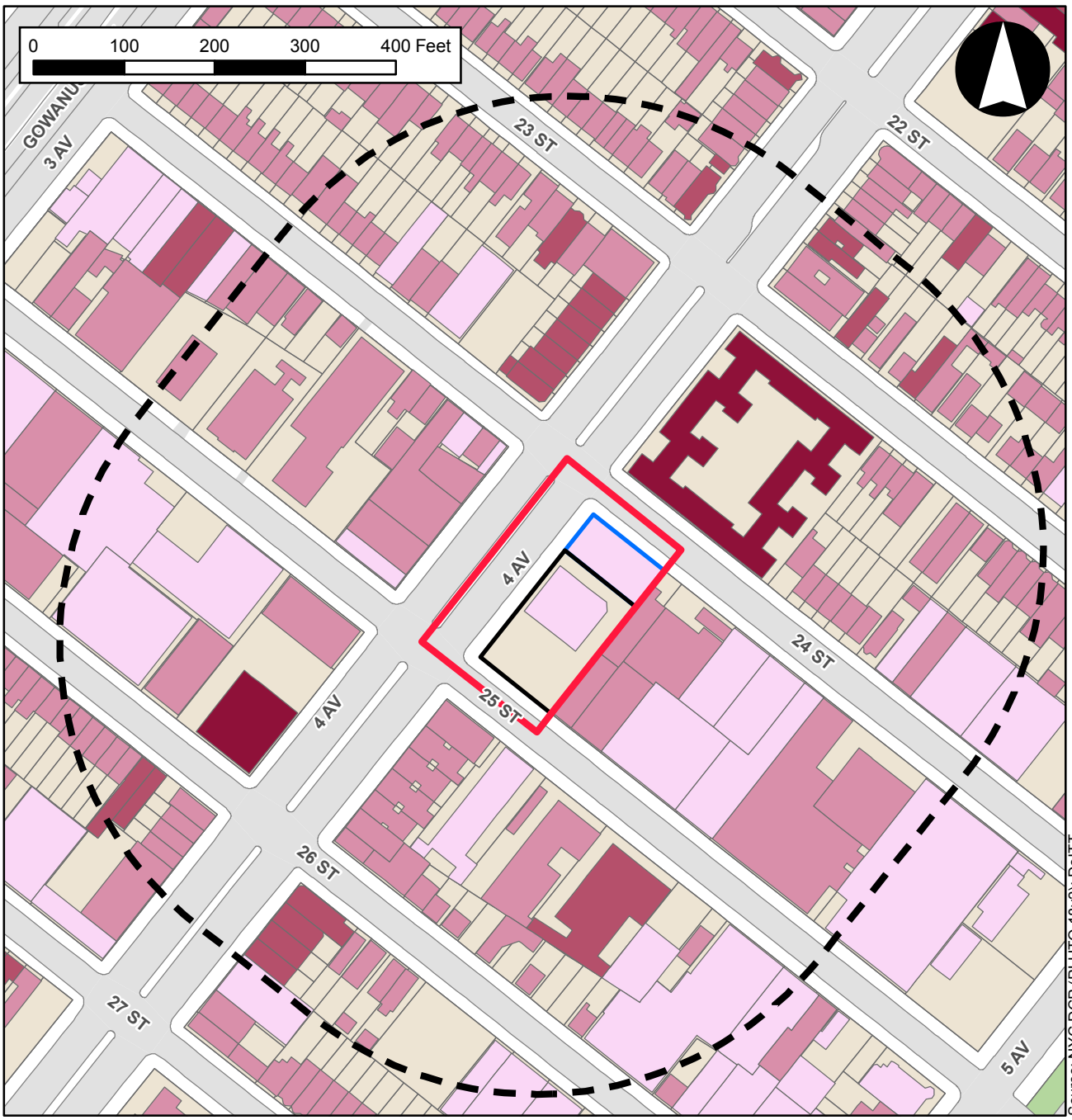
Building Bulk, Use, Type, and Arrangement

Table C-1 in Attachment C, "Land Use, Zoning, and Public Policy," summarizes the existing generalized land uses within the 400-foot land use study area by tax lots and land area. Overall, as reflected in Table C-1 and shown in the photographs of Figure E-3b, the secondary study area contains a wide mix of residential, commercial and industrial uses, as well as several community facility uses. Residential uses include attached and detached two- and three-story single- to two-family homes, as well as taller higher density four- to six-story multifamily walkup and elevator residential buildings. Higher density multifamily residential buildings are generally located closer to the avenues, and one- and two-family homes generally characterize the midblocks between the avenues. Low-rise light industrial uses are primarily located in the midblocks between 24th and 26th streets, and generally consist of one- to two- story warehouse and light manufacturing buildings. Community facility uses, which include two houses of worship, Our Lady of Czestochowa-St. Casimir Parish and Igelsia Cristiana Rehoboth, are located on 24th Street and Fourth Avenue, respectively. Most properties in the study area are developed and there are few vacant, undeveloped properties. Commercial and mixed residential uses with ground-floor retail are largely concentrated along Fourth Avenue and generally range between one- and four-stories in height, with exception to a 10-story hotel on the northwest corner of Fourth Avenue and 26th Street, approximately 150 feet southwest of the Project Area.

As shown in Figure E-4, most buildings within the study area contain six or fewer stories. Higher density, four-to six-story, brick, multi-family residential apartment buildings and mixed-use residential buildings with ground-floor retail are located primarily along Fourth Avenue (see photograph #5 in Figure E-3b), and low-rise one- and two-family wood-frame homes generally characterize the area north of 24th Street, and occupy narrow rectangular-shaped lots (see photograph #6 and 8 of Figure E-3b). Many one- and two-family homes have patios, porches, or small stoops, but do not include driveways or garages (see photograph #8 in Figure E-3b). Of the community facility uses, Our Lady of Czestochowa-St. Casimir Parish occupies a large property that spans three tax lots (Block 651, Lots 25, 51, and 54), whereas Iglesia Cristiana Rehoboth occupies a single narrow, rectangular-shaped lot (Block 646, Lot 2). Fourth Avenue is an active commercial corridor featuring low-rise commercial uses including a variety of clothing and accessory stores, fast food, services, and supermarkets, and a few mixed-use buildings (see #7 in Figure E-3b). Most of the retail uses are small establishments. Building signage is prominent along Fourth Avenue.

Most buildings are oriented to the street, and largely built at the street line, or include shallow fenced front yards. Various built FARs are scattered throughout the study area, and range in FAR between 0 and

Figure E-4
Study Area Building Heights



Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2

Number of Floors

- 1 Floor
- 2 - 3 Floors
- 4 - 5 Floors
- 6 or More Floors

4.05. However, buildings along Fourth Avenue generally have greater built FARs (generally ranging in FAR from 1.5 to 3.5) as compared to the rest of the study area (generally less than 2.0 FAR) (see Figure E-5).

Block Form, Street Pattern, and Street Hierarchy

The surrounding street pattern is set up in a regular grid pattern, with east-west oriented blocks with Fourth Avenue extending perpendicularly through the study area. This has generally resulted in regular rectangular-shaped lots that vary in size and width. With the exception of Fourth Avenue, most streets in the study area are one-way. All streets generally have on-street parking.

Streetscape Elements

Concrete sidewalks flank all streets in the secondary study area and are generally in good condition. All sidewalks in the secondary study area accommodate street lights, street signs, fire hydrants, trash receptacles, mail boxes, and street trees. Fourth Avenue, which accommodates four lanes of two-way traffic, features a central concrete median lined with raised subway vents. In addition, subway entrances for northbound and southbound R train service are located on the southeast and southwest corners of Fourth Avenue and 25th Street, respectively.

Topography, Natural Features, and Open Space

As the area is an urbanized location, the topography of the secondary study area is generally flat. There are no natural features or publicly accessible open spaces in the secondary study area. However, the eastern-most side yard of Our Lady of Czestochowa-St. Casimir Parish, located west of the Project Area, features gardens and landscaped areas.

Visual Resources

Primary Study Area (Project Area)

No visual resources are located within the Project Area. However, a number of visual resources can be seen from the Project Area, including: glimpses of three historic landmarks, the Greenwood Cemetery, listed on the State/National Registers of Historic Places (S/NR), the Green-Wood Cemetery Gates designated by New York City's Landmarks Preservation Committee (LPC), and the McGovern-Weir Greenhouse (both LPC-designated and S/NR-listed); one natural resource, the Gowanus Canal; and one house of worship, the Our Lady of Czestochowa-St. Casimir Parish. The two LPC-listed resources can both be seen along the Project Area's southern frontage on 25th Street, while the Gowanus Canal and S/NR-listed Greenwood Cemetery can be viewed from the Project Area's northern and southern frontages along 24th and 25th streets, respectively; the Our Lady of Czestochowa-St. Casimir Parish can be viewed from the Project Area's Fourth Avenue, 24th Street, and 25th Street frontages. The visual resources that can be viewed along the Fourth Avenue, 24th Street, and 25th Street are generally partially obstructed by existing buildings, fences, trees, and other streetscape elements; the Gowanus Canal is further obstructed by the elevated Gowanus Expressway, which is located between the Project Area and the waterfront (see Figure E-6a).

Figure E-5
Built FAR

Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-ft Radius)
- Projected Development Site 1
- Projected Development Site 2

Built FAR

- 0 - 1.0 FAR
- 1.0 - 2.0 FAR
- 2.0 - 3.0 FAR
- 3.0 - 4.0 FAR
- 4.0 FAR and Greater

Secondary Study Area

One visual resource, the Our Lady of Czestochowa-St. Casimir Parish, is located within the study area (see photograph #13 in Figure E-6b). The Greenwood Cemetery (S/NR-listed), the Green-Wood Cemetery Gates (LPC-designated), the McGovern-Weir Greenhouse (LPC-designated and S/NR-listed), and the Gowanus Canal are all visual resources located outside of the study area that can be seen from various points within the study area (see Figure E-6b, photos #14-#16). The McGovern-Weir Greenhouse and Green-Wood Cemetery Gates are only visible from 25th Street, while the Greenwood Cemetery and Gowanus Canal are only visible from 24th and 25th streets.

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

In absence of the Proposed Actions, the Project Area would remain as under existing conditions. Projected Development Site 1 would continue to be occupied by a single-story eating and drinking establishment, an accessory drive through and 11-space at-grade accessory parking lot. Projected Development Site 2 would continue to be occupied by a two-story building contain several commercial uses, including eating and drinking establishments, an autobody repair, and a vehicle lease return office. In addition, and as described in Attachment C, "Land Use, Zoning, and Public Policy," there are no known and anticipated developments expected to be completed by the 2024 analysis year in the secondary study area.

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

This section describes the effects of the Proposed Actions and resultant RWCDS on the urban design and visual resource conditions in the primary and secondary study areas by 2024 and evaluates the potential for the Proposed Actions to result in significant adverse impacts.

In the future with the Proposed Actions (the With-Action condition), the proposed zoning map and zoning text amendments would be implemented in the Project Area. As such, the Project Area would be remapped with R8A zoning district, as well as a C2-4 commercial overlay along Fourth Avenue at a depth of 100 feet. The proposed R8A zoning district would be designated as an MIH Area. As a part of the Proposed Actions, the Project Area would also be mapped as part of the Special Enhanced Commercial District 1 (EC-1), effectively extending the existing EC-1 district south along the east side of Fourth Avenue. Under With-Action conditions, the maximum allowable residential FAR in the Project Area would increase from 0.0[1] to 7.2 with MIH, community facility use FAR would increase from 2.4 to 6.5, and commercial use FAR would increase from 1.0 to 2.0. Manufacturing uses would no longer be permitted in the Project Area. The proposed EC-1 map and text amendments would impose additional transparency requirements, limit curb cuts and establish special use provisions to require ground-floor neighborhood services and amenities and limit parking and residential uses on the ground floor facing Fourth Avenue.

The RWCDS would have a total FAR of 7.2, consistent with the maximum permitted FAR in an R8A/C2-4 (EC-1) district under the proposed zoning map and text amendments. Pursuant to the proposed R8A/C2-4 (EC-1) contextual zoning, the RWCDS would feature a building base built to the street line, above which the building would setback before rising to the maximum height of approximately 145 feet.

As detailed in Attachment A, "Project Description," the Proposed Actions would facilitate new development, including market-rate and affordable residential units, ground floor commercial space, and

[1] Residential uses in M1-1D districts are not permitted as-of-right. However, residential uses are permitted only by CPC authorization pursuant to ZR 42-47, and have a maximum permitted residential FAR of 1.65.

9) Looking east from 25th Street and Fourth Avenue towards Greenwood Cemetery.

10) Looking west from 25th Street and Fourth Avenue towards the Gowanus Canal. Views of the canal are obstructed by the Gowanus Expressway.

11) Looking west towards the Our Lady of Czestochowa - St. Casimir Parish and Gowanus Canal from 24th Street and Fourth Avenue. Views of the canal are obstructed by the Gowanus Expressway.

12) Looking east from 24th Street and Fourth Avenue towards Greenwood Cemetery.

13) Looking south from 24th Street, west of Fourth Avenue, towards Our Lady of Czestochowa - St. Casimir Parish.

14) Looking south from 25th Street and Fifth Avenue towards the McGovern-Weir Greenhouse.

15) Looking west towards Greenwood Cemetery from the intersection of 25th Street and Fifth Avenue.

16) Looking west towards the Gowanus Canal from 23rd Street. The view of the canal is obstructed by the Gowanus Expressway.

accessory parking at the Applicant-owned Projected Development Site 1 at 737 Fourth Avenue. In addition, as a RWCDS, it is expected that the adjacent property at 741 Fourth Avenue (Projected Development Site 2) would be redeveloped as a result of the Proposed Actions, and would include market-rate and affordable residential units and ground floor commercial space. Under the RWCDS, the currently underbuilt Projected Development Site 1 and Projected Development Site 2 would be redeveloped with a 14-story and 12-story building, respectively, with a combined total of approximately 165,832-gsf of floor area, comprised of up to 189 DUs, and approximately 12,016 gsf of retail space on the ground floor. Additionally, the development at Projected Development Site 1 would include 45 accessory parking spaces on a single cellar level. Projected Development Site 2 would not be required by zoning to provide parking.[3] Under the proposed R8A zoning, accessory parking would be required for the residential units set aside for households earning above 80 percent of AMI.[4]

Urban Design

Primary Study Area (Project Area)

Development facilitated by the Proposed Actions would be built on an existing block, and would not entail any changes to topography, street patterns and hierarchy, block shapes or natural features in the proposed rezoning area. The Proposed Actions would introduce two new buildings with a massing that is not permitted under the current zoning.

In accordance with the proposed R8A zoning district, the Applicant-owned development would be built to the street line along Projected Development Site 1's Fourth Avenue, 24th Street, and 25th Street frontages forming strong street wall presence. The With-Action building would have a maximum height of approximately 145 feet, which would be massed towards Fourth Avenue – a wide street. As shown in Figures E-7a to E-7d, the With-Action development would vary in height and setback, serving to break up the building's mass and to establish a natural transition with the surrounding context. The easternmost portions of the building extending along 25th Street and closest to the existing two-story warehouse building at 207 25th Street would have heights of seven stories (permitted base height of 60 to 105 feet) which is more consistent with existing surrounding development. Most of the ground-floor (approximately 15,000 gsf) would be occupied by "Qualifying" local retail space with floor heights of approximately 15 feet, and residential uses would occupy the floors above.

The proposed building on Lot 1 would have approximately 100 feet of frontage along 25th Street and approximately 150 feet of frontage along Fourth Avenue. An accessory below-grade parking garage with 45 enclosed parking spaces would be accessible at the site's southern frontage along 25th Street. Vehicles would enter the parking garage using a new 24-foot curb cut located approximately 68 feet east of Fourth Avenue. It is anticipated that the main residential entrance to the proposed building would also be located on 25th Street approximately 35 feet east of Fourth Avenue, with an additional service entrance located directly east of the parking garage entrance. Retail entrances would be located on Fourth Avenue.

As discussed above, as a RWCDS it is anticipated that the existing two-story building on Lot 7 would be demolished, and the site would be redeveloped in accordance with the proposed R8A zoning district, C2-4 commercial overlay, MIH Area, and Special EC-1 District regulations. Projected Development Site 2 is anticipated to be redeveloped to the maximum permitted FAR of 7.2 with an approximately 41,525 gsf

[3] Pursuant to ZR 25-242.
[4] Pursuant to ZR 25-251.

(36,122 zsf) mixed-use residential and commercial building with ground-floor retail space. It is expected that parking on Projected Development Site 2 would be waived pursuant to ZR Section 25-242.

The Proposed Actions and subsequent RWCDS would further enhance the pedestrian environment and enliven the streetscape and establish a 24-hour presence at the projected development sites with the introduction of residents and a full, activated streetwall along Fourth Avenue. In addition, in accordance with zoning regulations, new street trees would be planted along every 25 feet of street frontage on the Projected Development Sites' 24th Street, Fourth Avenue, and 25th Street frontages.

As shown in Figures E-7a to E-7d, the Proposed Actions would substantially change the urban design character of the primary study area. With the maximum height of the RWCDS being approximately 145 feet and 165,832 gsf in size, the height and bulk of the proposed building would be substantially taller than the single-story eating and drinking establishment currently occupying Projected Development Site 1 and the two-story building currently occupying Projected Development Site 2. The increased scale, both in terms of bulk and height, would be a notable change from the pedestrian's perspective to the appearance and character of the development site compared to the No-Action condition.

Compared to the future without the Proposed Actions, in the future with the Proposed Actions, the visual appearance of the pedestrian experience of the projected development sites would change significantly as a 14-story building would replace a single-story building and large open parking area (Projected Development Site 1) and a 12-story building would replace a two-story building (Projected Development Site 2); however, this change would not meet the 2014 *CEQR Technical Manual* threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the projected development sites such that the alteration would negatively affect a pedestrian's experience of the area. Furthermore, the proposed mixed-use development at Projected Development Site 1 would be oriented towards its adjoining sidewalks with building entrances to the proposed commercial uses located primarily along Fourth Avenue and an entrance to residential uses on 25th Street.

Secondary Study Area

As the Proposed Actions are site-specific, they would not result in any changes in the urban design in the secondary study area. New development facilitated by the Proposed Actions would be limited to the projected development sites within the Project Area. The Proposed Actions would not alter any street patterns, street hierarchies, block forms, building uses, and bulk regulations in the secondary study area. The proposed R8A zoning district is a contextual district governed by Quality Housing bulk regulations, which encourages high lot coverage buildings set at or near the street line with height limits. While the RWCDS building would represent a departure from the urban design character of the secondary study area in terms of height and bulk, it would be consistent with study area buildings' land uses, including active ground floors uses, and building placement and orientation along the property line.

The proposed zoning changes are intended to facilitate development that would be appropriate for a transit accessible area along a major thoroughfare. Additionally, the Proposed Actions would facilitate the construction of a new building that would be in keeping with the largely residential character of the area that would also retain ground-floor commercial space along a prominent commercial corridor. The With-Action development would bring a 24-hour presence to the projected development sites with the introduction of residential uses. The ground floor retail with entrances along Fourth Avenue are also expected to enhance the pedestrian realm making the surrounding area more inviting to pedestrians. Further, unlike the No-Action and existing conditions at Projected Development Site 1, the With-Action

Figure E-7a
No-Action vs. With-Action Comparison:
View south along Fourth Avenue

Existing/No-Action

With-Action

Figure E-7b
No-Action vs. With-Action Comparison:
View north along Fourth Avenue

Existing/No-Action

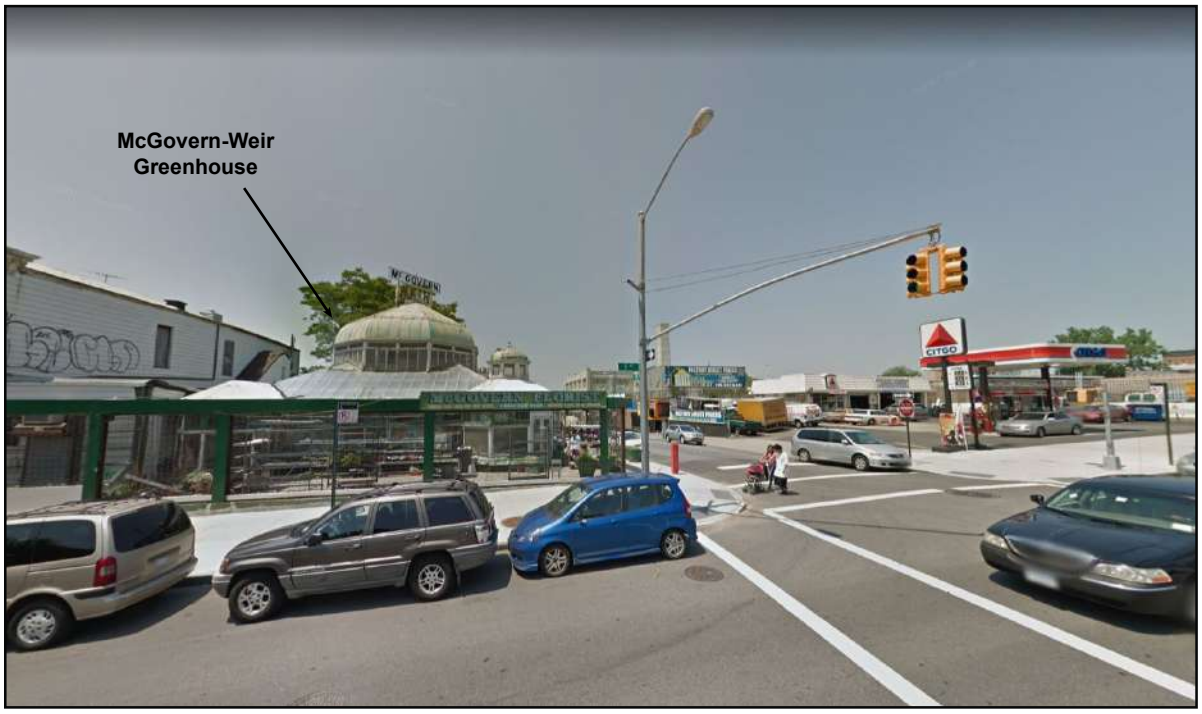
With-Action

Figure E-7c
No-Action vs. With-Action Comparison:
View east at the intersection of Fourth Avenue and 25th Street

Existing/No-Action

With-Action

Figure E-7d
No-Action vs. With-Action Comparison:
View west at the intersection of Fifth Avenue and 25th Street



Existing/No-Action

With-Action

development would include a below-grade garage to accommodate accessory parking, and as such, the With-Action streetscape would have a more pedestrian-oriented streetscape along Fourth Avenue with limited frontage devoted to auto-oriented garage and loading uses, which would be limited to 25th Street. In addition, the improvements to the streetscape, including landscaping and the planting of street trees, would enliven the secondary study area.

The With-Action development would introduce strong streetwalls along 25th Street and Fourth Avenue that would be consistent with surrounding development. With a maximum height of approximately 145 feet, the upper floors of the building would be visible from surrounding streets. As described previously, the surrounding area supports a mix of building types, scales and heights, including low-rise two- to three-story residential buildings, single-story commercial buildings, and four- to six-story multifamily apartment buildings. While the With-Action development would be taller than the existing structures in the secondary study area, the building's massing would be setback from the streetwall. As such, the Proposed Actions are not anticipated to result in any significant adverse impacts to urban design in the study area surrounding the Project Area, nor would they result in significant adverse impacts to the experience of the pedestrian.

Visual Resources

As discussed above, the Project Area does not contain any visual resources and this would not change in the future with the Proposed Actions. The projected development sites would accommodate buildings that would rise to a maximum height of 145 feet under With-Action conditions. However, no view corridors of significant visual resources would be obstructed as a result of these height and density increases in the Project Area. All new development would occur within an existing block. The new buildings on the projected development sites are expected to further define view corridors in the secondary study area by replacing a single-story commercial building, a two-story commercial building, and a paved, unenclosed accessory parking lot with a new predominantly residential development with solid streetwalls along 24th Street, 25th Street, and Fourth Avenue.

In summary, the Proposed Actions and associated RWCDS would not change urban design features such that the context of natural or built features are adversely altered and would not partially or fully block any significant public views to a visual resource. Therefore, the Proposed Actions would not result in significant adverse impacts to study area visual resources.

Attachment F
Air Quality

I. INTRODUCTION

737 Fourth Avenue, LLC ("the Applicant") is seeking disretionary action to facilitate the development of a 14-story (145-foot tall) mixed use building comprising approximately 127,825 gross square feet (gsf) of floor area ("Projected Development Site 1") on Block 652 Lot 1 in the Greenwood Heights neighborhood of Brooklyn (refer to Figure F-1). The Project Area includes Lots 1 and 7, and is bounded by Fourth Avenue to the northwest, 24th Street to the northeast, and 25th Street to the southwest. Projected Development Site 1 is located on Lot 1, which is currently occupied by a commericial building with eating and drinking establishments. The reasonable worst-case development scenario (RWCDS) also assumes that the Proposed Actions would result in the development of a second applicant-owned projected development site on Lot 7 ("Projected Development Site 2"). Projected Development Site 2, which is expected to be devleoped at a maiximum height of 135-feet, would comprise approximately 41,525 gsf of residential and retail area. It is expected that both development sites would be constructed and occupied by 2024.

Emissions from heating, ventilation, and air conditioning (HVAC) system of the Projected Development Site 2, which is anticipated to be shorter in height than Projected Development Site 1, may have the potential to significantly impact residential receptors on the upper floors of Projected Development Site 1.

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 Projected Development Site 2 building as they may impact the Projected Development Site 1 building (i.e., a project-on-project analysis).

A map showing the location of the two development sites are shown on Figure F-1 and a 3-D view of Projected Development Site 1 is shown on Figure F-2.

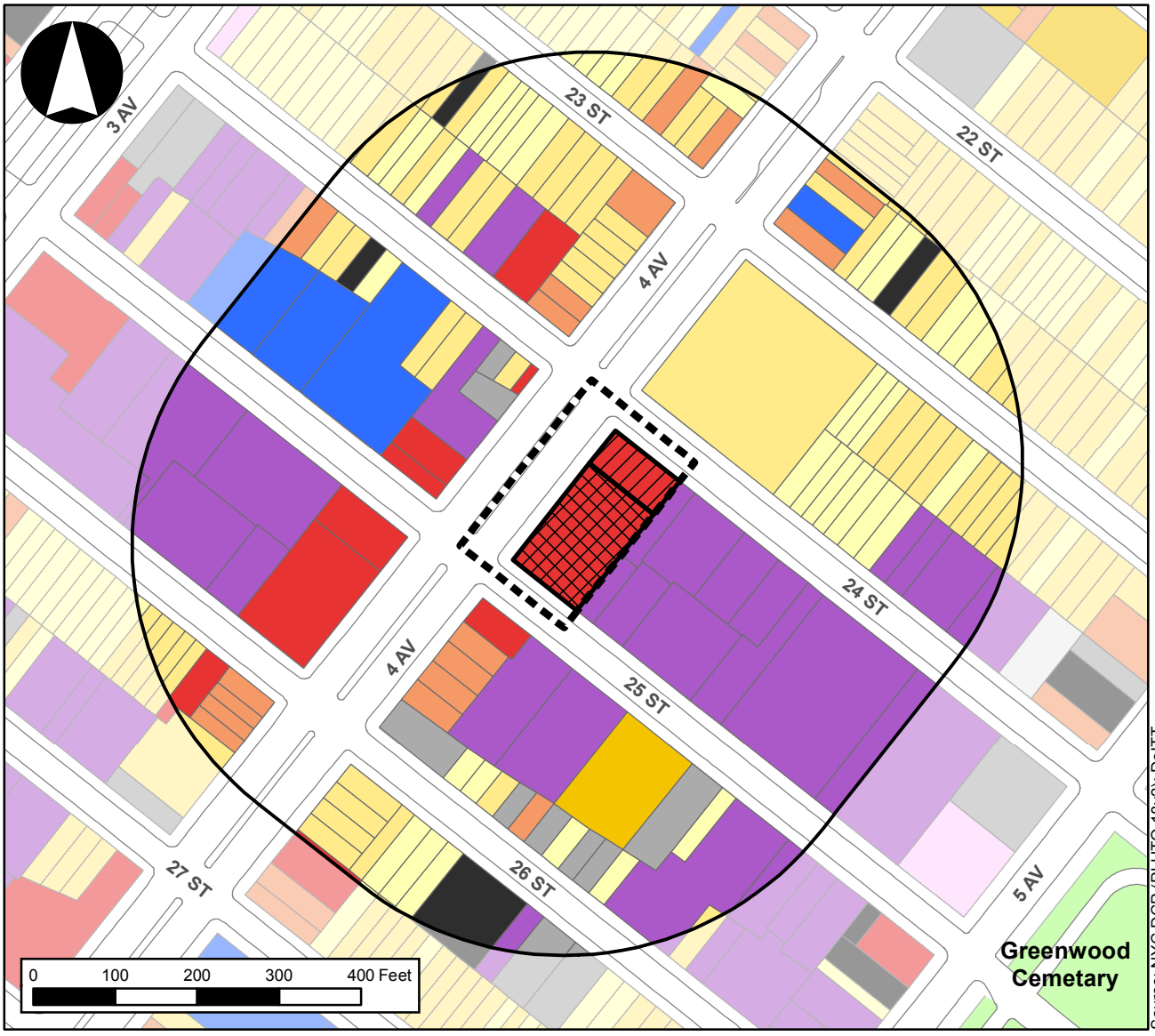
An analysis of the potential impacts of the HVAC emissions of the proposed developments on existing buildings (project-on-existing) as well as the potential impacts of the emissions of existing major emission sources on the proposed development sites are not warranted because:

- No existing buildings taller than the proposed buildings are located within 400 feet of the project sites; and
- No major emission sources (Title V facilities or State facilities) are located within 1,000 feet of project sites.

An analysis of existing industrial sources on the proposed development is also not warranted. As the Project Area is currently located in a M1-1D district, which permits residential uses by authorization of the City Planning Commission (CPC), the proposed R8A/C2-4 district would not result in new sensitive land uses permitted in the Project Area.

Potential air quality impacts were estimated following the procedures and methodologies prescribed in the *CEQR Technical Manual*.

Project Location and Surrounding Land Uses



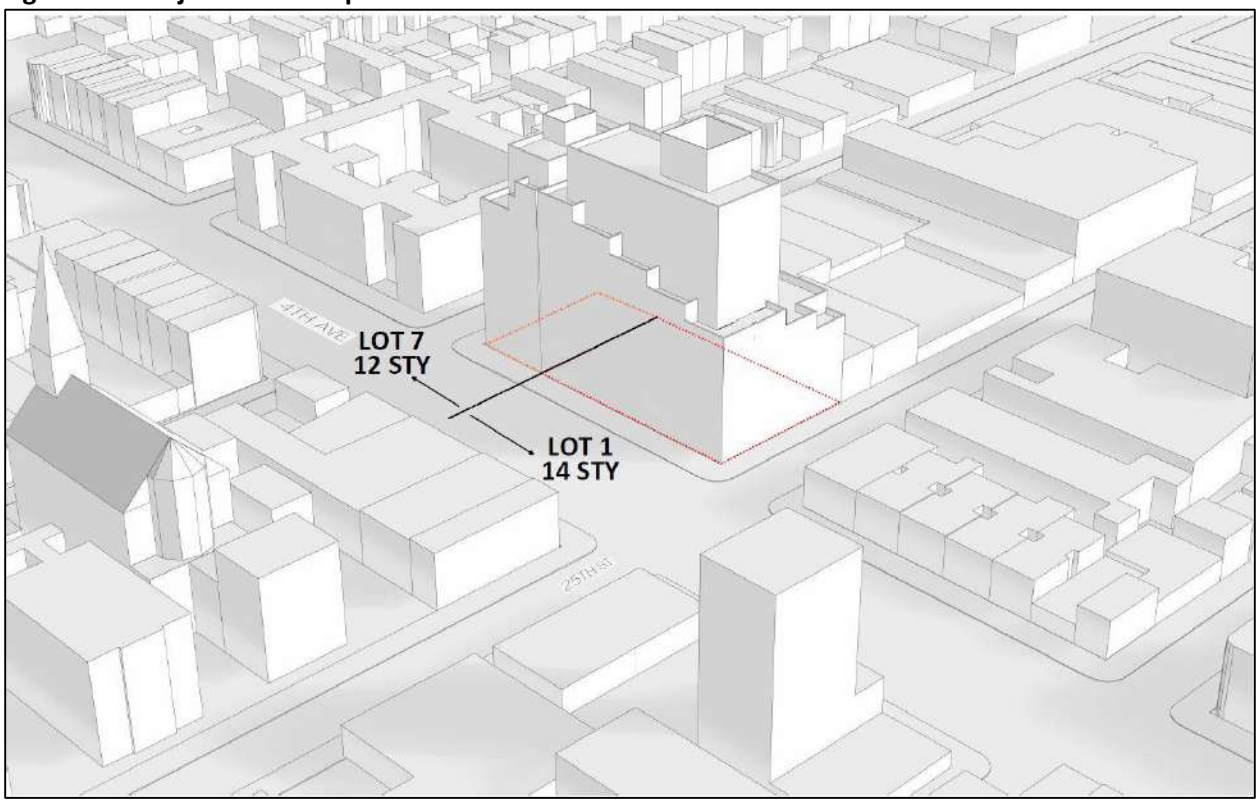
Legend

- Project Area
- 400-foot Radius
- Projected Development Site 1
- Projected Development Site 2

Land Uses

- 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

Figure F-2: Projected Development Sites 1 & 2



II. DETAILED 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 analysis.

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 PM2.5 NAAQS and 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 F-1.

Table F-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. The PVMRM accounts for the chemical transformation of NO emitted from the stack to NO_2 within the source plume using hourly ozone background concentrations. The one-hour NO_2 procedure with PVMRM module consist of the following three steps:

1. At each receptor, the model selects the highest-concentration hour from each day;

2. From this pool of 365 one-hour values (one from each day), the eighth highest NO_2 value from each year is selected, leaving one value per year; and

3. These five values, one from each year of a five-year period, are averaged together to produce the final number.

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 3 approach 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 obtained from 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.

Screening Analysis

Because Projected Development Site 2 is located less than 30 feet from the Projected Development Site 1, the *CEQR* screening procedure is not applicable, and a detailed dispersion analysis is required to estimate the potential impacts of the HVAC emissions of the shorter Projected Development Site 2 building on the taller Projected Development Site 1 building.

Detailed Analysis

The detailed dispersion modeling analyses used the latest version of the EPA's AERMOD dispersion model 8.1 (EPA version 18081). In accordance with *CEQR Technical Manual* guidance, analyses were conducted assuming stack tip downwash, urban dispersion surface roughness length, and elimination of calms. The latest five consecutive years of meteorological data were used. Along with Tier 1, AERMOD's PVMRM module was utilized for the one-hour NO_2 analysis to account for NOx to NO_2 conversion. Based on DEP recommendations, the in-stack NOx/NO_2 ratio for PVMRM module of 0.5 and the single missing ozone background value of 0.04 ppm were applied.

According to *CEQR* guidance (Page 17-37), if exhaust from the stack is affected by either the building on which the stack is located or a nearby structure(s), analysis should be conducted with and without building downwash, with Building Profile Input Program (BPIP) program employed to calculate building dimensions. Based upon Projected Development Sites 1 and 2 configurations, the BPIP PRIME program

has determined that a stack on Projected Development Site 2 is being subjected to wake effects from both buildings' structures for the various wind directions. Because wake effects from the proposed developments were evident, and stack emissions were influenced by the structures, BPIP PRIME incorporated the buildings' heights and widths in the dispersion model input so that building downwash effects was accounted for. Results of dispersion analysis without the effects of building downwash are also discussed.

Emissions

Emission rates were estimated as follows:

- As Projected Development Site 2 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 Projected Development Site 2 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; and
- The natural gas fuel usage factor 59.1 cubic foot per square foot per year (cf/sf/year) was obtained from *CEQR* Table US 1, 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 MMBtus per hour). Boiler size for Projected Development Site 2 was estimated based on assumption that all fuel would be consumed during the 100-days (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 F-2 provides pollutant emission rates from natural gas combustion in the boiler that were used in the dispersion analysis.

Table F-2: Pollutant Estimated Emission Rates

Building ID	Building [3]		Stack [4]		Total Floor Area	$PM_{2.5}$ Emission Rate[1]		NO_2 Emission Rate[2]	
	Hei	Elevation	Height	Elevation		24-hour	Annual	One-hour	Annual
	feet	feet	feet	feet	gsf	g/sec	g/sec	g/sec	g/sec
Site 2	135	168.4	138	171.4	41,525	9.69E-04	2.66E-04	1.28E-02	3.49E-03

Notes:

[1] $PM_{2.5}$ 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).

[2] NOx emission factor for natural gas is 100 lb/10^6 cubic feet for uncontrolled boilers (AP-42, Table 1.4-1).

[3] Height is above ground (datum) and elevation is how high the surface/ground is from mean sea level (datum), as per site plan (see Figure F-3).

[4] Stack height is 3 feet above the roof.

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 98^{th} 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 $\mu g/m^3$.

Development Configurations

Projected Development Site 1 is currently designed as a multi-tiered-structure with higher and lower tiers comprised of an 11-story, 148.4-foot elevated section immediately adjacent to Projected Development Site 2 (Tier 1), a 13-story 168.4-foot elevated section located next to a 148.4-foot tall section (Tier 2), and 14-story 178.4-foot tall main section, which is the tallest elevated central section (Tier 3), with a bulkhead on the roof that is 198.4-foot tall. There are also 5, 6, 7, 8, 9, and 10-stories elevated sections on western side of the structure adjacent to the central section, and lower elevated sections on eastern side of building structure adjacent to the central section.

Projected Development Site 2 is a 12-story building with an elevation of 148.4 feet and a bulkhead on the roof that is 168.4 feet tall. There are also 9, 10, and 11-story elevated sections on western side of the Projected Development Site 2 structure adjacent to the central section, and lower sections on eastern side of building structure (see Figure F-3).

A 3-D top view of Projected Development Site 1, as generated by the AERMOD 3-D Analyst in Google coordinates, is provided on Figures F-4 and F-5, with and without surrounding existing structures. All structure heights provided on Figure F-3 are elevations above mean sea level (datum).

Figure F-3: Projected Development Sites 1 and 2 Building Configuration Design

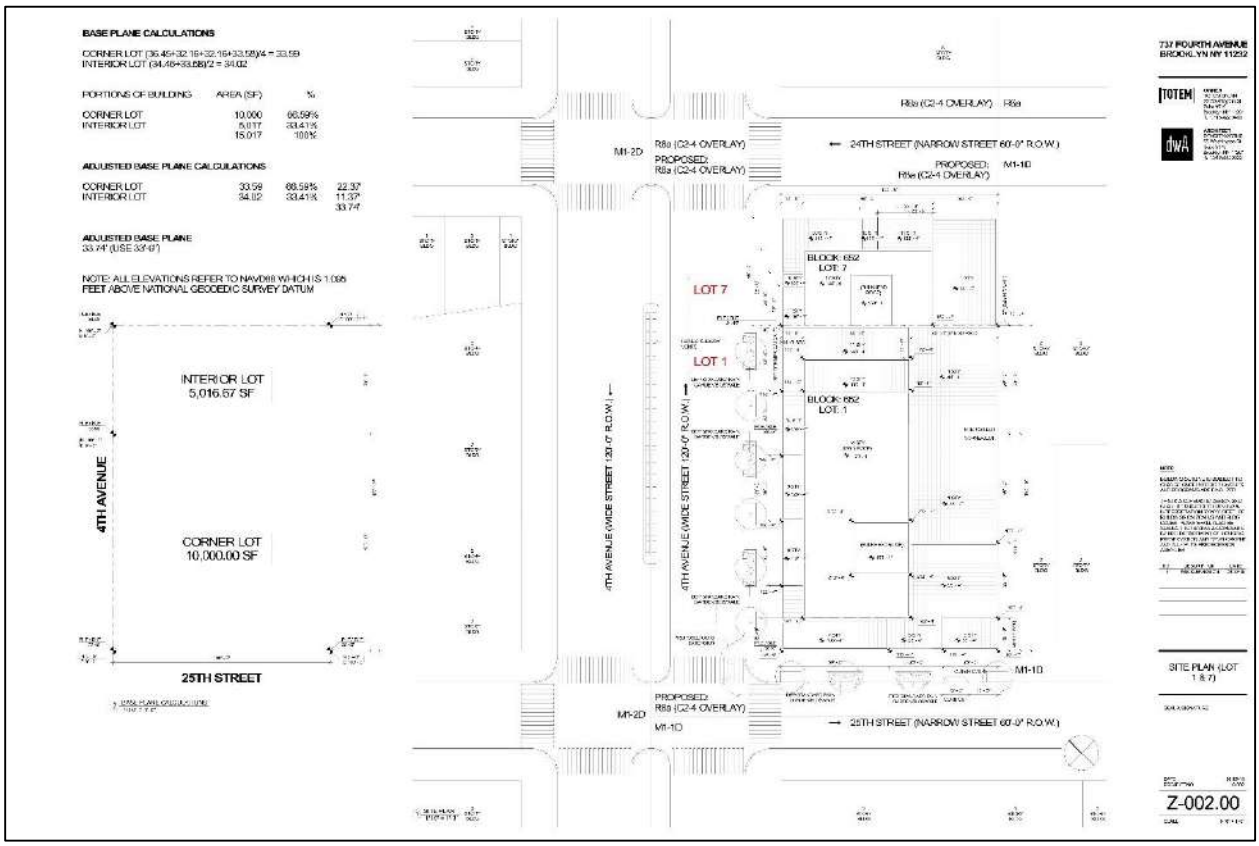


Figure F-4: Projected Development Site 1 with Surrounding Buildings in Google Coordinates

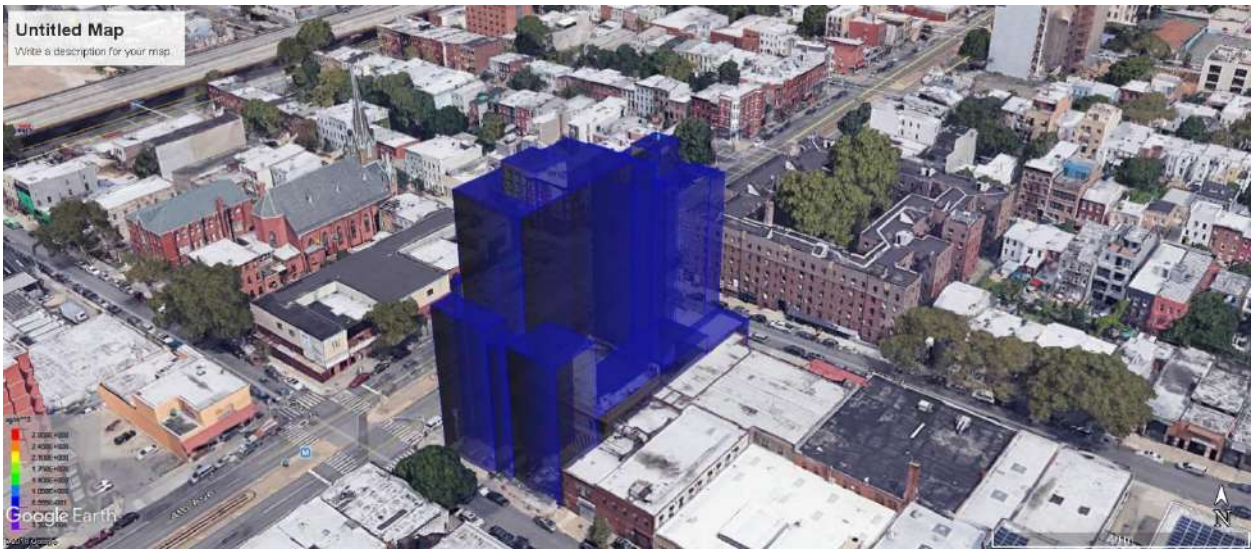
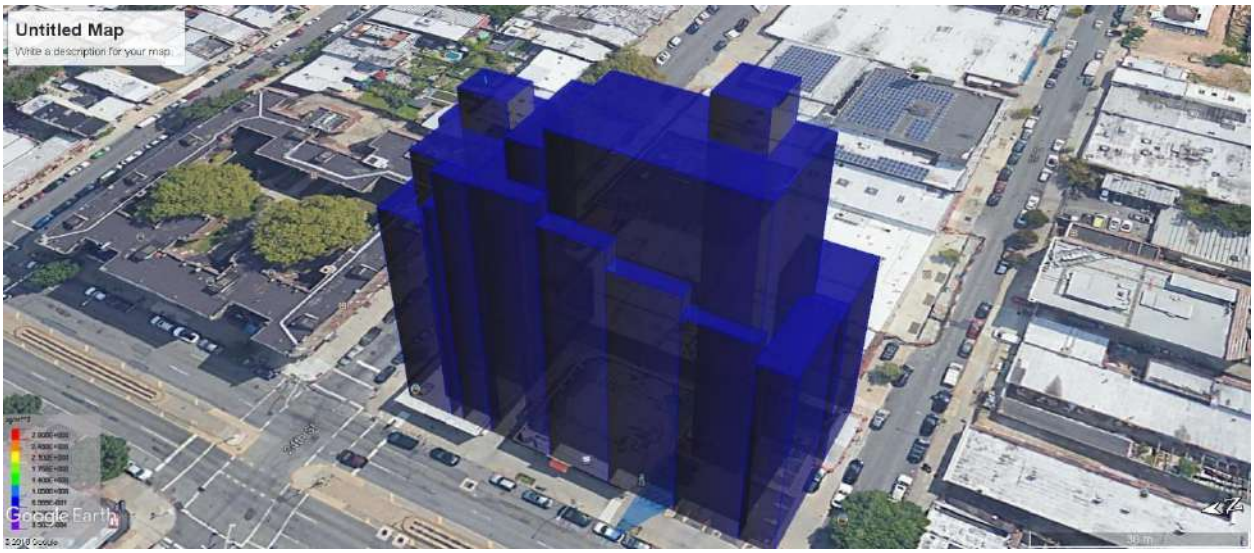


Figure F-5: Projected Development Site 1 Configuration in Google Coordinates



Stack Locations

Because the site design includes a roof bulkhead for the Projected Development Site 2 building, it was assumed that stack on Projected Development Site 2 would be located on this bulkhead, and would be, as per *CEQR* guidance, 3 feet above bulkhead -- at an elevation of 171.4 feet. The stack, therefore, would be higher than Tier 1 and Tier 2 of Projected Development Site 1 but lower than Tier 3, which has an elevation of 178.4 feet. Therefore, the highest potential impacts would most likely occur at the Tier 3 receptors.

Projected Development Site 2's stack was initially located at a minimum (ten feet) distance from the Lot 7 line (i.e., aligned with bulkhead on the southern border line) facing the Tier 1 section of Projected Development Site 1, which has elevation of 148.4 feet. The distance between the southern border bulkhead and the Tier 1 structure is 15 feet and, with stack 10 feet from southern border, the distance from the stack and frontline receptors on Tier 1 would be 25 feet, and the distance to the Tier 3 receptors would be about 40 feet. If exceedances of the *CEQR* significant impact criteria or the NAAQS were predicted, setbacks from the bulkhead's southern edge would be increased until compliance is achieved.

Receptors

Windows on Projected Development Site 1, which were all conservatively assumed to be operable, were considered as sensitive receptor sites for this analysis. Receptors were placed around all faces of the Tier 1, 2, and 3 sections in ten-foot increments, from the 1st floor extending up to the level of the upper windows of each Tier, which were assumed to be five feet below the roof elevation of each tier (particularly at a height of 173.4 feet for the Tier 3). In order to assure that maximum impacts are estimated, more than 1,000 receptors were placed on the building on Projected Development Site 1.

III. SUMMARY OF MODELING INPUTS

All modeling assumptions are provided in Table F-3.

Table F-3: 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)	2.65 million (2017) with population density more than 750
	Preprocessed by the AERMET meteorological preprocessor
Surface Meteorological Data	LaGuardia 2013-2017
Profile Meteorological Data	Brookhaven Station 2013-2017
$PM_{2.5}$ and 1-hr NO_2 Analysis	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

Downwash

Building downwash occurs as wind flows over and around buildings and impacts the dispersion of pollution from the exhaust stack. The presence of buildings, especially tall buildings, can substantially affect the initial dispersion of pollutants within the atmosphere. Turbulent zones can be created around these buildings that change the trajectory of the plume instead of allowing it to flow freely within the atmosphere.

Due to the complex configurations and sizes of the project buildings, and the proximity of these buildings to each other, a critical factor affecting the results of this analysis is downwash. As the AERMOD Building Profile Input Program (BPIP) shows, downwash affects the whole dispersion aerodynamic around Projected Development Sites 1 and 2, and affects the estimated concentrations so much that results with and without downwash are drastically different.

At the minimum (10 feet) stack distance from the lot line facing Projected Development Site 1, the 24-hour $PM_{2.5}$ impact with downwash affect included is about 5 times less than without downwash. The total 1-hour NO_2 concentration with downwash, using a conservative Tier 1 analysis, is less than the 1-hour NAAQS; without downwash, however, the maximum concentration significantly exceeds the 1-hour NO_2 NAAQS.

In accordance with *CEQR* requirements, results of analyses with and without the effects of downwash must be reported. The results of this analysis without downwash, therefore, are included in the summary table of the HVAC analysis.

However, since the Proposed Actions includes the construction of both buildings, and since there would be no emission source or receptors without the proposed buildings, only the modeling results that include downwash affects are appropriate for determining compliance with the applicable standards and

guidelines in this case. As such, the results presented for this analysis apply only to analyses that include downwash.

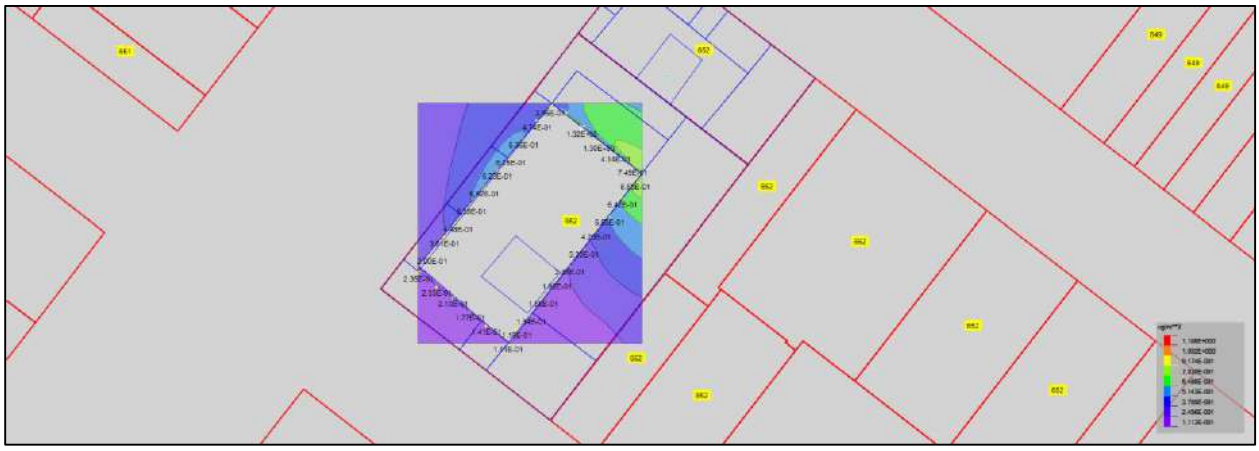
IV. RESULTS OF THE ANALYSIS

Results with Downwash

Although Tier 1 of Projected Development Site 1, which is adjacent to Projected Development Site 2 and Tier 2 of Projected Development Site 1, which is located next to Tier 1, could be potentially directly impacted from Projected Development Site 2's stack emissions, these impacts should be less because Projected Development Site 1's stack is located 3 feet above the bulkhead, and there would also be plume rise. However, the potential impacts on Tier 3 (i.e., the central section of Site 1) could be still significant because these receptors would be taller than the stack height (178.4 feet elevation), even with their placement 5 feet below roof height.

Results of the $PM_{2.5}$ analysis with Projected Development Site 2's stack located at the minimum 10-foot distance from the lot line facing Projected Development Site 1 Tier 1 are provided in Table F-4. As shown, the maximum estimated 24-hour $PM_{2.5}$ impact of 1.78 ug/m^3 and the maximum total concentration of 20.9 ug/m^3 (e.g., average impact of 1.32 ug/m^3 plus background value of 19.6 ug/m3) are less than the 24-hour *CEQR* significant impact value of 7.7 ug/m^3 and the 24-hour $PM_{2.5}$ NAAQS of 35 ug/m^3, respectively. The maximum annual average $PM_{2.5}$ impact and the maximum total concentration (with includes a background value of 8.2 ug/m^3) are 0.06 and 8.3 ug/m^3, respectively, which are less than *CEQR* annual significant impact value of 0.3 ug/m^3 and the annual $PM_{2.5}$ NAAQS of 12 ug/m^3. The highest impact occurs at the Tier 3 receptors at an elevation of 173 feet. The 24-hour $PM_{2.5}$ contour map of results is provided on Figure F-6.

Figure F-6: 24-hour $PM_{2.5}$ Contour Map



Therefore, $PM_{2.5}$ emissions from Projected Development Site 2's HVAC emissions would not cause significant impacts on Projected Development Site 1 with the stack located at the minimum distance of 10 feet from Lot 7 line. Based on these results, with downwash effects incorporated, no stack setback or E-designation would be required for a stack located on bulkhead of Projected Development Site 2 (at an

elevation of 168.4 feet). In addition, an analysis with fuel oil No. 2 burned in the HVAC system of Projected Development Site 2 (instead of natural gas) also shows that no $PM_{2.5}$ exceedances of the *CEQR* significant impact thresholds would occur. Therefore, no restriction on fuel use is warranted for Projected Development Site 2's HVAC system.

Table F-4: PM2.5 Analysis Results

Site No.	Receptor Building	Maximum 24-hour Impact	Maximum Annual Impact	CEQR Significant Impact Criteria	
				24-hour	Annual
Projected Development Site 2	Projected Development Site 1	µg/m³	µg/m³	µg/m³	µg/m³
		1.78	0.06	7.7	0.3
		24-hour Average Conc.	Annual Average Conc.	NAAQS	
				24-hour	Annual
		µg/m³	µg/m³	µg/m³	µg/m³
		20.9	8.3	35	12

Note: Includes 24-hr and annual PM2.5 background concentrations of 19.6 ug/m3 and 8.2 ug/m3, respectively.

Table F-5: NO_2 Analysis Results

Site No.	Receptor Building	1-hour Conc.	Annual Conc.	NAAQS 1-hr/Annual
		µg/m³	µg/m³	µg/m³
Projected Development Site 2	Projected Development Site 1	154.5	30.9	188/100

Note: The Tier 1 analysis includes 1-hour and annual NO_2 background concentrations of 112.2 ug/m^3 and 30.3 ug/m^3, respectfully.

The maximum estimated 1-hour NO_2 concentration at 10 feet minimum distance, even with most conservative Tier 1 analysis, is less than the 1-hour NO_2 NAAQS of 188 ug/m^3; the maximum annual NO_2 concentration at this location, including the background value, is also less than the annual NO_2 NAAQS of 100 ug/m^3. Therefore, NO_2 emissions from Projected Development Site 2's HVAC system emissions would not significantly impact Projected Development Site 1's receptors, even at the minimum distance from lot line facing Projected Development Site 1.

Results without Downwash

If downwash effects are not incorporated into the analysis (i.e., no physical buildings are assumed to exist), both the *CEQR* significant impact criteria and the 1-hour NO_2 NAAQS would be exceeded at the minimum 10-foot stack setback distance, and Projected Development Site 2's stack should be set back further away from the lot line facing Projected Development Site 1. Based on the results of iterative analysis, the setback distance should be at least 15 feet from the lot line (i.e., about 50 feet from Tier 3 of Projected Development Site 1) to eliminate potentially significant impacts.

This setback distance would result in the stack located on the far edge of the bulkhead structure, which leaves only a small area on the bulkhead (no more than 30%) to be used for the stack location. At this stack setback distance, the 24-hour maximum $PM_{2.5}$ impact is 6.74 ug/m^3, which is less than the 24-hour *CEQR* threshold value of 7.7 ug/m^3 and a maximum 1-hour NO_2 total concentration (with a Tier 3 analysis) of 163.6 ug/m^3, which is less than the 1-hour NO_2 NAAQS of 188 ug/m^3. Small deviations in the stack location, however, could result in exceedances of both the 1-hour NO_2 NAAQS and/or the $PM_{2.5}$ *CEQR* significant impact criteria. Without downwash considered, an E-designation would be necessary to place on Projected Development Site 2 that would restrict the stack location and require the exclusive use of

natural gas (as an analysis with fuel oil resulted in exceedances of the NO_2 NAAQS and/or the $PM_{2.5}$ *CEQR* significant impact criteria).

A summary of HVAC analysis with and without downwash effects at a 10 feet minimum distance is provided in Table F-6.

Table F-6: Summary of the HVAC Analysis Results (ug/m^3)

Pollutant	Impact	Background Conc.	Total Conc.	Evaluation Criteria	
				CEQR	NAAQS
$PM_{2.5}$					
24-hr $PM_{2.5}$	1.78/**7.82**	-	-	7.7	
	1.32/6.68	19.6	20.9		35
Annual $PM_{2.5}$	0.06/0.2	-	-	0.3	
	0.06	8.2	8.3		12
NO_2					
1-hr NO_2	42.3/**177**	112.2	154.6		188
Annual NO_2	0.6/1.96	30.3	30.9		100

Notes:
(1) Modeled concentrations are shown with/without downwash effects
(2) The value of 7.82 ug/m^3 exceeds the 24-hr PM2.5 CEQR significant impact threshold without downwash
(3) The value of 177, with the added background concentration of 112.2 ug/m^3, exceeds the 1-hr NO_2 NAAQS

V. CONCLUSION

The conclusions of dispersion analysis of the HVAC emissions associated with Projected Development Site 2 building (as included in the RWCDS) regarding potential impacts on the Projected Development Site 1 building are as follows:

1. A critical factor in determining the significance of potential impacts of the HVAC emissions from Projected Development Site 2 as they affect Projected Development Site 1 receptors is the downwash effect;

2. With downwash effect incorporated into the analysis, the potential air quality impacts are not considered to be significant – even with Projected Development Site 2's stack located a minimum (10 foot) distance from Projected Development Site 1, and with either natural gas or fuel oil.

3. Without downwash effects considered, compliance with the applicable standards could only be achieved with Projected Development Site 2's stack setback on bulkhead, and E-designations would be required for the stack location to be set back and to exclude the use of fuel oil.

Attachment G

Noise

I. INTRODUCTION

This attachment assesses the potential for the Proposed Actions to result in significant adverse noise impacts. The Applicant, 737 Fourth Avenue, LLC, is seeking approval of a zoning text and zoning map amendment from the City Planning Commission (CPC) to rezone an existing M1-D district to R8/C2-4, to designate the Project Area as part of the Special Enhanced Commercial District 1 (EC-1), and to designate the Project Area as a Mandatory Inclusionary Housing (MIH) Area (collectively, the "Proposed Actions"). Approval of the Proposed Actions would facilitate the development of two different sites resulting in the total development of 189 dwelling units (DUs) and 12,016 gsf of ground floor retail uses in the Greenwood Heights neighborhood of Brooklyn.

As discussed in Attachment B, "Supplemental Screening," the Proposed Actions would introduce new sensitive uses within the Project Area. As the Proposed Actions would create new noise-sensitive uses within the Project Area, 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 was not warranted.

II. PRINCIPAL CONCLUSIONS

Noise from the increased traffic volumes generated by the Proposed Actions would not cause significant adverse noise impacts as the relative increases in noise levels would fall below the applicable 2014 *City Environmental Quality Review (CEQR) Technical Manual* significant adverse impact threshold (3.0 dBA).

To ensure acceptable interior noise levels for the Project Area, noise attenuation specifications would be mandated through the assignment of a (E) designation (E-XXX) assigned to the tax lots expected to be redeveloped as a result of the Proposed Actions. The requirements of the (E) designation resulting from the noise analysis, outlined in Section VIII of this attachment, state that the building facades of future residential and commercial uses on Projected Development Sites 1 and 2 must provide 31.0 dBA of composite window/wall attenuation for future building facades fronting Fourth Avenue as well as any façades facing 24th and 25th streets within 50 feet of Fourth Avenue,

With implementation of the attenuation levels required pursuant to the (E) designation, the Proposed Actions would provide sufficient attenuation to achieve the interior noise level guidance of 45 dBA for residential uses. Therefore, the Proposed Actions would not result in any significant adverse noise impacts related to building attenuation requirements.

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 Level (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 1 Hz equals 1 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 G-1.

Table G-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

Source: *2014 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 G-2 shows the average ability of an individual to perceive changes in noise. Generally, changes in noise levels less than 3 dBA are barely perceptible to most listeners. However, as illustrated in Table G-2, 5 dBA changes are readily noticeable. 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table G-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, June 1973.*

Noise Descriptors Used in Impact Assessment

Because the sound pressure level unit, dBA, describes a noise level at just one moment, and very few noises are constant, other ways of describing noise over extended periods 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., 1 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 1, 10, 50, 90 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 one-hour equivalent continuous noise level ($L_{eq\ (1h)}$ in dBA), the tenth percentile level L_{10} and the day-night average sound level L_{dn} were selected as the noise descriptors for the purposes of this analysis. 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.

Applicable Noise Codes and Impact Criteria

New York City Noise Code

The New York City Noise Control Code, 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. The New York City Department of Environmental Protection (DEP) has set external noise exposure standards. These standards are shown on the following page in Table G-3.

Noise Exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. The standards shown 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 on the following page in Table G-4.

Table G-3
Noise Exposure Guidance 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 ≤ 60 dBA ----------		---------- 60 < Ldn ≤ 65 dBA ----------		(1) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn		---------- Ldn ≤ 75 dBA ----------
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 65 dBA		65 < L_{10} ≤ 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} ≤ 70 dBA		70 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 70 dBA		70 < L_{10} ≤ 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: New York City Department of Environmental Protection (adopted policy 1983).

Notes: (i) 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 FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Table G-4:
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise level with proposed development	$70<L_{10}\leq73$	$73<L_{10}\leq76$	$76<L_{10}\leq78$	$78<L_{10}\leq80$	$80<L_{10}$
Attenuation	(I) 28 dB(A)	(II) 31 dB(A)	(III) 33 dB(A)	(IV) 35 dB(A)	$36 + (L_{10} - 80)^{B}$ dB(A)

Note: [A] The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.
[B] Required attenuation values increase by 1 dB(A) increments for L_{10} values greater than 80 dBA.
Source: New York City Department of Environmental Protection / 2014 *CEQR Technical Manual*

IV. NOISE PREDICTION METHODOLOGY

Proportional Modeling

Proportional modeling was used to determine No-Action and With-Action noise levels at the receptor locations adjacent to the Project Area, 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 PCE values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of thirteen cars, one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of eighteen 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.

To calculate the future 2024 No-Action noise levels, an annual background growth rate of 0.50 percent for years 1 through 5, and 0.25 percent for year six, was applied to the PCE noise values based on counted vehicles.[1] In order to obtain the necessary With-Action PCE values to calculate the With-Action noise levels, a trip generation was prepared based on the proposed/projected amount of incremental residential units and retail use generated by the 2024 With-Action developments, utilizing existing modal split data for the census tract within which the Project Area is located.[2] This trip generation with the 2024 With-Action traffic increment assignments was converted into PCE values and added to the calculated No-Action PCE values for the weekday AM, MD, and PM peak hours. For conservative analysis purposes, the number of incremental vehicles generated by the Proposed Actions were added to each noise monitoring location.

V. EXISTING CONDITIONS

As shown in Figure G-1, the Project Area is composed of two projected development sites and contains three different frontages. The Project Area is bound to the north and south by 24th and 25th Streets, respectively. Each of these streets are one-way streets - 60 feet in width with parallel parking lanes on both sides of the street. 24th Street carries traffic westbound and 25th Street carries traffic eastbound. Along the western frontage of the Project Area is Fourth Avenue, a 120-foot wide, two-way, four-lane road that carries traffic north-south. Fourth Avenue includes a concrete median and parking lanes on both sides of the street.

Selection of Noise Receptor Locations

As discussed above, local traffic is the dominant source of noise in the vicinity of the Project Area. The noise receptor locations were selected to be along the frontage of the future buildings developed as a result of the Proposed Actions. The assumption was made that all windows on all frontages of the buildings would be operable. The selected receptor locations at the Project Area are presented in Figure G-1.

Noise Monitoring

Along the Project Area's three frontages, 20-minute spot measurements of existing noise levels were conducted at each of the receptor locations for each of the three noise analysis time periods - weekday AM peak hour (8:00AM to 9:00AM), weekday midday (MD) peak hour (12:00PM to 1:00PM), and weekday PM peak hour (5:00PM to 6:00PM). Noise monitoring was performed on Wednesday, October 18th, 2018 and Thursday, January 17th, 2019. On October 18th, the weather was partly cloudy with a high temperature of 50 ºF. On January 17th, 2019, the weather was cloudy with a high temperature of 33 ºF.

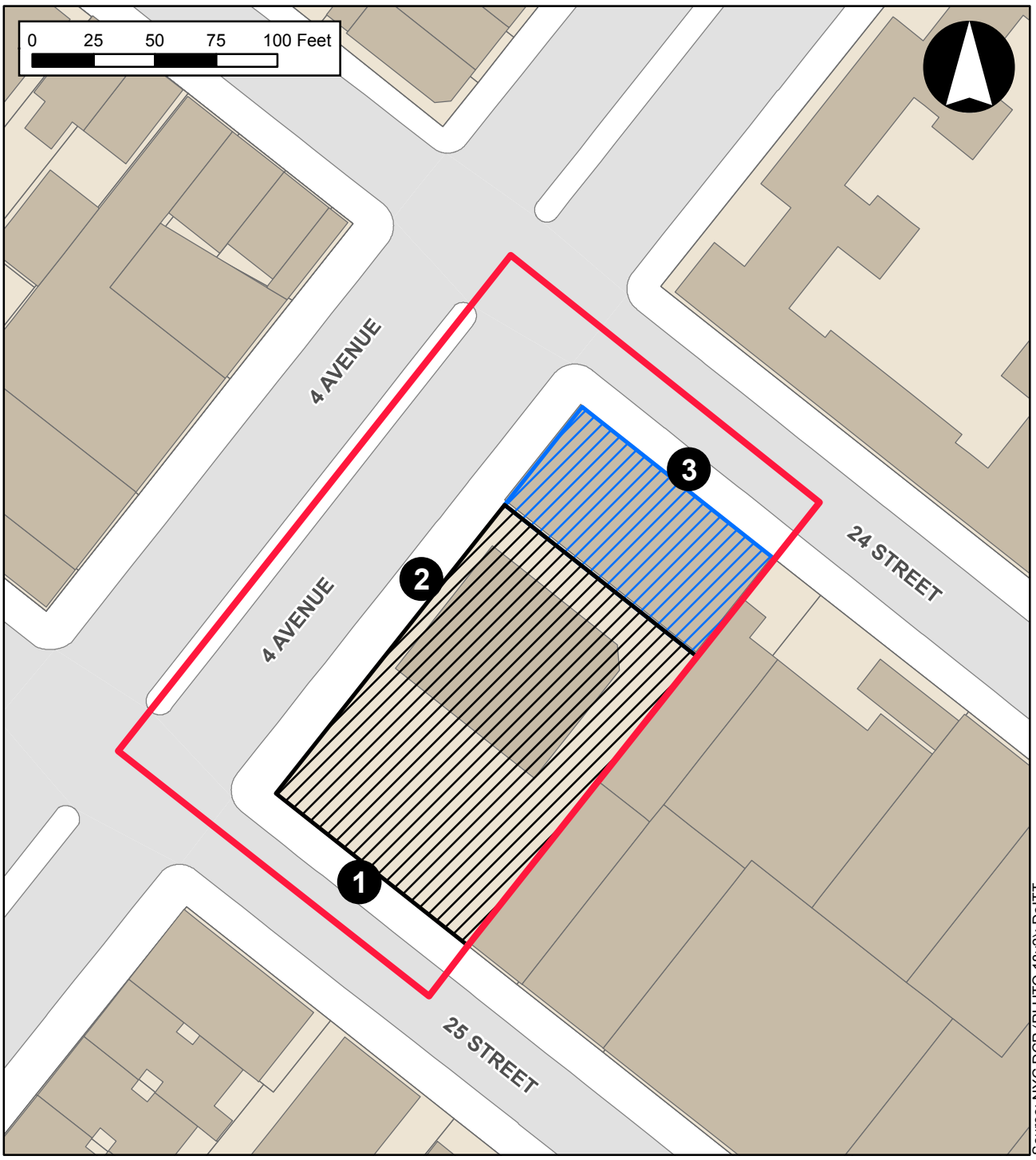
Equipment Used During Noise Monitoring

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 the American National Standards Institute) sound level meter. This assembly was mounted at a height of 5 feet above the ground surface on a tripod and at least 6 feet away from any sound-reflecting surfaces to avoid major interference with source sound

[1] The background growth rate is based on information provided in Table 16-4 of the 2014 *CEQR Technical Manual.*

[2] Based on American Community Survey (ACS) Means of Transportation to Work 2013-2017 5-Year data for Brooklyn Census Tracts 101 and 145.

Figure G-1
Noise Monitor Locations



Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- Existing Buildings
- 1 Noise Monitor Locations

level that is being measured. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. Measurements at the three receptor locations were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, 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, irregular aircraft flyovers, etc.) was excluded from the measured noise levels. Weather conditions were noted to ensure a true reading as 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 the Noise Receptor Locations

Measured Noise Levels

The noise monitoring results are shown in Table G-**5**. Area traffic was the dominant source of noise at the receptor location. The existing noise levels reflect the moderate level of vehicular activity on the roadways adjacent to the Project Area, with the highest existing L_{10} noise levels observed at receptor location 2 (73.0 dBA) during the AM monitoring, placing this receptor location in the "Marginally Unacceptable (II). At receptor location 1 the highest L_{10} value was recorded in the MD peak hour (68.3 dBA), placing the receptor location in the Marginally Acceptable CEQR Noise Exposure category. Finally, the highest L_{10} value at receptor location 3 was measured in the PM peak hour (66.6 dBA), putting receptor location 2 in the Marginally Acceptable (CEQR Noise Exposure category.

Table G-5
Existing Noise Levels (in dBA) at the Monitoring Locations

Receptor Location	Time	L_{eq}	L_{max}	L_{min}	L_1	L_{10}[2]	L_{50}	L_{90}	CEQR Noise Exposure Category
1	AM	65.5	82.6	58.7	75.7	67.3	62.7	60.6	Marginally Acceptable
	MD	65.6	83.3	54.2	75.8	**68.3**	62.5	58.4	
	PM	63.6	80.8	55.4	71.2	65.7	62.3	58.6	
2	AM	70.4	90.2	58.0	78.9	**73.0**	68.3	62.9	Marginally Unacceptable (II)
	MD	67.0	85.0	54.3	77.5	69.1	64.0	57.5	
	PM	68.8	86.6	55.7	78.6	71.0	67.0	59.5	
3	AM	65.1	83.4	59.0	72.8	66.5	62.5	60.9	Marginally Acceptable
	MD	62.6	79.2	54.3	71.3	65.0	60.7	58.0	
	PM	63.5	79.3	50.2	71.3	**66.6**	62.1	53.1	

Notes: Field measurements were performed by Philip Habib & Associates on October 18th, 2018 and January 17th, 2019.
[1] Refer to Figure G-1 for noise monitoring receptor location.
[2] The highest L_{10} noise levels at each monitoring location are shown in **bold**.

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

Using the methodology described in Section IV, "Noise Prediction Methodology," future noise levels in the No-Action condition were calculated for the three analysis periods for the 2024 Build year. Table G-6 shows the measured existing noise levels, as well as the No-Action PCE values and the No-Action noise levels at the receptor location.

Table G-6
Future 2024 No-Action Noise Levels and Total PCE Values at Receptor Locations (in dBA)

Noise Receptor Location	Time	Existing PCEs	No-Action PCEs	Existing L_{eq}	No-Action L_{eq}	Change[1]	No-Action L_{10}[2]	CEQR Noise Exposure Category
1	AM	375.0	385.4	65.5	65.6	0.12	67.4	Marginally Acceptable
	MD	264.0	271.3	65.6	65.7	0.12	**68.4**	
	PM	120.0	123.3	63.6	63.7	0.12	65.8	
2	AM	3627.0	3727.9	70.4	70.5	0.12	**73.1**	Marginally Unacceptable (II)
	MD	3153.0	3240.7	67.0	67.1	0.12	69.2	
	PM	2547.0	2617.8	68.8	68.9	0.12	71.1	
3	AM	447.0	459.4	65.1	65.2	0.12	66.6	Marginally Acceptable
	MD	171.0	175.8	62.6	62.7	0.12	65.1	
	PM	156.0	160.3	63.5	63.7	0.12	**66.7**	

Notes: All PCE and noise value are shown for a weekday.
[1] No-Action Leq - Existing Leq
[2] The highest L_{10} noise levels at each monitoring location are shown in **bold**.

Comparing future No-Action noise levels with existing noise levels, the increases in L_{eq} noise level would equal approximately 0.12 dBA during each analysis period. Increases of this magnitude would be barely perceptible, and based upon the *CEQR Technical Manual* impact criteria, would not be significant. The projected No-Action L_{10} noise levels would remain in the same respective CEQR Noise Exposure categories as under existing conditions.

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

Using the methodology described in Section IV, "Noise Prediction Methodology future noise levels in the With-Action condition were calculated for the three analysis periods at each of the receptor locations for the 2024 Build year. As shown in Table G-7, after accounting for additional traffic introduced by the Proposed Actions, the maximum projected L_{10} noise level in the With-Action condition would be 69.1 dBA at receptor location 1 during the weekday midday peak hour, 73.2 dBA at receptor location 2 during the weekday AM peak hour, and 67.3 dBA at receptor location 3 during the weekday PM peak hour. Under With-Action conditions, receptor locations 1 and 3 would remain within the "Marginally Acceptable" CEQR Noise Exposure category and receptor location 2 would remain in the "Marginally Unacceptable (II)" CEQR Noise Exposure category, as under existing and No-Action conditions.

Comparing the future With-Action noise levels with No-Action noise levels, increases in noise levels would range between 0.03 dBA and 0.93 dBA. Increases of this magnitude would not be perceptible as they are less than 3.0 dBA, and based upon CEQR impact criteria would not be significant. As the noise levels at the receptor locations would experience changes of less than 3.0 dBA in all peak hours, the

overall changes to noise levels as a result of the Proposed Actions would not result in any significant adverse impacts.

Table G-7
Future 2024 With-Action Noise Levels and Total PCE Values at Receptor Locations (in dBA)

Receptor Location	Time	With-Action PCEs	No-Action L_{eq}	With-Action L_{eq}	Change[1]	With-Action L_{10}[2]	CEQR Noise Exposure Category
1	AM	430.4	65.6	66.1	0.48	67.9	Marginally Acceptable
	MD	313.3	65.7	66.4	0.63	**69.1**	
	PM	144.3	63.7	64.4	0.68	66.5	
2	AM	3772.9	70.5	70.6	0.05	**73.2**	Marginally Unacceptable (II)
	MD	3282.7	67.1	67.2	0.06	69.3	
	PM	2638.8	68.9	69.0	0.03	71.1	
3	AM	504.4	65.2	65.6	0.41	67.0	Marginally Acceptable
	MD	217.8	62.7	63.7	0.93	66.1	
	PM	181.3	63.7	64.2	0.53	**67.3**	

Notes: All PCE and noise value are shown for a weekday.
[1] With-Action Leq – No-Action Leq
[2] The highest L_{10} noise levels at each monitoring location are shown in **bold**.

VIII. ATTENUATION REQUIREMENTS

As shown above in Table G-4, the *CEQR Technical Manual* has set noise attenuation requirements for buildings based on exterior noise levels. Recommended noise attenuation values for buildings are designed to maintain a maximum interior noise level of 45 dBA or lower for residential and community facility uses and 50 dBA or lower for commercial uses, and are determined based on exterior L_{10} noise levels. As noted in Table G-4, additional attenuation measures would be required at the site wherever exterior noise levels exceed 70 dBA. As the maximum exterior L_{10} noise level at receptor location 2 would exceed 70 dBA in the With-Action condition, attenuation is required for the Project Area. As shown in Figure G-2, the frontage of Projected Development Sites 1 and 2 along Fourth Avenue, as well as the portions of frontage along 24th and 25th streets within 50 feet of Fourth Avenue, will require a window/wall attenuation of 31 dBA, in accordance with *CEQR Technical Manual* guidance.

(E) Designation

An (E) designation for noise provides a notice of the presence of an environmental requirement pertaining to high ambient noise levels on a particular tax lot. If an area is proposed to be rezoned, and the accompanying environmental analysis indicates that development on a property may be adversely affected by noise, then an (E) designation for window/wall attenuation and alternate means of ventilation may be placed on the property by the lead agency in order to address such issues in conjunction with any new development or new use of the property. For new developments, or enlargements of existing buildings, or changes in use, the NYC Department of Buildings will not issue a building permit until the environmental requirements of the (E) designation are satisfied. The Office of Environmental Remediation (OER) administers the (E) Designation Environmental Review Program.

To avoid any potential impacts associated with noise on the Project Area (Block 652; Lots 1 and 7), as part of the Proposed Actions, an (E) designation for noise would be recorded against each of the projected development sites. The text for the (E) designation E-XXX will be as follows:

Block 652, Lot 1 (Projected Development Site 1):

To ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed-window condition with a minimum of 31 dBA of composite window/wall attenuation on façades facing Fourth Avenue or facades facing 24th Street or 25th Street within 50 feet from Fourth Avenue to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

Block 652, Lot 7 (Projected Development Site 2):

To ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed-window condition with a minimum of 31 dBA of composite window/wall attenuation on all facades facing Fourth Avenue or facades facing 24th Street or 25th Street within 50 feet from Fourth Avenue to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses. In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

Per the (E) designation requirements, in order to receive a Certificate of Occupancy from the NYC Department of Buildings, the Proposed Actions must comply with these required composite window/wall attenuation values in order to maintain proper interior noise levels. With this institutional control in place, the Proposed Actions would not result in any significant adverse noise impacts related to building attenuation and no further analysis is necessary.

IX. OTHER NOISE CONCERNS

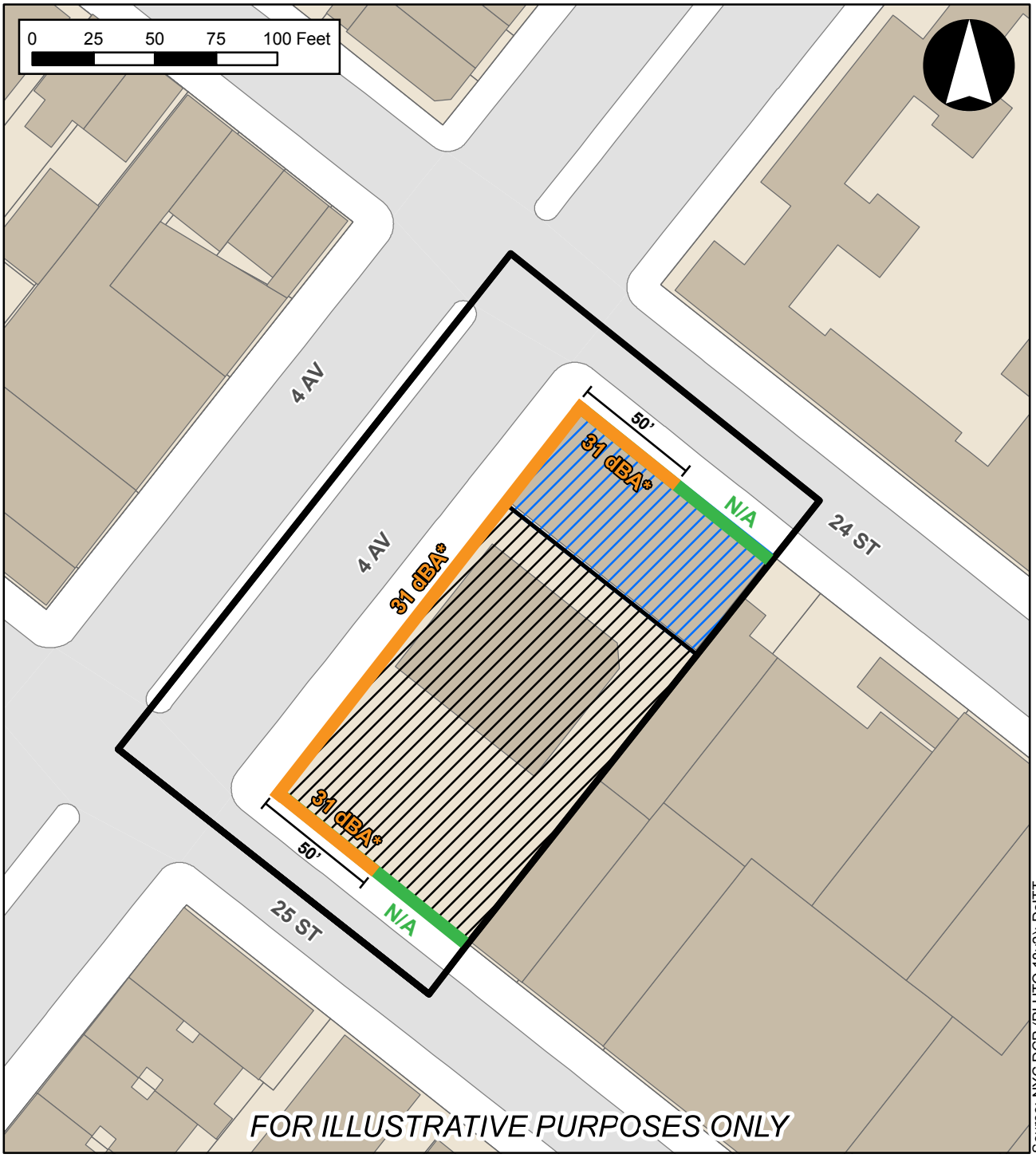
Mechanical Equipment

No detailed designs of the building's mechanical systems (i.e., heating, ventilation, and air conditioning systems) are available at this time. However, those systems will 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 NYC DOB Building Code) and to avoid producing levels that would result in any significant increase in ambient noise levels.

Train Noise

An initial train noise impact screening analysis would be warranted if a new receptor would be located within 1,500 feet of existing rail activity and have a direct line of sight to that activity. As the Project Area is not within 1,500 of an existing rail line nor does the site have a direct line of sight to a rail activity, no initial train noise impact screening analysis is warranted.

Noise Attenuation Requirements



Legend

- Project Area
- Projected Development Site 1
- Projected Development Site 2
- Existing Buildings

CEQR Window/Wall Attenuation Requirements

- N/A
- 31 dBA

*Attenuation requirements for commercial uses would be 5 dBA less.

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 Project Area is not within one mile of an existing flight path, no initial aircraft noise impact screening analysis is warranted.

Appendix I

Phase 1 Environmental Site Assessment (ESA):

Brooklyn Block 652, Lot 1 (Executive Summary)

&

Brooklyn Block 652, Lot 7 (Executive Summary)

737-747 4TH AVENUE
BROOKLYN, NY
BLOCK 652, LOT 1

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
(ASTM 1527-13/40 CFR PART 312)

PREPARED FOR:

Totem
55 Washington St., Suite 710
Brooklyn, NY 11201

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Jennifer Lewis, PG, Senior Project Manager — JenniferL@pwgrosser.com
Lisa Schreiner, Project Coordinator — LSchreiner@pwgrosser.com

PWGC Project Number: TOT1801

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UPDATED AUGUST 2018

PHASE I ENVIRONMENTAL SITE ASSESSMENT
737-747 4TH AVENUE, BROOKLYN, NY

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APPENDICES

1.0 EXECUTIVE SUMMARY

Totem (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Phase I Environmental Site Assessment (ESA) for the property located at 737-747 4th Avenue in Brooklyn, NY. The purpose of the Phase I ESA was to identify and evaluate the presence of Recognized Environmental Conditions (RECs) at the subject site. RECs are the presence or likely presence of any hazardous substance or petroleum product under conditions that indicate an existing release, a past release or material threat of a release of any hazardous substance or petroleum product into structures on the property or into the ground, groundwater or surface water of the property.

The subject property consists of one parcel located at 737-747 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The site is located in Kings County. The property is identified in the Brooklyn Tax Map as Block 652, Lot 1.

A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**; photos of the site are included in **Appendix A**.

The subject property measures approximately 15,017 square feet and is improved with a Dunkin Donuts and an asphalt paved parking lot.

Work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process), 40 Code of Federal Regulations (CFR) Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule) and PWGC's proposal for services.

PWGC evaluated the findings associated with the subject property and identified two RECs, two HRECs and no CRECs with respect to the subject property. Conditions determined to be RECs are detailed below:

- The site was historically utilized as a gasoline service station and auto repair shop for approximately 8 decades. This long history of usage has resulted in the site's inclusion in several environmental databases (USTs, LTANKS, and Liens) and the installation of numerous monitoring wells throughout the subject property and surrounding areas related to an active spill being investigated and remediated by the NYSDEC. Information from the NYSDEC indicates that there was likely some minor gasoline

contamination in the soils beneath the site and that there is gasoline contamination in the groundwater beneath the site. It is unlikely that the plume of oil associated with spill #93-05122 originated from the subject property; however, there is the potential that the gasoline impact in the groundwater is originating from the subject property and/or other nearby properties. The presence of gasoline contamination beneath the site is considered a REC.

- The two closed on-site spill numbers appeared to be minimal in nature and actual spills or leaks of significant product was not identified. Due to the closed status of these spills, they are HRECs.
- Several off-site properties have been identified that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property, most notably in the form of spill #93-05122. Due to the open status of these spills and their known migration onto the subject property, their presence is considered a REC.

Based on the identified RECs, PWGC recommends a Phase II ESA be performed at the site to determine the extent of the petroleum contamination migrating beneath the subject property and to determine if the subject property is a contributing party to the contamination.

Based upon an August 13, 2018 phone conversation between PWGC and the NYSDEC Project Manager for Spill #93-05122, it is understood that the spill and the associated project identification number (PIN) used for payment to the NYSDEC contractors will be closed following final payment on outstanding contractor invoices. A new PIN was opened, effective July 2, 2018, relating to Spill #16-10374 at 207 25th Street, the neighboring property to the subject property. This reflects NYSDEC's understanding that the contamination identified at the subject site is migrating beneath the subject site from an up-gradient source.

2.0 INTRODUCTION

2.1 Purpose

Totem (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Phase I Environmental Site Assessment (ESA) for the property located at 737-747 4th Avenue in Brooklyn, NY. The purpose of the Phase I ESA was to identify and evaluate the presence of Recognized Environmental Conditions (RECs) at the subject site. RECs are the presence or likely presence of any hazardous substance or petroleum product under conditions that indicate an existing release, a past release or material threat of a release of any hazardous substance or petroleum product into structures on the property or into the ground, groundwater or surface water of the property.

2.2 Scope of Services

The assessment consisted of a visual inspection of the site and surrounding areas, interviews, a review of historical information and aerial photographs, and a review of pertinent local, state, federal and facility records. Environmental Data Resources (EDR) of Shelton, Connecticut provided the following: a database search of environmental compliance records of sites within an ASTM standard radius of the property, a Sanborn fire insurance map search, historical aerial photograph search and a historical telephone directory search.

PWGC reviewed the environmental database report compiled by EDR as a part of the assessment. The purpose of the review was to identify reported listings for the subject property or other properties in the site vicinity. Databases reviewed included federal and state lists of known or suspected contaminated sites, lists of known handlers or generators of hazardous waste, lists of known waste disposal facilities, and lists of aboveground and underground storage tanks (ASTs and USTs). PWGC's review of the database has been incorporated into this report along with a copy of the EDR report.

The work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process), 40 CFR Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule) and PWGC's proposal for services.

2.3 Definitions

1. RECs are the presence or likely presence of any hazardous substance or petroleum product in, on, or at a property: (1) due to any release to the environment; (2) under the conditions indicative of a release to

the environment; or (3) under conditions that pose a material threat of a future release to the environment.

2. Historic RECs (HREC) are identified as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, activity or use limitations (AULs), institutional controls, or engineering controls).
3. Controlled RECs (CREC) are identified as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a No Further Action (NFA) letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).
4. A *de minimus* condition generally does not present a threat to human health or of the environment, and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimus* conditions are not RECs nor CRECs.

2.4 Significant Assumptions

PWGC has made the following significant assumptions in the preparation of this report:

1. Groundwater Flow Direction – Based upon regional groundwater elevation maps, local topography, and environmental reports for the subject property and surrounding area, regional groundwater flow direction appears to be toward the northwest. The presence of the adjacent subway line along 4th Avenue may have an impact on the groundwater flow and depth to groundwater.
2. Regulatory Records Information - PWGC assumes that all information provided by EDR regarding the regulatory status of facilities within the ASTM Standard approximate minimum search distance is complete, accurate, and current.
3. Other - PWGC assumes that all information provided through interviews is complete and unbiased.

2.5 Limitations and Exceptions

The conclusions presented in this report are professional opinions based on the data described in this report. These opinions have been arrived at in accordance with currently accepted engineering and hydrogeologic standards and practices applicable to this location, and are subject to the following inherent limitations:

1. The data presented in this report are from visual inspections, examination of records in the public domain, and interviews with individuals having information about the site. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration of the site, analysis of data, and re-evaluation of the findings, observations, and conclusions presented in this report.
2. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. The scope of work was defined by the request of the client.
3. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported, findings, observations, or conclusions. These are based solely upon site conditions in existence at the time of the investigation, and other information obtained and reviewed by PWGC.
4. PWGC's Phase I ESA report presents professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, or regulations, or policies of federal, state, or local government agencies. PWGC does not assume liability for financial or other losses or subsequent damage caused by or related to any use of this document.
5. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such.
6. This report is based, in part, on information supplied to PWGC by third-party sources. While efforts have been made to substantiate this third-party information, PWGC cannot attest to the completeness or accuracy of information provided by others.

2.6 Special Terms and Conditions

Authorization to perform this assessment was given by a proposal for services between Totem and PWGC.

2.7 User Reliance

This report was prepared for the exclusive use of Totem. PWGC assumes no liability for use of this report by any person or entity other than those for which it was prepared.

2.8 Data Gaps

Any data gaps identified herein, as defined by ASTM Practice E 1527-13 § 3.2.20, are not considered to have significantly affected the ability to identify RECs in connection with the subject property and do not alter the conclusions of this report.

One data gap was identified as the property was undeveloped in 1906 and the next source of information indicated that the property was developed in 1924 as a gasoline service station. Based upon property development patterns during that time period, it is likely that the site remained undeveloped until the construction of the gasoline station; therefore, this data gap does not alter the conclusions of this report.

3.0 PROPERTY DESCRIPTION AND PHYSICAL SETTING

3.1 Location and Legal Description

The subject property consists of one parcel located at 737-747 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The site is located in Kings County. The property is identified in the Brooklyn Tax Map as Block 652, Lot 1.

A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**; photos of the site are included in **Appendix A**.

3.2 Site Description and Improvements

The subject property measures approximately 15,017 square feet and is improved with a Dunkin Donuts and an asphalt paved parking lot.

3.2.1 Municipal Services and Utilities

Utility services are provided to the property as follows:

- Heating/Cooling System – Heat is powered by natural gas, two cooling units are located on the roof.
- Water Supply – The property is connected to the municipal water supply system.
- Sanitary System – The site is connected to the municipal sewer system.
- Electric – Provided by Consolidated Edison

3.3 Physical Setting

The topography of the site and surrounding area was reviewed from the USGS 7.5-minute series topographic map for the Brooklyn quadrangle. The property elevation is approximately 35 feet above the National Geodetic Vertical Datum (NGVD). Regional physiographic conditions are summarized below.

3.3.1 Regional Geology / Hydrogeology

The geologic setting of Long Island is well documented and consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd sand confined by the Raritan Clay Member. The Lloyd sand is an aquifer and consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan Clay is a solid and silty clay with: few lenses of sand and gravel; abundant lignite and pyrite; and gray, red or white in color.

Above the Raritan Clay lies the Magothy Formation. The Magothy Aquifer consists of layers of fine to coarse sand of moderate to high permeability, with inter-bedded lenses of silt and clay of low permeability resulting in

areas of preferential horizontal flow. Therefore, this aquifer generally becomes more confined with depth. The Magothy Aquifer is overlain by the Upper Glacial Aquifer. The Upper Glacial Aquifer is the water table aquifer at this location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and brown clay. This aquifer extends from the land surface to the top of the Magothy and, therefore, is hydraulically connected to the Magothy Aquifer.

3.3.2 Local Hydrogeology

Based upon the extensive number of reports related to spills in the area, the depth to groundwater beneath the site is approximately 22 feet below existing grade. Regional groundwater flow is estimated to be toward the northwest. The presence of an adjacent subway line along 4th Avenue may impact the groundwater flow and depth to groundwater.

Based upon information contained within the EDR report, there are no public water supply wells within a one-mile radius of the subject property.

3.3.3 Flood Potential

PWGC reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) to determine if the subject property is located within the 100-year or 500-year flood zones. Based upon FIRM data, it appears that the subject property is not located within the 100 or 500-year flood zone (FEMA Map Panel ID: 3604970211F).

3.3.4 Direction and Distance to Nearest Surface Water

Based on topographic maps, it appears that the nearest permanent surface water body is the Gowanus Bay, located approximately ¼ mile west of the subject property.

4.0 PROPERTY USAGE

4.1 Current Property Usage

The subject property is currently used as a Dunkin Donuts and contains an asphalt paved parking lot.

4.2 Current Usage of Adjoining/Surrounding Properties

A summary of the surrounding properties is as follows:

Table 4-1 - Surrounding Property Usage

Direction	Property Description
North	MetroPCS store, pizzeria, Subway sandwich shop, 24th Street
South	25th Street, Deli
East	Non-specific commercial and industrial buildings, a school
West	4th Ave, R subway line, auto repair, mail center, various retail shops

4.3 Historical Usage of Subject Property and Surrounding Properties

Historical sources researched to determine past usage of the subject property and surrounding properties are as follows:

Sanborn Fire Insurance Maps - EDR was retained to provide historical Sanborn fire insurance maps of the subject and adjacent properties. Historical Sanborn maps for the subject property and surrounding area were reviewed for the years available between 1888 and 2007. Review of the maps is summarized in Table 4-2. A copy of the historical Sanborn report is included in **Appendix B**.

Historical Topographic Maps - Historical topographic maps for the subject property and surrounding area were reviewed for the years available between 1891 and 2013. Review of the maps is summarized in Table 4-2. Copies of historical topographic maps are included as **Appendix C**.

Historical Aerial Photographs - PWGC performed a review of readily available aerial photographs showing the subject property and surrounding area. Photographs were reviewed for the years available between 1924 and 2015. Review of the photos is summarized in Table 4-2. A copy of the aerial photograph search is included in **Appendix D**.

City Directory Listings - EDR was retained to provide a directory of historical telephone listings at the subject property and surrounding properties. City directories were reviewed for the years available between 1928 and 2014. A copy of the city directory report is included as **Appendix E**.

Table 4-2 - Subject Property Historical Usage

Date(s)	Source	Issues Noted	Description
1888 to 1906	SB, TM	No	The property appears to be undeveloped. The gridded street network around the property is in place.
1924 to 1997	SB, TM, AP, CD	Yes	The subject property is occupied by a garage/auto repair shop and a gasoline station. It appears that the canopy installed for the gas station was removed by 1971. In 1924, one symbol for a gasoline tank is located near the center of the western property boundary, by 1951 there appear to be eight or nine gasoline tank symbols. In the NW corner of the property, an area is labeled as grease.
2001 to 2003	SB	No	The subject property is identified as being under construction.
2004 to 2015	SB, TM, AP, CD	No	The currently existing building has been constructed and is identified as a commercial building with a parking lot.
Sources: SB – Sanborn Map; TM – Historical Topographic Map; AP – Aerial Photograph; CD – City Directory			

Historical usage of the subject property indicates that it was first developed between 1906 and 1924 and used as a gasoline and auto repair service station up until at least 1997, was under construction from at least 2001 to 2003, and was used for commercial purposes from at least 2004 to 2015. Historical usage of the subject property is indicative of potential RECs because of the presence of gasoline tanks and an auto repair shop.

Table 4-2 – Surrounding Area Historical Usage

Date(s)	Source	Issues Noted	Description
1888 to 1906	SB, TM, AP	No	North: dwellings, 24th Street South: Undeveloped lots, stone cutting East: stone cutting West: 4th Avenue, undeveloped lots
1924 to 2014	SB, TM, AP, CD	Yes	North: dwellings, junk yard, metal manufacturing, auto repair, 24th Street South: 25th Street, retail, winery, many industrial uses, including dye works, manufacturing, iron works East: Many industrial uses, including metal and non-descript manufacturing, woodworking, stone cutting, warehouses, laundry, filling stations, x-ray products West: 4th Avenue, retail shops, auto repair facility, filling station/auto repair with gasoline tank, printing shops as of 1965
Sources: SB – Sanborn Map; TM – Historical Topographic Map; AP – Aerial Photograph; CD – City Directory			

Review of historical information reviewed for the properties surrounding the subject property indicate that the area has been sparsely developed since at least 1888 and nearly fully developed since at least 1924. Surrounding properties have been used primarily as retail or industrial uses. The industrial usage of the properties in the surrounding area are indicative of potential RECs.

5.0 USER PROVIDED INFORMATION

5.1 User Requirements

The user of a Phase I ESA report, in accordance with the USEPA All Appropriate Inquiries (AAI) Rule and ASTM E1527-13 has certain responsibilities which include providing the following information, if available, to PWGC to be included within the Phase I Report. Additionally, PWGC provided the user of the report a User Questionnaire form. The information requested in the User Questionnaire is intended to assist in gathering information that may be material to identify if RECs are present at the subject property. A copy of the User Questionnaire and any provided documents are included in **Appendix F**; relevant information has been incorporated into this report.

5.2 Title Records

Title records for the site may contain information about past owners and uses of the subject property. The title report may also contain site information such as restrictive declarations which are limitations on site uses based upon know environmental conditions. As of the date of this report the user has not provided PWGC with a title search, or requested that PWGC perform a title search.

5.3 Environmental Liens

An environmental lien is a charge, security or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup or other remediation of hazardous substances or petroleum products upon a property, including, but not limited to, liens imposed pursuant to CERCLA 42 USC § 9607 (1) & 9607(r) and similar state and local laws.

As of the date of this report the user has not provided PWGC with a lien search or requested that PWGC perform a lien search; however, the EDR database provided information regarding a lien on the subject property in the amount of $1,575,334.16. The lien was sent to the Office of the Attorney General on June 20, 2002 in the name of Susan Guarino, the current owner of the property, and as of the date of this report, has not been withdrawn or released.

5.4 Specialized Knowledge

The user provided no specialized information about the property to PWGC.

5.5 Commonly Known or Reasonably Ascertainable Information

The user indicated that there was a large petroleum spill beneath the subject property and surrounding areas that was impacting the adjacent subway station.

5.6 Valuation Reduction for Environmental Issues

The user provided no information regarding price adjustments to the subject parcel's value due to environmental issues.

5.7 Owner, Property Manager and Occupant Information

The property is currently owned by Susan Guarino.

5.8 Reason for Performing Phase I ESA

The Phase I ESA was performed to evaluate potential RECs prior to a potential property transaction.

6.0 RECORDS REVIEW

6.1 Standard Environmental Record Sources

EDR of Shelton, Connecticut was retained to provide a database search of the project area within an ASTM-standard radius of the subject property. A list of the databases searched and the search radius is shown on the summary table below. PWGC reviewed the database output to determine if the property appears on any of the regulatory agency lists. Detailed information concerning each database list is provided in the EDR report (**Appendix G**).

In order to evaluate the potential for a site to have an adverse impact to the subject site, the migration pattern of contaminants in media such as groundwater or soil vapor is considered. Based upon the presumed regional flow towards the northwest, the following is assumed:

- Sites located southeast of the subject site are considered to have the highest potential to impact the subject site and are referred to as "upgradient."
- Sites located northwest of the subject site, which are not neighboring or adjacent to the subject site are considered to have the least potential to impact the subject site and are referred to as "downgradient."
- The presence of the adjacent subway line (R line) along 4th Avenue, west of the subject property, may have an impact on the groundwater flow and depth to groundwater, as well as soil vapor migration.
- All other sites not adjacent to or neighboring the subject property are referred to as "cross-gradient" and are considered to have minimal potential to impact the subject site.

A summary of standard environmental record sources researched is as follows:

6.1.1 Federal Databases

The table below summarizes the Federal databases that were searched.

Table 6-1 - Federal Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
USEPA	National Priority List	NPL	1.0 mile	No	0
USEPA	National Priority List Deletions	Delisted NPL	0.5 mile	No	0
USEPA	Superfund Enterprise Management System	SEMS	0.5 mile	No	0

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
USEPA	Superfund Enterprise Management System Archive	SEMS-ARCHIVE	0.5 mile	No	3
USEPA	Resource Conservation and Recovery Act Corrective Action Activity	CORRACTS	1.0 mile	No	1
USEPA	Resource Conservation and Recovery Act Treatment/Storage/Disposal Facilities	RCRA TSD	0.5 mile	No	1
USEPA	Resource Conservation and Recovery Act Small/Large Quantity Hazardous Waste Generators	RCRA SQG/LQG/ CESQG/ Non-Gen	Subject Property and Adjoining	Yes	0
USEPA	Federal Institutional/Engineering Control registries	US INST/ENG Controls	Subject Property	No	N/A
USEPA	Emergency Response Notification System	ERNS	Subject Property	No	N/A
USEPA	Superfund (CERCLA) Consent Decrees	CONSENT	1.0 mile	No	0
USEPA	Records of Decision	ROD	1.0 mile	No	0
USEPA	Mines Master Index	MINES	0.25 mile	No	0

Review of the EDR Radius Map Report indicates that the subject property is listed in Federal environmental databases searched. The subject property and nearby properties identified within the ASTM standard federal database search radii are detailed below.

SEMS-Archive – SEMS Archive tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that based upon available information, the location is not judged to be a potential NPL site.

The subject property is not identified as a SEMS-Archive site. A total of three properties within the search radius are identified as SEMS-Archive sites. Each of the three identified SEMS-Archive sites are located down or cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

RCRA CORRACTS - The RCRA Corrective Actions (CORRACTS) database is the EPA's list of hazardous waste treatment, storage or disposal facilities subject to corrective action under RCRA.

The subject property is not identified as a CORRACTS site. One property within the search radius is identified as a CORRACTS site. The identified CORRACTS site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

RCRA Treatment, Storage and Disposal - The EPA Resource Conservation and Recovery Act (RCRA) program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Treatment, Storage and Disposal (TSD) database is a compilation of reporting facilities that treat, store or dispose of hazardous waste.

The subject property is not identified as a RCRA TSD site. One property within the search radius is identified as a RCRA TSD site. The identified RCRA TSD site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

RCRA Generators - The RCRA Generators database is a compilation of reporting facilities that generate hazardous waste. A Small Quantity Generator (SQG) is a site which generate more than 100 and less than 1000 kg of hazardous waste during any one calendar month and accumulates less than 6000 kg of hazardous waste at any time; or a site which generates less than 100 kg of hazardous waste during any one calendar month and accumulates less than 1000 kg of hazardous waste at any time. Large Quantity Generators (LQG) generate more than 1000 kg of hazardous waste per month. A Conditionally Exempt SQG (CESQG) generates less than 100 kg of waste a month. A RCRA non-generator (RCRA Non-Gen) no longer produces hazardous waste.

The subject property is identified as a RCRA Generator site. The subject property is listed as Apple Auto Body, a RCRA Non-Gen site with no violations; however, the date of the form is 2007 which is when the property was

already converted to a Dunkin Donuts. This site may have been mislabeled as the subject property; however, based on the information available in the database report, this listing still does not appear to represent an environmental concern.

6.1.2 State and Local Databases

The table below summarizes the State databases that were searched.

Table 6-2 - New York State and Local Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
NYSDEC	Inactive Hazardous Waste Disposal Sites in New York State	SHWS	1.0 mile	No	6
NYSDEC	Hazardous Substance Waste Disposal Site Study	HSWDS	0.5 mile	No	2
NYSDEC	Solid Waste Facility Register	SWF/LF	0.5 mile	No	3
NYSDEC	Registered Recycling Facilities	SWRCY	0.5 mile	No	1
NYSDEC	Registered Waste Tire Storage Facilities	SWTIRE	0.5 mile	No	0
NYSDEC	Leaking Underground Storage Tank Sites	LTANKS	0.5 mile	Yes	29
NYSDEC	Petroleum Bulk Storage (PBS)	UST/AST	Subject Property and Adjoining	Yes	0
NYSDEC	Chemical Bulk Storage (CBS)	CBS AST/UST	Subject Property and Adjoining	No	0
NYSDEC	Institutional/Engineering Control registries	INST/ENG Controls	Subject Property	No	N/A
NYSDEC	Voluntary Cleanup Agreements	VCP	0.5 mile	No	0
NYSDEC	Brownfield sites	Brownfields	0.5 mile	No	0
NYSDEC	Major Oil Storage Facilities	MOSF	0.5 mile	No	3
NYSDEC	New York State Spills	NYSPILLS	0.125 mile	No	21
NYSDEC	Dry Cleaner Site	Drycleaners	0.25 mile	No	0
NYC	E-Designation	E-DES	Subject Property	No	N/A

Review of the EDR Radius Map Report indicates that the subject property is not listed in State environmental databases searched. The subject property and nearby properties identified within the ASTM standard State database search radii are detailed below.

New York State Inactive Hazardous Waste Disposal Sites - The New York State Department of Environmental Conservation (NYSDEC) maintains a state priority list of Inactive Hazardous Waste Disposal Sites (SHWS) considered to be actually or potentially contaminated and presenting a possible threat to human health and the environment. Referred to as the State Superfund Program, the Inactive Hazardous Waste Disposal Site Remedial Program is the cleanup program for inactive hazardous waste sites and now includes hazardous substance sites.

The subject property is not identified as a SHWS site. A total of six properties within the search radius are identified as SHWS sites. Each of the six identified SHWS sites are located down or cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

Hazardous Substance Waste Disposal Site Study - The Hazardous Substance Waste Disposal Site Study (HSWDS) list includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the SHWS registry and non-registry sites that EPA Preliminary Assessment reports or Site Investigation reports were prepared.

The subject property is not identified as a HSWDS site. Two properties within the search radius are identified as HSWDS sites. Both of the identified HSWDS sites are located cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

Solid Waste Facility Register - The NYSDEC Solid Waste Facility Register (SWF) records contain an inventory of solid waste disposal facilities or landfills in New York State.

The subject property is not identified as a SWF site. Three properties within the search radius are identified as SWF sites. Each of the identified SWF sites are located downgradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

Registered Recycling Facilities - The Registered Recycling Facilities List (SWRCY) is a NYSDEC list of recycling facilities.

The subject property is not identified as a SWRCY site. One property within the search radius is identified as a SWRCY site. The identified SWRCY site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

Leaking Underground Storage Tank Sites - The Leaking Underground Storage Tank Sites (LTANKS) database contains a NYSDEC inventory of reported leaking storage tank incidents. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills.

The subject property is identified as a LTANKS site. Spill #94-02784 was opened on May 26, 1994 due to a tank overfill. The site was known as City Gas Station and the material spilled was identified as gasoline; a volume spilled was not listed. The spill was remediated and closed by the NYSDEC on the same day; therefore, this listing is considered a HREC. Spill #96-07556, located at 4th Avenue and 25th Street, was opened on September 16, 1996 as a result of a tank test failure. The site is identified as a Citgo station and is believed to be one of the names of the service station that operated at the subject property. The UST that failed the test was identified as a 550-gallon UST containing #2 fuel oil; the volume of the spill was not listed and it is not clear if any material actually spilled from the UST. The NYSDEC comment for the spill was "wouldn't fill to grade." The spill was eventually closed on March 3, 2003. Based upon the limited information from this listing and from other information obtained via a NYSDEC FOIL request discussed in Section 6.3.1, it appears that little to no oil leaked from the UST; therefore, this listing is considered a HREC.

An additional 28 properties within the search radius are identified as LTANKS sites. Of the 28 identified LTANKS sites, five appear to be located up-gradient or adjacent/nearly adjacent to the subject property. The remaining LTANK sites are located cross-gradient or downgradient of the subject property and as such, are unlikely to affect the subject property.

Spill #16-10374, located adjacent to the subject property at 207 25th Street, was opened on February 16, 2017, but the spill date was listed as September 10, 1993 due to notification of a tank test failure of a 550 gallon diesel UST on that date. This spill will be further discussed in Section 6.3.1 due to the response of a NYSDEC FOIL request.

Spill #95-05109 is located at the 25th Street and 4th Avenue subway station adjacent to the subject property and was opened on February 1, 1995 when oil was observed in the subway station. This spill was closed on August 11, 1995 and referred to spill #93-05122.

Spill #02-10214 is located at 276-280 24th St, was opened on January 9, 2003, and is identified as a tank test failure of a 10,000-gallon tank. The tank was reportedly abandoned in 1999. In 2006, soil analytical data was provided indicating that there were minor hits below the TAGM guidelines and the spill was closed; however, additional information obtained via a NYSDEC FOIL request, discussed further in Section 6.3.1, revealed that an investigation conducted by the NYSDEC in 2016 around this heating oil tank was inconclusive as to whether or not this site was contributing to the plume associated with spill #93-05122 as the soil borings did not reach the necessary depths. Based upon the 2016 investigation, this site cannot be ruled out as having the potential to impact the subject property.

Spill #87-03559 was opened on July 31, 1987 due to a tank test failure resulting in a gasoline spill. The spill is located upgradient of the subject property at 740 5th Avenue which was an ExxonMobil gas station. The spill was further investigated in December 2006 when three existing on-site groundwater monitoring wells related to another nearby spill were sampled. While one well was dry, the remaining two wells exhibited concentrations of MTBE that exceeded NYSDEC standards; routine quarterly sampling ensued. It was determined that there was a total of twelve 550 gallon USTs on site which were eventually removed in 2015. A pilot test of an air sparging / soil vapor extraction system was conducted which failed. Off-site delineation of the spill shows high levels of BTEX, but little MTBE contamination. Spill number 87-03559 remains open as monitoring of installed wells and remediation continues. Based on the information available in the database report, this site cannot be ruled out as a potential environmental concern to the subject property, particularly related to gasoline contaminants in the groundwater.

Petroleum Bulk Storage - The NYSDEC Petroleum Bulk Storage (PBS) - UST database lists facilities with a petroleum storage capacity of more than 1,100 gallons and less than 400,000 gallons. The NYSDEC Petroleum Bulk Storage - AST database lists facilities with registered ASTs.

The subject property is identified as a PBS site. The PBS listing is 2-601564 and is listed as unregulated/closed with a site type of Retail Gasoline Sales. The facility owner is identified as Susan Guarino, the current owner of the property. Twelve 550-gallon gasoline USTs and two 550-gallon waste oil tanks (as per one of the PBS

applications included in the NYSDEC FOIL Response in Section 6.3.1) are identified as being installed on December 1, 1947 and removed on July 1, 1999. The last date of the tank tests were listed as July 1, 1993. The presence of USTs alone does not constitute a REC; however, these USTs will be further discussed in the NYSPILLS section under Spill #93-05122.

Major Oil Storage Facilities - The NYSDEC Major Oil Storage Facilities (MOSF) database lists facilities or vessels with a petroleum storage capacity of more than 400,000 gallons.

The subject property is not identified as a MOSF site. Three properties within the search radius are identified as MOSF sites. Each of the identified MOSF sites are located downgradient of the subject property, at the Gowanus Canal. The presence of tanks alone does not necessarily represent an environmental concern. Sites with spills or releases will be addressed in the appropriate section.

New York State Spills - The New York State Spills Information Database (NYSPILLS) contains data collected on chemical and petroleum spill incidents reported to NYSDEC since April 1, 1986.

The subject property is not identified as a NYSPILLS site; however, it is overlying a spill, #93-05122, that encompasses a large area between 4th Avenue and 5th Avenue and 24th Street to 25th Street. This spill will be further discussed in the NYSDEC FOIL response in Section 6.3.1. Additional spill numbers, including 94-04882, 97-05158, 93-13792, are also likely related to spill #93-05122.

A total of 17 other properties within the search radius are identified as NYSPILLS sites. Of the 17 identified NYSPILLS sites, one is adjacent to the subject property and is related to a build-up of hydrocarbons resulting in a blown manhole cover. The spill, #99-10038, was opened on November 18, 1999 and was not believed to be related to spill #93-05122. The spill was administratively closed on February 13, 2003. Based upon the nature of the spill and the presence of the larger spill, #93-05122, this spill is unlikely to affect the subject property. The remaining 16 are located cross-gradient or downgradient, and as such appear unlikely to represent an environmental concern to the subject property.

6.1.3 EDR Databases

The table below summarizes the EDR databases that were searched.

Table 6-3 - Additional Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
EDR	Manufactured Gas Plants	MGP	1.0 mile	No	2
EDR	Historical Drycleaners	HDC	0.25 mile	No	0
EDR	Historical Auto Station	HAS	0.125 mile	Yes	4

Review of the EDR Radius Map Report indicates that the subject property is listed in EDR proprietary databases searched. The subject property and nearby properties identified within the EDR proprietary database search radii are detailed below.

Manufactured Gas Plants - The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas plants (MGP) were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar, sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

The subject property is not identified as a MGP site. Two properties within the search radius are identified as MGP sites. Both of the identified MGP sites are located cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

EDR US Historical Auto Stations – EDR has searched national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers.

The subject property is identified as a HAS site. Both addresses of 737 and 747 4th Avenue include historical auto stations. From approximately 1988 to 2005, 737 4th Avenue operated as an auto repair shop under different owners. No violations or issues are reported in the database. Brown's Friendly Service, located at 747 4th Avenue, operated as an auto repair shop from approximately 1969 to 1976. The neighboring property at 731 4th Avenue is also identified as Brown's Friendly Service Station from 1982 to 1994; these are likely the same property and are located on the subject property. No violations or issues are reported in the database. Although no violations were noted, the site is overlying spill #93-05122 further discussed in Section 6.3.1.

Four other properties within the search radius are identified as HAS sites. Two identified HAS sites appear to be located upgradient of the subject property and consist of an active and a former gasoline service station adjacent to each other along 5th Avenue; one of the sites contains an open spill #87-03559. The presence of the spill was discussed in the LTANKS section Based on the information available in the database report, these sites cannot be ruled out as potential environmental concerns to the subject property. The remaining two HAS sites appear to be located cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

6.1.4 Orphan Sites

Orphan sites are properties, that due to an inadequate or incomplete address in government databases or in base map files, are not able to be geographically located (i.e. mapped or geocoded). This can occur for several reasons; no street number or street name in address given; the street address is given only as a P.O. Box; or when inconsistencies exist in the address (street number does not exist in the city / zip code given).

A total of 14 orphan sites were identified in the EDR report. PWGC performed a cursory review of the addresses listed. A neighboring property to the subject site, the subway station located at 4th Avenue and 25th Street, appears to be identified in the Orphans Summary as a RCRA NON-GEN/NLR site for chromium and lead. The site had previously been listed as a RCRA SQG in September 2006. No further information was provided in the database. The remaining 13 orphan sites do not appear to be located at or near the subject property.

6.2 Vapor Encroachment

PWGC performed a Tier 1 Vapor Encroachment Screening for the subject property in accordance with ASTM E2600-15, Vapor Encroachment Screening on Property Involved in Real Estate Transactions. In accordance with ASTM E2600-15, the default Area of Concern (AOC), adjusted to account for the groundwater flow direction in the vicinity of the subject property, is defined as follows:

Direction Relative to Subject Property	Petroleum Impacted Sites AOC Radius	Contaminants of Concern Impacted Sites AOC Radius
Up Gradient	528 feet	1760 feet
Cross Gradient	165 feet (LNAPL) 95 feet (dissolved)	365 feet
Down Gradient	100 feet (LNAPL) 30 feet (dissolved)	100 feet

PWGC evaluated sites identified in Federal and State databases (see Section 6.1) located within the adjusted AOC radii for the potential for petroleum impact and or contaminants of concern (such as perc) to be present. The following sites were identified within the adjusted AOC:

- LTANKS site/open spill adjacent to the subject property
- Open spill at the subject property

Each of these sites was evaluated for the potential for a vapor encroachment condition (VEC) to be present. PWGC identified the following sites within the AOC radii that may represent potential VECs:

- 207 25th Street
- 740 5th Avenue
- 748 5th Avenue
- 737 4th Avenue (the subject property)

A copy of the Tier 1 Vapor Encroachment Screening is included as **Appendix H**.

6.3 Additional Environmental Record Sources

6.3.1 Freedom of Information Act Requests

Freedom of Information Act (FOIA) requests were sent to the United States Environmental Protection Agency, Region 2 (USEPA), the New York State Department of Environmental Conservation, Region 2 (NYSDEC), the New York City Department of Buildings (NYCDOB), and the New York City Department of Health (NYCDOH). Copies of FOIA requests are included in **Appendix H**.

As of the date of this report, responses to FOIA requests have not been received, except as noted below. As responses were not provided within the allotted due diligence period, the records were deemed not to be "reasonably ascertainable" at this time. Should records become available at a later date, pertinent information will be forwarded as an addendum upon receipt.

The following information was obtained from the NYSDEC related to the PBS listings for the subject property as well as several spills in the area, including the large spill underlying the property, #93-05122.

PBS Applications

Three PBS applications were transmitted to PWGC. Each were identified as PBS Site #2-601564 with Susan Guarino as the owner and the facility identified as Retail Gasoline Sales. The initial PBS application, dated August 5, 1993, contained twelve 550-gallon active gasoline UST and one 275-gallon waste oil UST, each were identified as installed in 1947 and were of steel construction. The second PBS application, dated June 8, 1994, was an information correction which listed a total of fourteen 550-gallon USTs, twelve containing gasoline and two containing "other." Test dates of July or August 1993 were identified for all but one of the "other" USTs. The final PBS application is dated July 14, 1999 and the status of all fourteen USTs have been changed to closed/removed tank in July 1999. There was still no test date for the first "other" UST, but the second "other" UST was re-tested in September 1996.

NYSDEC Spill Files

PWGC requested files related to the following spills: 87-03559, 93-05122, 95-05109, 97-02464, 98-06222, 02-10214, and 16-10374. There is significant overlap between these spill files; therefore, they will largely be summarized as a whole instead of individual spills, where appropriate.

- Spill #87-03559 is related to the former ExxonMobil gasoline station on 24th Street and 5th Avenue. The spill is related to twelve 550-gallon USTs, mostly containing gasoline, that were removed in 2014. The spill was opened as the result of a gasoline tank test failureSignificantly elevated concentrations of MTBE and BTEX compounds were observed in on-site soils and on-site and off-site groundwater. A pilot test for an AS/SVE system failed. Remediation has largely been through source material removal when the USTs were removed. During the off-site investigation of this spill, a monitoring well was installed to the north of the gasoline station on the opposite side of 24th Street. Analytical results from this well showed a high concentration of BTEX (20,000 µg/L in 2010) with little MTBE, while the majority of on-site contamination was from MTBE. Groundwater flow at this site is identified as towards the north which may indicate that the site is cross-gradient from the subject property; however, if there is localized groundwater pumping, particularly near the subway tunnel, this may affect the groundwater flow direction. A pilot test for a soil vapor extraction (SVE) system was conducted in 2011 which failed. Additional sampling of wells contained BTEX concentrations exceeding 80,000 µg/L.
- A Con-Ed substation located on the NE corner of 24th Street and 5th Avenue was considered as a potential source for spill #93-05122, but was ruled out due to fingerprint analysis of the 93-05122 spill indicating diesel fuel whereas the Con-Ed substation contained cable oil in ASTs and a 1,000-gallon fuel oil UST. The UST is currently listed as closed in place as of 1998 and no further information has been provided.

- An investigation for spill #02-10214, located at 276-280 24th Street was previously discussed in the LTANKS section.
- On February 15, 2017, the NYSDEC conducted a subsurface investigation at 207 25th Street. Petroleum contamination was found in the soil, as shallow as 7 feet below grade, as well as in the groundwater.
- Spill number 93-05122, located at 25th street and 4th avenue (the R Line subway station), was opened on July 19, 1993 when oil was observed dripping onto the R Line subway platform under 4th avenue and between 25th and 26th streets. The oil had also drained from the platform and onto the tracks. The NYSDEC initially estimated spill #93-05122 to be greater than 100,000 gallons, but NYSDEC contractors later determined that the pool is much smaller. As part of the ongoing investigation and remediation of this spill, over 90 monitoring wells and even more soil borings have been installed to delineate the spill and identify potential responsible parties. Over the years of remediating this spill, NYSDEC contractors collected several petroleum samples for forensics analysis. The light non-aqueous phase liquid (LNAPL) was identified as diesel or diesel/#2 fuel oil; samples were collected over several years from several different monitoring wells, a holding tank related to the on-site remediation system, and directly from the diesel dispenser when the gasoline service station was still active. Comparison of the diesel from the dispenser and from the other LNAPL samples were contradictory. Age date samples indicated that the spill may have started between 1982 and 1992. The NYSDEC has considered the subject property as a potential source, as well as several other properties in the area and has conducted several investigations which have ruled out some properties and confirmed other properties as responsible parties. In 2001, red-dyed oil was observed in several monitoring wells on the subject property and along 25th Street near 4th Avenue, including up-gradient of the subject property. Red dyed oil is indicative of high-sulfur fuels for off-road use or heating oil which use the same dye; however, heating oil dye is used in a fivefold concentration for heating oil. Several pictures were taken of dark red dyed oil removed from the spill area. LNAPL removal has been conducted through an apparent groundwater pump and treat system with a holding tank for LNAPL recovery, manual bailing of LNAPL, and vacuum enhanced fluid recovery. As of 1999, over 34,000 gallons of LNAPL had been declared removed; however, it is unclear if that is pure LNAPL or a LNAPL/water mixture. At an unknown time, the LNAPL recovery system was no longer effective and shut down. At times, there have been lulls in the thickness of LNAPL observed in the wells, including low points in the 2000's and at other times, up to 6 to 7 feet of LNAPL have been recorded. Groundwater analytical results have contained elevated concentrations of volatile organic compounds consistent with gasoline while soil samples collected were determined to be from gasoline produced prior to 1985, including leaded gasoline.

- Following acts conducted in 2001 by the property owners, Susan Guarino and Ralph Guarino, that limited the NYSDEC's access to the property and threats to damage wells and the recovery system, the New York State Office of the Attorney General held Susan Guarino liable for $1.92M; the cleanup cost to date was $2.12M. It did not appear that the Guarino's were being held liable as a responsible party because their USTs leaked, but for disrupting the remediation of the spill.
- The subject property's USTs were removed in July 1999 under an agreement between the Guarino's and the NYSDEC in which the NYSDEC was responsible for the loading and disposal of petroleum contaminated soil. The NYSDEC contractor overseeing the UST removal noted that contamination was only observed above the USTs, not below them. Soil samples collected beneath a waste oil UST and a fuel oil UST revealed little to no contamination. Following demolition of the gasoline station on the subject property in 2000, the site was excavated for the construction of the current Dunkin Donuts. Photographs from the excavation revealed that the excavation was approximately 10 to 12 feet below sidewalk grade and little to no staining was observed within the excavation or the stockpile of soil. A rainbow sheen was observed in one picture and appeared to be consistent with minor gasoline impact. Darker staining was also observed in a puddle in one picture; however, NYSDEC reports indicate that little to no oil impact was observed in soils and some gasoline impact was observed in shallower soils, particularly near the pump islands located in the center and western portions of the property. Historic site plans indicate that the USTs were located along the western property boundary, at a significant distance from the wells containing the thickest and most consistent measurements of LNAPL. As part of the construction of the Dunkin Donuts, the NYSDEC recommended the following measures:
    - Installation of 1 foot of porous material beneath the cellar foundation (confirmed via pictures)
    - Installation of a passive sub-slab depressurization system (confirmed via pictures)
    - Installation of an impermeable vapor barrier
    - Installation of a poured foundation as opposed to a block foundation.

6.3.2 Publicly Available Information

Information regarding the subject property available on the commercial real estate website www.propertyshark.com (an aggregator of publicly available real estate information) was reviewed to identify pertinent information. Review of publicly available information identified the following potential environmental issues:

- Historical use as a garage/auto repair station and filling station

Information regarding the subject property available on the New York City Department of Buildings (NYCDOB) database was reviewed to identify pertinent information. Review of publicly available information identified the following information:

- A certificate of occupancy dated April 18, 1968 stated that it was for a gasoline station and a fire department approval dated April 4, 1968 for a gasoline tank installation.
- A permit was approved on April 24, 2000 for a full demolition of the existing property.
- A new building permit was approved on September 5, 2000.
- Additional permits pulled in 2001 and 2003 indicate that the Dunkin Donuts likely opened around 2003.

Copies of publicly available information are included in **Appendix H**.

7.0 SITE RECONNAISSANCE

7.1 Methodology and Limiting Conditions

Ms. Lisa Schreiner of PWGC performed the site inspection on Tuesday, February 20, 2018. Weather conditions during the inspection were clear with a temperature of approximately 65° Fahrenheit.

The site inspection consisted of an inspection of the interior portions of the existing building, followed by inspection of the exterior portions of the property, and exterior portions of neighboring properties.

7.2 Aboveground Storage Tanks (AST)

PWGC did not identify ASTs at the site.

7.3 Underground Storage Tanks (UST)

PWGC did not identify evidence of USTs, such as fill ports or vent lines, at the site.

7.4 Hazardous and Non-Hazardous Chemical Storage

PWGC observed chemical storage consisting of the following:

- General housekeeping cleaners
- Pesticides and rodenticides typical of a food establishment
- An approximate 30 gallon steel drum of hydraulic oil in the elevator maintenance room.

7.5 Waste Generation, Storage, and Disposal

PWGC observed evidence of waste generation, storage or disposal consisting of the following:

- Two dumpsters containing typical debris of a food establishment located on the southern end of the parking lot, enclosed in a fenced area.
- Three 55-gallon steel drums containing petroleum products such as absorbent socks related to the remediation of spill #93-05122, located behind the above mentioned dumpsters. The drums appeared to be in good condition with no leaks observed and were dated May 5, 2017.

7.6 Polychlorinated Biphenyls (PCBs)

PWGC did not identify materials or equipment that could potentially PCBs.

7.7 Additional Site Conditions

The following is a summary of visual and/or physical observations made by PWGC at the time of the site inspection. Photographs of pertinent observations are included in **Appendix A**.

Table 7-1 - Additional Site Conditions

Condition	Identified
Interior drains, trenches or sumps.	Yes[1]
Interior stains or corrosion	No
Unusual odors	No
Interior pools of liquid	No
Stained Soils or Pavement	No
Stressed Vegetation	No
Indications of solid waste disposal	No
Exterior ponds, pits, or lagoons	No
Wastewater or storm water discharge/disposal	No
Oil water separators/clarifiers	No
Septic Systems/Cesspools	No
Wells (Drinking water, monitoring wells, agricultural/ irrigation wells, or process water wells)	Yes[2]
Petroleum or natural gas pipelines or easements	No
Other	Yes[3]

1 – At least ten floor drains were observed in the storage room on the first floor and approximately 5 floor drains were observed in the basement. No chemical storage was observed in the vicinity of the drains and no staining or other evidence of spills or improper discharges was observed in the vicinity of the drains. The drains appeared to be discharging to the municipal sewer system as piping was observed within the drains. The presence of these drains is unlikely to present an environmental concern.

2 – Several monitoring wells were observed throughout the asphalt parking lot of the subject property, as well as long 24th Street, 25th Street, 4th Avenue, and 5th Avenue. These monitoring wells are related to the investigation of spill #93-05122 and other spills in the area.

3 – Several 5-gallon buckets of Regenesis's Regen-Ox chemical oxidant were identified in the dumpster area. PWGC did not identify the use of Regen-Ox in the NYSDEC spill files; however, it is a common chemical oxidant to utilize for remediation of gasoline and/or oil spills.

7.8 Neighboring Properties

PWGC performed a cursory inspection of the properties along 24th and 25th streets between 4th and 5th avenues from public right of ways. The neighboring properties are used for residential, commercial, retail and/or industrial purposes. Potential environmental concerns observed at neighboring properties included:

- An auto repair shop/body shop is located adjacent to the subject property, to the north.

- An ironworks company located along 25th street
- A gas station east of the subject property at 25th street and 5th avenue. A vacant gas station is located along 5th avenue, next to the existing gas station.
- Multiple fill ports and piping indicative of ASTs/USTs along 24th and 25th streets, between 4th and 5th avenue.

8.0 INTERVIEWS

8.1 Current Owner/Occupant

PWGC interviewed Iman, the current manager of the Dunkin Donuts. Iman did not have knowledge of environmental issues at the site, but has only worked at the property since 2015.

8.2 Previous Environmental Reports

PWGC was provided copies of two site plans illustrating the monitoring well network between 24th and 26th Streets and 4th and 5th Avenues, a hydrograph of one of the monitoring wells that exhibited a significant increase in oil thickness between 2013 and 2014, and a Field Activity Summary Report by Environmental Assessment & Remediations for the subject property on January 10, 2018. Information included in the report is summarized below.

8.2.1 Field Activity Summary Report

This field activity report by Environmental Assessment & Remediations includes a summary pertaining to activities performed at the Subway R Line, located at 25th Street and 4th Avenue, due to spill #93-05122 (discussed in the Section 6.3.1). The field activities that took place from April 2017 through December 2017 included monitoring well maintenance, well sampling, and well decommissioning/abandonment. LNAPL was detected in twelve monitoring wells and thicknesses ranged between 0.02 feet and 1.75 feet.

A copy of the Field Summary Report and other provided documents is included in **Appendix F.**

9.0 CONDITIONS OUTSIDE THE SCOPE OF ASTM 1527-13

9.1 Wetland Delineation

Based on review of the EDR Radius Map Report, which includes State and Federal wetlands, it appears that State and/or Federal wetlands are not present on the subject property. Based on review of the NYSDEC Environmental Resources Mapper, the site does not appear to be located within a wetlands checkzone.

Based on review of the EDR Radius Map Report, it appears that the nearest State or Federal wetland is the Gowanus Bay, located approximately ¼ mile west of the subject property.

9.2 Radon Risk Evaluation

Radon is a colorless, radioactive; inert gas formed by the decay of radium and may be present in soils and rocks containing granite, shale, phosphate and pitchblende. The USEPA's "Map of Radon Zones for New York State", September 1993 indicates that Kings County is not a radon risk area. The EDR report provides information from the New York State Department of Health radon survey which indicates that the average result for sites tested in Kings County is 0.750 Pico curies per liter (pCi/L) in the living area, which is below the USEPA radon action level of 4 pCi/L, and 100% of sites tested in Kings County were below the action level of 4 pCi/L in the living area.

9.3 Asbestos

PWGC did not identify evidence of potential asbestos containing material (ACM) at the site and the site was built between 2001 and 2003 after restrictions have been placed on the use of ACM. Although unlikely to contain asbestos, if the property is to be redeveloped or renovated, the NYCDOB may still require an asbestos inspection.

9.4 Lead-Based Paint (LBP)

PWGC did not identify evidence of potential lead based paint at the site. The paint appeared to be in good condition with no peeling observed and the site was built between 2001 and 2003 after restrictions have been placed on the use of lead-based paint. Although unlikely to contain lead-based paint, if the property is to be redeveloped or renovated, the NYCDOB may still require a lead-based paint inspection.

9.5 Mold

PWGC did visually observe several sources of water intrusion in the basement of the site during site reconnaissance. Water intrusion was located on the bottom of the wall in the room that housed the hydraulic lift mechanics for the elevator and in the area beneath the northern staircase. Areas of water intrusion can be conducive to mold growth.

10.0 FINDINGS AND OPINIONS

Based upon reconnaissance of the subject and surrounding properties, interviews and review of historical records and regulatory agency databases, the following potential RECs have been identified:

Onsite

- The historic usage as a gasoline filling station and garage/auto repair shop.
- Open spill #93-05122 which may be related to on-site activities and off-site sources.
- Closed on-site spills, #94-02784 and #96-07556.
- Three 55-gallon drums located at the southern end of the subject property. The drum labels indicate the drums contain petroleum products.

Offsite

- Historic and current usage of auto repair stations, gasoline service stations, and other industrial uses at several nearby properties.

Potential RECs identified at the subject property were evaluated to determine whether items initially suspected to be RECs are in fact RECs. Evaluation of potential RECs are as follows:

- The site was historically utilized as a gasoline service station and auto repair shop for approximately 8 decades. This long history of usage has resulted in the site's inclusion in several environmental databases (USTs, LTANKS, and Liens) and the installation of numerous monitoring wells throughout the subject property and surrounding areas related to an active spill being investigated and remediated by the NYSDEC. Information from the NYSDEC indicates that there was likely some minor gasoline contamination in the soils beneath the site and that there is gasoline contamination in the groundwater beneath the site. It is unlikely that the plume of oil associated with spill #93-05122 originated from the subject property; however, there is the potential that the gasoline impact in the groundwater is originating from the subject property and/or other nearby properties. The presence of gasoline contamination beneath the site is considered a REC.
- The two closed on-site spill numbers appeared to be minimal in nature and actual spills or leaks of significant product was not identified. Due to the closed status of these spills, they are HRECs.
- Several off-site properties have been identified that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property, most notably in the form of spill #93-05122. Due to the open status of these spills and their known migration onto the subject property, their presence is considered a REC.

11.0 CONCLUSIONS AND RECOMMENDATIONS

PWGC has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 for the subject property. There were no exceptions to, or deletions from, this practice except as noted in Section 12.0 of this report. PWGC evaluated the findings associated with the subject property and identified two RECs with respect to the subject property.

Based on the identified RECs, PWGC recommends a Phase II ESA be performed at the site to determine the extent of the petroleum contamination migrating beneath the subject property and to determine if the subject property is a contributing party to the contamination.

Based upon an August 13, 2018 phone conversation between PWGC and the NYSDEC Project Manager for Spill #93-05122, it is understood that the spill and the associated project identification number (PIN) used for payment to the NYSDEC contractors will be closed following final payment on outstanding contractor invoices. A new PIN was opened, effective July 2, 2018, relating to Spill #16-10374 at 207 25th Street, the neighboring property to the subject property. This reflects NYSDEC's understanding that the contamination identified at the subject site is migrating beneath the subject site from an up-gradient source.

12.0 DEVIATIONS

This Phase I ESA was conducted in accordance with the scope and limitations of the ASTM Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process) and 40 CFR Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule). Excluding data gaps identified in Section 2.8 and additional services outlined in Section 9.0, there were no deviations or deletions from this practice.

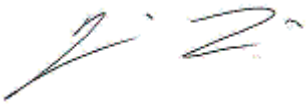
13.0 REFERENCES

All Appropriate Inquiry, Final Rule, 40 CFR Part 312.

Standard practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Standard E 1527-13.

14.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.



Jennifer Lewis, PG
Senior Project Manager

Report Completion Date: March 29, 2018, Updated August 15, 2018

731 4TH AVENUE
BROOKLYN, NY
BLOCK 652, LOT 7

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
(ASTM 1527-13/40 CFR PART 312)

PREPARED FOR:

Totem
55 Washington St., Suite 710
Brooklyn, NY 11201

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Jennifer Lewis, PG, Senior Project Manager JenniferL@pwgrosser.com

PWGC Project Number: TOT1802

JANUARY 2019

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731 4TH AVENUE, BROOKLYN, NY

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TABLES

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APPENDICES

1.0 EXECUTIVE SUMMARY

Totem (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Phase I Environmental Site Assessment (ESA) for the property located at 731 4th Avenue in Brooklyn, NY. The purpose of the Phase I ESA was to identify and evaluate the presence of Recognized Environmental Conditions (RECs) at the subject site. RECs are the presence or likely presence of any hazardous substance or petroleum product under conditions that indicate an existing release, a past release or material threat of a release of any hazardous substance or petroleum product into structures on the property or into the ground, groundwater or surface water of the property.

The subject property consists of one parcel located at 731 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The site is located in Kings County. The property is identified in the Brooklyn Tax Map as Block 652, Lot 7.

A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**; photos of the site are included in **Appendix A**.

The subject property measures approximately 5,017 square feet and is improved with a commercial retail shop with three units and an auto body shop with two bays. There are no landscaped areas.

Work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process), 40 Code of Federal Regulations (CFR) Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule) and PWGC's proposal for services.

PWGC evaluated the findings associated with the subject property and identified two RECs, no HRECs and no CRECs with respect to the subject property. Conditions determined to be RECs are detailed below:

- The site was historically utilized as a metals manufacturer, a junk yard, and an auto repair shop; use as an auto body repair shop has continued to the present day. The majority of these activities appeared to have been conducted in the rear portion of the property along 24th Street. Petroleum compounds

and chemical solvents are typically associated with these activities. Based upon the long history of industrial uses and the likely presence of these chemicals, the usage of the site represents a REC.

- Several off-site properties have been identified with petroleum spills that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property. Due to the open status of these spills, their presence is considered a REC.

Based on the identified RECs, PWGC recommends a Phase II ESA be performed at the site to determine if the historic usage of the property has resulted in impact to the subsurface and to determine if off-site spills have impacted groundwater or soil vapor beneath the site.

2.0 INTRODUCTION

2.1 Purpose

Totem (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Phase I Environmental Site Assessment (ESA) for the property located at 731 4th Avenue in Brooklyn, NY. The purpose of the Phase I ESA was to identify and evaluate the presence of Recognized Environmental Conditions (RECs) at the subject site. RECs are the presence or likely presence of any hazardous substance or petroleum product under conditions that indicate an existing release, a past release or material threat of a release of any hazardous substance or petroleum product into structures on the property or into the ground, groundwater or surface water of the property.

2.2 Scope of Services

The assessment consisted of a visual inspection of the site and surrounding areas, interviews, a review of historical information and aerial photographs, and a review of pertinent local, state, federal and facility records. Environmental Data Resources (EDR) of Shelton, Connecticut provided the following: a database search of environmental compliance records of sites within an ASTM standard radius of the property, a Sanborn fire insurance map search, historical aerial photograph search and a historical telephone directory search.

PWGC reviewed the environmental database report compiled by EDR as a part of the assessment. The purpose of the review was to identify reported listings for the subject property or other properties in the site vicinity. Databases reviewed included federal and state lists of known or suspected contaminated sites, lists of known handlers or generators of hazardous waste, lists of known waste disposal facilities, and lists of aboveground and underground storage tanks (ASTs and USTs). PWGC's review of the database has been incorporated into this report along with a copy of the EDR report.

The work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process), 40 CFR Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule) and PWGC's proposal for services.

2.3 Definitions

1. RECs are the presence or likely presence of any hazardous substance or petroleum product in, on, or at a property: (1) due to any release to the environment; (2) under the conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.
2. Historic RECs (HREC) are identified as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, activity or use limitations (AULs), institutional controls, or engineering controls).
3. Controlled RECs (CREC) are identified as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a No Further Action (NFA) letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).
4. A *de minimus* condition generally does not present a threat to human health or of the environment, and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimus* conditions are not RECs nor CRECs.

2.4 Significant Assumptions

PWGC has made the following significant assumptions in the preparation of this report:

1. Groundwater Flow Direction – Based upon regional groundwater elevation maps, local topography, and environmental reports for the surrounding area, regional groundwater flow direction appears to be toward the northwest. The presence of the adjacent subway line along 4th Avenue may have an impact on the groundwater flow and depth to groundwater.
2. Regulatory Records Information - PWGC assumes that all information provided by EDR regarding the regulatory status of facilities within the ASTM Standard approximate minimum search distance is complete, accurate, and current.
3. Other - PWGC assumes that all information provided through interviews is complete and unbiased.

2.5 Limitations and Exceptions

The conclusions presented in this report are professional opinions based on the data described in this report. These opinions have been arrived at in accordance with currently accepted engineering and hydrogeologic standards and practices applicable to this location, and are subject to the following inherent limitations:

1. The data presented in this report are from visual inspections, examination of records in the public domain, and interviews with individuals having information about the site. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration of the site, analysis of data, and re-evaluation of the findings, observations, and conclusions presented in this report.
2. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. The scope of work was defined by the request of the client.
3. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported, findings, observations, or conclusions. These are based solely upon site conditions in existence at the time of the investigation, and other information obtained and reviewed by PWGC.
4. PWGC's Phase I ESA report presents professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, or regulations, or policies of federal, state, or local government agencies. PWGC does not assume liability for financial or other losses or subsequent damage caused by or related to any use of this document.
5. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such.
6. This report is based, in part, on information supplied to PWGC by third-party sources. While efforts have been made to substantiate this third-party information, PWGC cannot attest to the completeness or accuracy of information provided by others.

2.6 Special Terms and Conditions

Authorization to perform this assessment was given by a proposal for services between Totem and PWGC.

2.7 User Reliance

This report was prepared for the exclusive use of Totem. PWGC assumes no liability for use of this report by any person or entity other than those for which it was prepared.

2.8 Data Gaps

Any data gaps identified herein, as defined by ASTM Practice E 1527-13 § 3.2.20, are not considered to have significantly affected the ability to identify RECs in connection with the subject property and do not alter the conclusions of this report.

One data gap was identified as an inspection of the site was limited – backrooms of each of the tenant spaces were not accessible. Based upon the known recent uses of the property and the historic uses of the property, it is unlikely that this data gap will alter the conclusions and recommendations from this report.

3.0 PROPERTY DESCRIPTION AND PHYSICAL SETTING

3.1 Location and Legal Description

The subject property consists of one parcel located at 731 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The site is located in Kings County. The property is identified in the Brooklyn Tax Map as Block 652, Lot 7.

A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**; photos of the site are included in **Appendix A**.

3.2 Site Description and Improvements

The subject property measures approximately 5,017 square feet and is improved with a commercial retail shop with three units and an auto body shop with two bays. There are no landscaped areas.

3.2.1 Municipal Services and Utilities

Utility services are provided to the property as follows:

- Heating/Cooling System – Unknown.
- Water Supply – The property is likely connected to the municipal water supply system.
- Sanitary System – The property is likely connected to the municipal sewer system.
- Electric – The property is likely provided electricity by Consolidated Edison.

3.3 Physical Setting

The topography of the site and surrounding area was reviewed from the USGS 7.5-minute series topographic map for the Brooklyn quadrangle. The property elevation is approximately 36 feet above the National Geodetic Vertical Datum (NGVD). Regional physiographic conditions are summarized below.

3.3.1 Regional Geology / Hydrogeology

The geologic setting of Long Island is well documented and consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd sand confined by the Raritan Clay Member. The Lloyd sand is an aquifer and consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan Clay is a solid and silty clay with: few lenses of sand and gravel; abundant lignite and pyrite; and gray, red or white in color.

Above the Raritan Clay lies the Magothy Formation. The Magothy Aquifer consists of layers of fine to coarse sand of moderate to high permeability, with inter-bedded lenses of silt and clay of low permeability resulting in areas of preferential horizontal flow. Therefore, this aquifer generally becomes more confined with depth. The Magothy Aquifer is overlain by the Upper Glacial Aquifer. The Upper Glacial Aquifer is the water table aquifer at this location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and brown clay. This aquifer extends from the land surface to the top of the Magothy and, therefore, is hydraulically connected to the Magothy Aquifer.

3.3.2 Local Hydrogeology

Based upon the extensive number of reports related to spills in the area, the depth to groundwater beneath the site is approximately 22 feet below existing grade. Regional groundwater flow is estimated to be toward the northwest. The presence of an adjacent subway line along 4th Avenue may impact the groundwater flow and depth to groundwater.

Based upon information contained within the EDR report, there are no public water supply wells within a one-mile radius of the subject property.

3.3.3 Flood Potential

PWGC reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) to determine if the subject property is located within the 100-year or 500-year flood zones. Based upon FIRM data, it appears that the subject property is not located within the 100 or 500-year flood zone (FEMA Map Panel ID: 3604970211F).

3.3.4 Direction and Distance to Nearest Surface Water

Based on topographic maps, it appears that the nearest permanent surface water body is the Gowanus Bay, located approximately ¼ mile west of the subject property.

4.0 PROPERTY USAGE

4.1 Current Property Usage

The subject property is currently occupied with a MetroPCS store, a restaurant, a bagel store, and an automotive repair shop. There are no landscaped areas or on-site parking.

4.2 Current Usage of Adjoining/Surrounding Properties

A summary of the surrounding properties is as follows:

Table 4-1 - Surrounding Property Usage

Direction	Property Description
North	24th Street, mixed use commercial and residential building
South	Dunkin' Donuts, 25th Street
East	Non-specific commercial/industrial buildings with two loading bays.
West	4th Ave, R subway line, auto repair, mail center, various retail shops

4.3 Historical Usage of Subject Property and Surrounding Properties

Historical sources researched to determine past usage of the subject property and surrounding properties are as follows:

Sanborn Fire Insurance Maps - EDR was retained to provide historical Sanborn fire insurance maps of the subject and adjacent properties. Historical Sanborn maps for the subject property and surrounding area were reviewed for the years available between 1888 and 2007. Review of the maps is summarized in Table 4-2. A copy of the historical Sanborn report is included in **Appendix B**.

Historical Topographic Maps - Historical topographic maps for the subject property and surrounding area were reviewed for the years available between 1891 and 2013. Review of the maps is summarized in Table 4-2. Copies of historical topographic maps are included as **Appendix C**.

Historical Aerial Photographs - PWGC performed a review of readily available aerial photographs showing the subject property and surrounding area. Photographs were reviewed for the years available between 1924 and

2017. Review of the photos is summarized in Table 4-2. A copy of the aerial photograph search is included in **Appendix D**.

City Directory Listings - EDR was retained to provide a directory of historical telephone listings at the subject property and surrounding properties. City directories were reviewed for the years available between 1928 and 2014. A copy of the city directory report is included as **Appendix E**.

Table 4-2 - Subject Property Historical Usage

Date(s)	Source	Issues Noted	Description
1888 - 1900	SB, TM	No	The property appears to be developed with two small dwellings, one located at the intersection and the other along 24th Street.
1906 – 1940	SB, AP, TM	Yes	The dwelling at the intersection has been converted to a shop and another building labeled junk has been constructed adjacent to it along 4th Avenue. By 1926, a small shed was constructed adjacent to the neighboring property to the southwest. The other small dwelling along 24th St is still present with the remainder of the property identified as "full of junk."
1949 – 1974	SB, CD	Yes	The building labeled junk has been removed, the remaining buildings are still present. A new building identified as metal products manufacturing and later as storage is present along 24th Street.
1976 - 2009	SB, CD	Yes	The metal products manufacturing is now identified as an auto repair shop and used car sales. There are no other buildings present until 1987 when a 2 story commercial building is constructed adjacent to the repair shop (southeast side).
2013 - 2017	AP	No	The used car lot has been replaced with the present day retail shop. The overall site configuration is consistent with present day conditions.
Sources: SB – Sanborn Map; TM – Historical Topographic Map; AP – Aerial Photograph; CD – City Directory			

Historical usage of the subject property indicates that it was first developed prior to 1888 as a residential property and was converted to industrial uses by 1906 which included the following uses indicative of potential RECs: a junk yard, metal manufacturer, and an auto repair shop.

Table 4-2 – Surrounding Area Historical Usage

Date(s)	Source	Issues Noted	Description
1888 to 1906	SB, TM, AP	No	North: 24th Street, undeveloped lots South: Undeveloped lots, 25th Street East: stone cutting West: 4th Avenue, undeveloped lots
1924 to 2014	SB, TM, AP, CD	Yes	North: 24th Street South: Auto garage, gasoline station 25th Street until ~2003, commercial use afterwards. East: Many industrial uses, including metal and non-descript manufacturing, woodworking, stone cutting, warehouses, laundry, filling stations, x-ray products West: 4th Avenue, retail shops, auto repair facility, filling station/auto repair with gasoline tank, printing shops as of 1965
Sources: SB – Sanborn Map; TM – Historical Topographic Map; AP – Aerial Photograph; CD – City Directory			

Review of historical information reviewed for the properties surrounding the subject property indicate that the area has been sparsely developed since at least 1888 and nearly fully developed since at least 1924. Surrounding properties have been used primarily as retail or industrial uses. The industrial usage of the properties in the surrounding area are indicative of potential RECs.

5.0 USER PROVIDED INFORMATION

5.1 User Requirements

The user of a Phase I ESA report, in accordance with the USEPA All Appropriate Inquiries (AAI) Rule and ASTM E1527-13 has certain responsibilities which include providing the following information, if available, to PWGC to be included within the Phase I Report. Additionally, PWGC provided the user of the report a User Questionnaire form. The information requested in the User Questionnaire is intended to assist in gathering information that may be material to identify if RECs are present at the subject property. A copy of the User Questionnaire and any provided documents are included in **Appendix F**; relevant information has been incorporated into this report.

5.2 Title Records

Title records for the site may contain information about past owners and uses of the subject property. The title report may also contain site information such as restrictive declarations which are limitations on site uses based upon know environmental conditions. As of the date of this report the user has not provided PWGC with a title search or requested that PWGC perform a title search.

5.3 Environmental Liens

An environmental lien is a charge, security or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup or other remediation of hazardous substances or petroleum products upon a property, including, but not limited to, liens imposed pursuant to CERCLA 42 USC § 9607 (1) & 9607(r) and similar state and local laws. As of the date of this report the user has not provided PWGC with a lien search or requested that PWGC perform a lien search.

The EDR database did identify a lien listed under 731 Fourth Avenue with a site name of Susan Guarino; however, this lien has been previously identified as associated with the adjacent property at 737 4th Avenue.

5.4 Specialized Knowledge

The user provided no specialized information about the property to PWGC.

5.5 Commonly Known or Reasonably Ascertainable Information

The user provided no commonly known information about the property to PWGC.

5.6 Valuation Reduction for Environmental Issues

The user provided no information regarding price adjustments to the subject parcel's value due to environmental issues.

5.7 Owner, Property Manager and Occupant Information

The property is currently owned by 731 4th Ave LLC.

5.8 Reason for Performing Phase I ESA

The Phase I ESA was performed to evaluate potential RECs prior to a potential property transaction.

6.0 RECORDS REVIEW

6.1 Standard Environmental Record Sources

EDR of Shelton, Connecticut was retained to provide a database search of the project area within an ASTM-standard radius of the subject property. A list of the databases searched and the search radius is shown on the summary table below. PWGC reviewed the database output to determine if the property appears on any of the regulatory agency lists. Detailed information concerning each database list is provided in the EDR report (**Appendix G**).

In order to evaluate the potential for a site to have an adverse impact to the subject site, the migration pattern of contaminants in media such as groundwater or soil vapor is considered. Based upon the presumed regional flow towards the northwest, the following is assumed:

- Sites located southeast of the subject site are considered to have the highest potential to impact the subject site and are referred to as "upgradient."
- Sites located northwest of the subject site, which are not neighboring or adjacent to the subject site are considered to have the least potential to impact the subject site and are referred to as "downgradient."
- The presence of the adjacent subway line (R line) along 4th Avenue, west of the subject property, may have an impact on the groundwater flow and depth to groundwater, as well as soil vapor migration.
- All other sites not adjacent to or neighboring the subject property are referred to as "cross-gradient" and are considered to have minimal potential to impact the subject site.

A summary of standard environmental record sources researched is as follows:

6.1.1 Federal Databases

The table below summarizes the Federal databases that were searched.

Table 6-1 - Federal Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
USEPA	National Priority List	NPL	1.0 mile	No	0
USEPA	National Priority List Deletions	Delisted NPL	0.5 mile	No	0

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
USEPA	Superfund Enterprise Management System	SEMS	0.5 mile	No	0
USEPA	Superfund Enterprise Management System Archive	SEMS-ARCHIVE	0.5 mile	No	2
USEPA	Resource Conservation and Recovery Act Corrective Action Activity	CORRACTS	1.0 mile	No	1
USEPA	Resource Conservation and Recovery Act Treatment/Storage/Disposal Facilities	RCRA TSD	0.5 mile	No	1
USEPA	Resource Conservation and Recovery Act Small/Large Quantity Hazardous Waste Generators	RCRA SQG/LQG/ CESQG/ Non-Gen	Subject Property and Adjoining	No	1
USEPA	Federal Institutional/Engineering Control registries	US INST/ENG Controls	Subject Property	No	N/A
USEPA	Emergency Response Notification System	ERNS	Subject Property	No	N/A
USEPA	Superfund (CERCLA) Consent Decrees	CONSENT	1.0 mile	No	0
USEPA	Records of Decision	ROD	1.0 mile	No	0
USEPA	Mines Master Index	MINES	0.25 mile	No	0

Review of the EDR Radius Map Report indicates that the subject property is not listed in Federal environmental databases searched. The nearby properties identified within the ASTM standard federal database search radii are detailed below.

SEMS-Archive – SEMS Archive tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other

considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that based upon available information, the location is not judged to be a potential NPL site.

The subject property is not identified as a SEMS-Archive site. A total of two properties within the search radius are identified as SEMS-Archive sites. Each of the two identified SEMS-Archive sites are located down or cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

RCRA CORRACTS - The RCRA Corrective Actions (CORRACTS) database is the EPA's list of hazardous waste treatment, storage or disposal facilities subject to corrective action under RCRA.

The subject property is not identified as a CORRACTS site. One property within the search radius is identified as a CORRACTS site. The identified CORRACTS site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

RCRA Treatment, Storage and Disposal - The EPA Resource Conservation and Recovery Act (RCRA) program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Treatment, Storage and Disposal (TSD) database is a compilation of reporting facilities that treat, store or dispose of hazardous waste.

The subject property is not identified as a RCRA TSD site. One property within the search radius is identified as a RCRA TSD site. The identified RCRA TSD site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

RCRA Generators - The RCRA Generators database is a compilation of reporting facilities that generate hazardous waste. A Small Quantity Generator (SQG) is a site which generate more than 100 and less than 1000 kg of hazardous waste during any one calendar month and accumulates less than 6000 kg of hazardous waste at any time; or a site which generates less than 100 kg of hazardous waste during any one calendar month and accumulates less than 1000 kg of hazardous waste at any time. Large Quantity Generators (LQG) generate more

than 1000 kg of hazardous waste per month. A Conditionally Exempt SQG (CESQG) generates less than 100 kg of waste a month. A RCRA non-generator (RCRA Non-Gen) no longer produces hazardous waste.

The subject property is not identified as a RCRA Generator site. The adjacent property to the southeast is listed as Apple Auto Body, a RCRA Non-Gen site with no violations; however, the date of the form is 2007 which is when the property was already converted to a Dunkin Donuts. This site may have been mislabeled as the subject property; however, based on the information available in the database report, this listing still does not appear to represent an environmental concern.

6.1.2 State and Local Databases

The table below summarizes the State databases that were searched.

Table 6-2 - New York State and Local Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
NYSDEC	Inactive Hazardous Waste Disposal Sites in New York State	SHWS	1.0 mile	No	9
NYSDEC	Hazardous Substance Waste Disposal Site Study	HSWDS	0.5 mile	No	1
NYSDEC	Solid Waste Facility Register	SWF/LF	0.5 mile	No	3
NYSDEC	Registered Recycling Facilities	SWRCY	0.5 mile	No	1
NYSDEC	Registered Waste Tire Storage Facilities	SWTIRE	0.5 mile	No	0
NYSDEC	Leaking Underground Storage Tank Sites	LTANKS	0.5 mile	No	27
NYSDEC	Petroleum Bulk Storage (PBS)	UST/AST	Subject Property and Adjoining	No	2
NYSDEC	Chemical Bulk Storage (CBS)	CBS AST/UST	Subject Property and Adjoining	No	0
NYSDEC	Institutional/Engineering Control registries	INST/ENG Controls	Subject Property	No	N/A
NYSDEC	Voluntary Cleanup Agreements	VCP	0.5 mile	No	6
NYSDEC	Brownfield sites	Brownfields	0.5 mile	No	0
NYSDEC	Major Oil Storage Facilities	MOSF	0.5 mile	No	3

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
NYSDEC	New York State Spills	NYSPILLS	0.125 mile	No	27
NYSDEC	Dry Cleaner Site	Drycleaners	0.25 mile	No	0
NYC	E-Designation	E-DES	Subject Property	No	N/A

Review of the EDR Radius Map Report indicates that the subject property is not listed in State environmental databases searched. The nearby properties identified within the ASTM standard State database search radii are detailed below.

New York State Inactive Hazardous Waste Disposal Sites - The New York State Department of Environmental Conservation (NYSDEC) maintains a state priority list of Inactive Hazardous Waste Disposal Sites (SHWS) considered to be actually or potentially contaminated and presenting a possible threat to human health and the environment. Referred to as the State Superfund Program, the Inactive Hazardous Waste Disposal Site Remedial Program is the cleanup program for inactive hazardous waste sites and now includes hazardous substance sites.

The subject property is not identified as a SHWS site. A total of nine properties within the search radius are identified as SHWS sites. Each of the nine identified SHWS sites are located down or cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

Hazardous Substance Waste Disposal Site Study - The Hazardous Substance Waste Disposal Site Study (HSWDS) list includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the SHWS registry and non-registry sites that EPA Preliminary Assessment reports or Site Investigation reports were prepared.

The subject property is not identified as a HSWDS site. One property within the search radius is identified as a HSWDS site. The HSWDS sites is located cross-gradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

Solid Waste Facility Register - The NYSDEC Solid Waste Facility Register (SWF) records contain an inventory of solid waste disposal facilities or landfills in New York State.

The subject property is not identified as a SWF site. Three properties within the search radius are identified as SWF sites. Each of the identified SWF sites are located downgradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

Registered Recycling Facilities - The Registered Recycling Facilities List (SWRCY) is a NYSDEC list of recycling facilities.

The subject property is not identified as a SWRCY site. One property within the search radius is identified as a SWRCY site. The identified SWRCY site is located downgradient of the subject property and as such, appears unlikely to represent an environmental concern to the subject property.

Leaking Underground Storage Tank Sites - The Leaking Underground Storage Tank Sites (LTANKS) database contains a NYSDEC inventory of reported leaking storage tank incidents. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills.

The subject property is not identified as a LTANKS site.

A total of 27 sites were identified as LTANKS sites, one of which is adjacent to the subject property. The adjacent site (737 4th Avenue) and the area adjacent to the this site, along 25th Street and 4th Avenue, is identified as a spill site with several spills, each of which have since been closed. Spill #94-02784 was opened on May 26, 1994 due to a tank overfill. The material spilled was identified as gasoline; a volume spilled was not listed. The spill was remediated and closed by the NYSDEC on the same day; therefore, this listing is not considered a REC. Spill #95-05109 was opened on February 1, 1995 as a result of oil seepage into the subway tunnel believed to have originated from the former gasoline station at the adjacent site (737 4th Ave). The spill was closed on August 11, 1995 and was referred to spill #93-05122 (discussed in the NYSPILLS section). Spill #96-07556, located at 4th Avenue and 25th Street, was opened on September 16, 1996 as a result of a tank test failure. The site is identified as a Citgo station and is believed to be one of the names of the service station that operated at the adjacent site (737 4th Ave). The UST that failed the test was identified as a 550-gallon UST containing #2 fuel oil; the volume of the spill was not listed and it is not clear if any material actually spilled from the UST. The NYSDEC comment

for the spill was "wouldn't fill to grade." The spill was eventually closed on March 3, 2003. Based upon the limited information from this listing and from other information obtained via a NYSDEC FOIL request discussed in Section 6.3.1, it appears that little to no oil leaked from the UST; therefore, this listing is not considered a REC.

An additional 26 properties within the search radius are identified as LTANKS sites. Of the 26 identified LTANKS sites, six appear to be located up-gradient to the subject property. The remaining LTANK sites are located cross-gradient or downgradient of the subject property and as such, are unlikely to affect the subject property.

Spill #16-10374, located at 207 25th Street, was opened on February 16, 2017, but the spill date was listed as September 10, 1993 due to notification of a tank test failure of a 550 gallon diesel UST on that date. This spill has recently been determined to be the likely source of the petroleum spill along 25th Street that impacted the subway tunnel and the NYSDEC remediation of this spill has been transferred from spill #93-05122 to this spill number. The extent that this spill may have spread along the 4th Avenue subway line This spill will be further discussed in Section 6.3.1 due to the response of a NYSDEC FOIL request.

Spill #02-10214 is located at 276-280 24th St, was opened on January 9, 2003, and is identified as a tank test failure of a 10,000-gallon tank. The tank was reportedly abandoned in 1999. In 2006, soil analytical data was provided indicating that there were minor hits below the TAGM guidelines and the spill was closed; however, additional information obtained via a NYSDEC FOIL request, discussed further in Section 6.3.1, revealed that an investigation conducted by the NYSDEC in 2016 around this heating oil tank was inconclusive as to whether or not this site was contributing to the plume associated with spill #93-05122 as the soil borings did not reach the necessary depths. Based upon the 2016 investigation, this site cannot be ruled out as having the potential to impact the subject property.

Spill #87-03559 was opened on July 31, 1987 due to a tank test failure resulting in a gasoline spill. The spill is located upgradient of the subject property at 740 5th Avenue which was an ExxonMobil gas station. The spill was further investigated in December 2006 when three existing on-site groundwater monitoring wells related to another nearby spill were sampled. While one well was dry, the remaining two wells exhibited concentrations of MTBE that exceeded NYSDEC standards; routine quarterly sampling ensued. It was determined that there was a total of twelve 550 gallon USTs on site which were eventually removed in 2015. A pilot test of an air sparging / soil vapor extraction system was conducted which failed. Off-site delineation of the spill shows high

levels of BTEX, but little MTBE contamination. Spill number 87-03559 remains open as monitoring of installed wells and remediation continues. Based on the information available in the database report, this site cannot be ruled out as a potential environmental concern to the subject property, particularly related to gasoline contaminants in the groundwater. Spill #98-06222, listed in the NYSPILLS database, is also located at this site. The spill was reported on August 19, 1998 and was eventually closed on September 17, 2007 and referred to spill #87-03559.

Spill #97-02464 was opened on May 28, 1997 due to a tank test failure. The site is identified as a ConEd substation located at the intersection of 25th Street and 5th Avenue; however, information regarding the spill referred to a gasoline service station that did not coincide with the station located at the opposite corner; therefore, NYSDEC closed the spill on November 28, 2014. As the spill appears to be mapped incorrectly, it is unlikely to affect the subject property.

A site identified as the actual ConEd substation located at the intersection of 24th Street and 5th Avenue is up-gradient of the subject property and contains a total of 12 NYSDEC spills identified in the LTANKS and NYSPILLS databases. Each of the spills were related to dielectric/hydraulic oil, were remediated, and closed. Based upon the nature of these spills and their closed statuses, they are unlikely to affect the subject property.

Petroleum Bulk Storage - The NYSDEC Petroleum Bulk Storage (PBS) - UST database lists facilities with a petroleum storage capacity of more than 1,100 gallons and less than 400,000 gallons. The NYSDEC Petroleum Bulk Storage - AST database lists facilities with registered ASTs.

The subject property is not identified as a PBS site. The adjacent property to the southwest (737 4th Ave) is a PBS site, the PBS listing is 2-601564 and it is listed as unregulated/closed with a site type of Retail Gasoline Sales. The facility owner is identified as Susan Guarino, the previous owner of the property. Twelve 550-gallon gasoline USTs and two 550-gallon waste oil tanks (as per one of the PBS applications included in the NYSDEC FOIL Response in Section 6.3.1) are identified as being installed on December 1, 1947 and removed on July 1, 1999. The last date of the tank tests were listed as July 1, 1993. The presence of USTs alone does not constitute a REC; however, these USTs will be further discussed in the NYSPILLS section under Spill #93-05122. The adjacent property to the northeast (725 4th Ave) is also listed as a PBS site, listing 2-155020 which is active. The site

contains one 5,000 gallon heating oil AST. A spill was identified at the site which will be further discussed in the NYSPILLS section.

Voluntary Cleanup Agreements - The NYSDEC Voluntary Cleanup Program (VCP) database identifies brownfield sites undergoing private sector cleanup as part of redevelopment.

The subject property is not identified as a VCP site. Six sites are identified as VCP sites within the search radius. Each of these sites is located cross-gradient of the subject property; therefore, they are unlikely to affect the subject property.

Major Oil Storage Facilities - The NYSDEC Major Oil Storage Facilities (MOSF) database lists facilities or vessels with a petroleum storage capacity of more than 400,000 gallons.

The subject property is not identified as a MOSF site. Three properties within the search radius are identified as MOSF sites. Each of the identified MOSF sites are located downgradient of the subject property, at the Gowanus Canal. The presence of tanks alone does not necessarily represent an environmental concern. Sites with spills or releases will be addressed in the appropriate section.

New York State Spills - The New York State Spills Information Database (NYSPILLS) contains data collected on chemical and petroleum spill incidents reported to NYSDEC since April 1, 1986.

The subject property is not identified as a NYSPILLS site.

A total of 27 properties within the search radius are identified as NYSPILLS sites. Of the 27 identified NYSPILLS sites, four are adjacent to the subject property. Spill #93-05122, which encompasses a large area between 4th Avenue and 5th Avenue and 24th Street to 25th Street was opened on July 19, 1993 following a discovery of oil leaking into the subway station. This spill will be further discussed in the NYSDEC FOIL response in Section 6.3.1. Spill #06-05711 was opened on August 16, 2006, occurred in a manhole and was a release of 2 gallons of an unknown petroleum. The spill was remediated and closed in December 2006. Spill #05-10375 was opened on December 2, 2005 as a result of an overfill of a tank. The spill on the sidewalk and in the secondary containment within the basement was remediated and closed three days later. Spill #99-10038 was opened on November

18, 1999 as a result of a manhole blowing its cover. A source of the spill was not identified, but it was attributed to a possible one-time dumping event and the spill was closed in February 2003.

Seven NYSPILLS sites are identified up-gradient of the subject property. Two of the NYSPILLS site are identified as the ConEd substation and the ExxonMobil station, previously discussed in the LTANKS section. Spill #00-09398 was opened on November 15, 2000 as a result of a bus accident at 24th Street and 5th Avenue; the spill was remediated and closed the following April. Spill #02-04232 was opened on July 23, 2002 and was located in a manhole along 24th Street. Approximately 1 gallon of an unknown petroleum was identified on 1,000 gallons of water; the spill was remediated and closed in November 2002. Spill #02-08220 was opened on November 7, 2002 and was also located in a manhole along 24th Street. Approximately 1 gallon of an unknown petroleum was observed on 500 gallons of water; the spill was remediated and closed the following day. Spill #08-05570 was opened on August 13, 2008 at 276 24th Street as a result of a dumped 55 gallon drum and 5 gallon buckets. The drum and buckets were believed to contain #2 fuel oil and leaked onto the sidewalk. The spill was remediated and closed the following week. Based upon the nature of these spills, they are unlikely to affect the subject property.

Of the remaining NYSPILLS sites, each are located cross-gradient or downgradient of the subject property and are unlikely to affect the subject property.

6.1.3 EDR Databases

The table below summarizes the EDR databases that were searched.

Table 6-3 - Additional Databases Searched

Agency	Listing Name or database Searched	Abbreviation	Search Distance	Target Property Identified	Nearby Properties Identified
EDR	Manufactured Gas Plants	MGP	1.0 mile	No	2
EDR	Historical Drycleaners	HDC	0.25 mile	No	0
EDR	Historical Auto Station	HAS	0.125 mile	Yes	8

Review of the EDR Radius Map Report indicates that the subject property is listed in EDR proprietary databases searched. The subject property and nearby properties identified within the EDR proprietary database search radii are detailed below.

Manufactured Gas Plants - The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas plants (MGP) were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar, sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

The subject property is not identified as a MGP site. Two properties within the search radius are identified as MGP sites. Both of the identified MGP sites are located cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

EDR US Historical Auto Stations – EDR has searched national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers.

The subject property is identified as a HAS site; however, the site name is identified as 737 4th Ave Inc which is the address for the adjacent property which was also used as an auto body shop. Both addresses of 737 and 747 4th Avenue include historical auto stations. From approximately 1988 to 2005, 737 4th Avenue operated as an auto repair shop under different owners. No violations or issues are reported in the database. Brown's Friendly Service, located at 747 4th Avenue, operated as an auto repair shop from approximately 1969 to 1976. No violations or issues are reported in the database. Five other properties within the search radius are identified as HAS sites. Three identified HAS sites (two appear to be the same site) are located upgradient of the subject property and consist of an active and a former gasoline service station adjacent to each other along 5th Avenue; one of the sites contains an open spill #87-03559. The presence of the spill was discussed in the LTANKS section. Based on the information available in the database report, these sites cannot be ruled out as potential environmental concerns to the subject property. The remaining two HAS sites appear to be located cross-gradient of the subject property and as such, appear unlikely to represent an environmental concern to the subject property.

6.1.4 Orphan Sites

Orphan sites are properties, that due to an inadequate or incomplete address in government databases or in base map files, are not able to be geographically located (i.e. mapped or geocoded). This can occur for several reasons; no street number or street name in address given; the street address is given only as a P.O. Box; or when inconsistencies exist in the address (street number does not exist in the city / zip code given).

A total of 14 orphan sites were identified in the EDR report. PWGC performed a cursory review of the addresses listed. A neighboring property to the subject site, the subway station located at 4th Avenue and 25th Street, appears to be identified in the Orphans Summary as a RCRA NON-GEN/NLR site for chromium and lead. The site had previously been listed as a RCRA SQG in September 2006. No further information was provided in the database. The remaining 13 orphan sites do not appear to be located at or near the subject property.

6.2 Vapor Encroachment

PWGC performed a Tier 1 Vapor Encroachment Screening for the subject property in accordance with ASTM E2600-15, Vapor Encroachment Screening on Property Involved in Real Estate Transactions. In accordance with ASTM E2600-15, the default Area of Concern (AOC), adjusted to account for the groundwater flow direction in the vicinity of the subject property, is defined as follows:

Direction Relative to Subject Property	Petroleum Impacted Sites AOC Radius	Contaminants of Concern Impacted Sites AOC Radius
Up Gradient	528 feet	1760 feet
Cross Gradient	165 feet (LNAPL) 95 feet (dissolved)	365 feet
Down Gradient	100 feet (LNAPL) 30 feet (dissolved)	100 feet

PWGC evaluated sites identified in Federal, State, and EDR databases (see Section 6.1) located within the adjusted AOC radii for the potential for petroleum impact and or contaminants of concern (such as tetrachloroethene) to be present. The following sites were identified within the adjusted AOC:

- Several LTANKS and NYSPILLS sites adjacent to and up-gradient of the subject property
- Several EDR Historic Auto sites adjacent to and up-gradient of the subject property

Each of these sites was evaluated for the potential for a vapor encroachment condition (VEC) to be present. PWGC identified the following sites within the AOC radii that may represent potential VECs:

- 737 4th Avenue
- 207 25th Street
- 276-280 24th Street
- 740 5th Avenue
- 745 5th Avenue
- 748 5th Avenue

A copy of the Tier 1 Vapor Encroachment Screening is included as **Appendix H**.

6.3 Additional Environmental Record Sources

6.3.1 Freedom of Information Act Requests

Freedom of Information Act (FOIA) requests were sent to the United States Environmental Protection Agency, Region 2 (USEPA), the New York State Department of Environmental Conservation, Region 2 (NYSDEC), the New York City Department of Environmental Protection (NYCDEP), and the New York City Mayor's Office of Environmental Remediation (OER). Copies of FOIA requests are included in **Appendix I**.

As of the date of this report, responses to FOIA requests have not been received, except as noted below. As responses were not provided within the allotted due diligence period, the records were deemed not to be "reasonably ascertainable" at this time. Should records become available at a later date, pertinent information will be forwarded as an addendum upon receipt.

The USEPA indicated that there were no records available for the subject property. The following information was obtained from the NYSDEC related to several spills in the area, including the large spill underlying the adjacent property, 25th Street, and adjacent to the subway tunnel along 4th Avenue, #93-05122.

<u>NYSDEC Spill Files</u>

PWGC requested files related to the following spills: 87-03559, 93-05122, 95-05109, 97-02464, 98-06222, 02-10214, and 16-10374. There is significant overlap between these spill files; therefore, they will largely be summarized as a whole instead of individual spills, where appropriate.

- Spill #87-03559 is related to the former ExxonMobil gasoline station on 24th Street and 5th Avenue. The spill is related to twelve 550-gallon USTs, mostly containing gasoline, that were removed in 2014. The spill was opened as the result of a gasoline tank test failure. Significantly elevated concentrations of MTBE and BTEX compounds were observed in on-site soils and on-site and off-site groundwater. A pilot test for an AS/SVE system failed. Remediation has largely been through source material removal when the USTs were removed. During the off-site investigation of this spill, a monitoring well was installed to the north of the gasoline station on the opposite side of 24th Street. Analytical results from this well showed a high concentration of BTEX (20,000 µg/L in 2010) with little MTBE, while the majority of on-site contamination was from MTBE. Groundwater flow at this site is identified as towards the north which may indicate that the site is cross-gradient from the subject property; however, if there is localized groundwater pumping, particularly near the subway tunnel, this may affect the groundwater flow direction. A pilot test for a soil vapor extraction (SVE) system was conducted in 2011 which failed. Additional sampling of wells contained BTEX concentrations exceeding 80,000 µg/L.
- A Con-Ed substation located on the NE corner of 24th Street and 5th Avenue was considered as a potential source for spill #93-05122, but was ruled out due to fingerprint analysis of the 93-05122 spill indicating diesel fuel whereas the Con-Ed substation contained cable oil in ASTs and a 1,000-gallon fuel oil UST. The UST is currently listed as closed in place as of 1998 and no further information has been provided.
- An investigation for spill #02-10214, located at 276-280 24th Street was previously discussed in the LTANKS section.
- On February 15, 2017, the NYSDEC conducted a subsurface investigation at 207 25th Street. Petroleum contamination was found in the soil, as shallow as 7 feet below grade, as well as in the groundwater. This spill, #16-10374, has been recently identified in 2018 as the likely source of the petroleum plume identified under spill #93-05122.
- Spill #93-05122, located at 25th street and 4th avenue (the R Line subway station), was opened on July 19, 1993 when oil was observed dripping onto the R Line subway platform under 4th avenue and between 25th and 26th streets. The oil had also drained from the platform and onto the tracks. The NYSDEC initially estimated spill #93-05122 to be greater than 100,000 gallons, but NYSDEC contractors later determined that the pool is much smaller. As part of the ongoing investigation and remediation of this spill, over 90 monitoring wells and even more soil borings have been installed to delineate the spill and identify potential responsible parties. Over the years of remediating this spill, NYSDEC contractors collected several petroleum samples for forensics analysis. The light non-aqueous phase liquid (LNAPL)

was identified as diesel or diesel/#2 fuel oil; samples were collected over several years from several different monitoring wells, a holding tank related to the remediation system, and directly from the diesel dispenser when the gasoline service station was still active at 737 4th Avenue. Comparison of the diesel from the dispenser and from the other LNAPL samples were contradictory. Age date samples indicated that the spill may have started between 1982 and 1992. The NYSDEC had considered the 737 4th Avenue property as a potential source, as well as several other properties in the area and conducted several investigations which have ruled out some properties and confirmed other properties as responsible parties. In 2001, red-dyed oil was observed in several monitoring wells on the southeastern side of the adjacent property and along 25th Street near 4th Avenue, including up-gradient of the subject property. Red dyed oil is indicative of high-sulfur fuels for off-road use or heating oil which use the same dye; however, heating oil dye is used in a fivefold concentration for heating oil. Several pictures were taken of dark red dyed oil removed from the spill area. LNAPL removal was conducted through an apparent groundwater pump and treat system with a holding tank for LNAPL recovery, manual bailing of LNAPL, and vacuum enhanced fluid recovery. As of 1999, over 34,000 gallons of LNAPL had been declared removed; however, it is unclear if that is pure LNAPL or a LNAPL/water mixture. At an unknown time, the LNAPL recovery system was no longer effective and shut down. At times, there have been lulls in the thickness of LNAPL observed in the wells, including low points in the 2000's and at other times, up to 6 to 7 feet of LNAPL have been recorded. Groundwater analytical results have contained elevated concentrations of volatile organic compounds consistent with gasoline while soil samples collected were determined to be from gasoline produced prior to 1985, including leaded gasoline. Following the NYSDEC investigation at 207 N 25th Street (Spill #16-10374), NYSDEC determined that the plume likely originated from 207 N 25th Street and not from 737 4th Avenue. Spill #93-05122 was closed on September 24, 2018.

- The USTs at 737 4th Avenue were removed in July 1999. The NYSDEC contractor overseeing the UST removal noted that contamination was only observed above the USTs, not below them. Soil samples collected beneath a waste oil UST and a fuel oil UST revealed little to no contamination. Following demolition of the gasoline station on the subject property in 2000, the site was excavated for the construction of the current Dunkin Donuts. Photographs from the excavation revealed that the excavation was approximately 10 to 12 feet below sidewalk grade and little to no staining was observed within the excavation or the stockpile of soil. A rainbow sheen was observed in one picture and appeared to be consistent with minor gasoline impact. Darker staining was also observed in a puddle in

one picture; however, NYSDEC reports indicate that little to no oil impact was observed in soils and some gasoline impact was observed in shallower soils, particularly near the pump islands located in the center and western portions of the property. Historic site plans indicate that the USTs were located along the northeastern property boundary, at a significant distance from the wells containing the thickest and most consistent measurements of LNAPL, but closest to the subject property.

6.3.2 Publicly Available Information

Information regarding the subject property available on the commercial real estate website www.propertyshark.com (an aggregator of publicly available real estate information) was reviewed to identify pertinent information. Review of publicly available information identified the following property information and/or potential environmental issues:

- The building was built in approximately 1960.
- Carstar Auto Body Repair is located at the property.
- A violation was identified by NYCDEP on August 9, 2017 with a description of chemical spill (iac). No additional information was provided.

Information regarding the subject property available on the New York City Department of Buildings (NYCDOB) database was reviewed to identify pertinent information. Review of publicly available information identified the following information:

- A certificate of occupancy dated January 22, 1965 for a public parking lot for 9 motor vehicles.
- A certificate of occupancy dated September 9, 2013 listing an auto vehicle repair shop and three retail stores.
- A permit was approved on September 26, 2003 for installation of an auto paint spray booth.
- Demolition permits were filed in 1959 and 1973. New building permits were filed in 1935, 1938, and 1973.

Copies of publicly available information are included in **Appendix I**.

7.0 SITE RECONNAISSANCE

7.1 Methodology and Limiting Conditions

Mr. Steven Labrecque of PWGC performed the site inspection on Thursday, January 24, 2019. Weather conditions during the inspection were rainy with a temperature of approximately 50° Fahrenheit.

The site inspection consisted of an inspection of the interior portions of the existing building, followed by inspection of the exterior portions of the property. Backroom areas in each of the four tenant spaces were not accessible and portions of the floor in the automotive shop were not visible due to the presence of cars and materials.

7.2 Aboveground Storage Tanks (AST)

PWGC did not identify ASTs at the site.

7.3 Underground Storage Tanks (UST)

PWGC did not identify evidence of USTs, such as fill ports or vent lines at the site.

7.4 Hazardous and Non-Hazardous Chemical Storage

PWGC observed chemical storage consisting of typical chemicals utilized at an automotive repair shop. In addition, a paint-like odor was emanating from the automotive repair shop.

7.5 Waste Generation, Storage, and Disposal

PWGC did not identify evidence of waste generation, storage or disposal at the site.

7.6 Polychlorinated Biphenyls (PCBs)

PWGC did not identify potentially PCB containing equipment such as electrical transformers or hydraulic lifts at the site. Current lifts for the automobiles in the automotive body shop appeared to be electric lifts.

7.7 Additional Site Conditions

The following is a summary of visual and/or physical observations made by PWGC at the time of the site inspection. Photographs of pertinent observations are included in **Appendix A**.

Table 7-1 - Additional Site Conditions

Condition	Identified
Interior drains, trenches or sumps.	No
Interior stains or corrosion	Yes[1]
Unusual odors	Yes[2]
Interior pools of liquid	No
Stained Soils or Pavement	No
Stressed Vegetation	No
Indications of solid waste disposal	No
Exterior ponds, pits, or lagoons	No
Wastewater or storm water discharge/disposal	No
Oil water separators/clarifiers	No
Septic Systems/Cesspools	No
Wells (Drinking water, monitoring wells, agricultural/ irrigation wells, or process water wells)	No
Petroleum or natural gas pipelines or easements	No
Other	No

1 – Some petroleum staining was observed on the floor of the automotive shop. Staining was not observed at cracks in the concrete slab. This is considered a *de minimus* condition.

2 – A paint-like odor was emanating from the automotive shop

7.8 Neighboring Properties

PWGC performed a cursory inspection of the neighboring properties from the subject site and public right of ways. The neighboring properties are used for residential, industrial, and retail purposes. Potential environmental concerns observed at neighboring properties included:

- An automotive shop located on the opposite side of 4th Avenue

8.0 INTERVIEWS

8.1 Current Owner/Occupant

PWGC was not granted access to the property; therefore, interviews with the current owner/occupants were not conducted.

8.2 Previous Environmental Reports

PWGC was provided with a Phase I ESA completed by Middleton Environmental Inc. on April 3, 2013. Relevant information included in the report that has not already been discussed is summarized below.

8.2.1 Phase I ESA – April 2013

- The existing buildings do not contain basements.
- The retail shops were constructed around 2012 and the rear building was constructed around 1960. The retail shops were not yet completed by the time the Phase I was prepared, an auto body shop was located in the rear building.
- The heating fuel source was natural gas, not oil. USTs and ASTs were not observed.
- A floor drain was observed inside one of the buildings and it was reportedly connected to the municipal sewer system. There was no sign of staining around the drain.

A copy of the Phase I ESA is included in **Appendix F.**

9.0 CONDITIONS OUTSIDE THE SCOPE OF ASTM 1527-13

9.1 Wetland Delineation

Based on review of the EDR Radius Map Report, which includes State and Federal wetlands, it appears that State and/or Federal wetlands are not present on the subject property. Based on review of the NYSDEC Environmental Resources Mapper, the site does not appear to be located within a wetlands checkzone.

Based on review of the EDR Radius Map Report, it appears that the nearest State or Federal wetland is the Gowanus Bay, located approximately ¼ mile west of the subject property.

9.2 Radon Risk Evaluation

Radon is a colorless, radioactive; inert gas formed by the decay of radium and may be present in soils and rocks containing granite, shale, phosphate and pitchblende. The USEPA's "Map of Radon Zones for New York State", September 1993 indicates that Kings County is not a radon risk area. The EDR report provides information from the New York State Department of Health radon survey which indicates that the average result for sites tested in Kings County is 0.750 Pico curies per liter (pCi/L) in the living area, which is below the USEPA radon action level of 4 pCi/L, and 100% of sites tested in Kings County were below the action level of 4 pCi/L in the living area.

9.3 Asbestos

The front portion of the site was built between 2012 and 2013 after restrictions have been placed on the use of ACM; however, the rear building was likely constructed around 1960. If the property is to be redeveloped or renovated, the NYCDOB may require an asbestos inspection.

9.4 Lead-Based Paint (LBP)

The front portion of the site was built between 2012 and 2013 after restrictions have been placed on the use of lead-based paint; however, the rear building was likely constructed around 1960. If the property is to be redeveloped or renovated, the NYCDOB may still require a lead-based paint inspection.

9.5 Mold

PWGC did not observe mold in the portions of the building that access was granted.

10.0 FINDINGS AND OPINIONS

Based upon reconnaissance of the subject and surrounding properties, interviews and review of historical records and regulatory agency databases, the following potential RECs have been identified:

Onsite

- The current and historic industrial usage of the property.

Offsite

- Historic and current usage of auto repair stations, gasoline service stations, and other industrial uses at several nearby properties.

Potential RECs identified at the subject property were evaluated to determine whether items initially suspected to be RECs are in fact RECs. Evaluation of potential RECs are as follows:

- The site was historically utilized as a metals manufacturer, a junk yard, and an auto repair shop; use as an auto body repair shop has continued to the present day. The majority of these activities appeared to have been conducted in the rear portion of the property along 24th Street. Petroleum compounds and chemical solvents are typically associated with these activities. Based upon the long history of industrial uses and the likely presence of these chemicals, the usage of the site represents a REC.
- Several off-site properties have been identified with petroleum spills that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property. Due to the open status of these spills, their presence is considered a REC.

11.0 CONCLUSIONS AND RECOMMENDATIONS

PWGC has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 for the subject property. There were no exceptions to, or deletions from, this practice except as noted in Section 12.0 of this report. PWGC evaluated the findings associated with the subject property and identified two RECs with respect to the subject property.

Based on the identified RECs, PWGC recommends a Phase II ESA be performed at the site to determine if the historic usage of the property has resulted in impact to the subsurface and to determine if off-site spills have impacted groundwater or soil vapor beneath the site.

12.0 DEVIATIONS

This Phase I ESA was conducted in accordance with the scope and limitations of the ASTM Standard E 1527-13 (Standard Practices for Environmental Site Assessment: Phase I Environmental Site Assessment Process) and 40 CFR Part 312 (Standards and Practices for All Appropriate Inquiry; Final Rule). Excluding data gaps identified in Section 2.8 and additional services outlined in Section 9.0, there were no deviations or deletions from this practice.

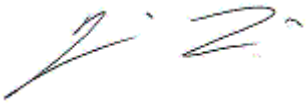
13.0 REFERENCES

All Appropriate Inquiry, Final Rule, 40 CFR Part 312.

Standard practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Standard E 1527-13.

14.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.



Jennifer Lewis, PG
Senior Project Manager

Report Completion Date: January 4, 2019, updated January 25, 2019

Appendix II

Phase 2 Environmental Site Assessment (ESA):

Brooklyn Block 652, Lot 1 (Executive Summary)

&

Brooklyn Block 652, Lot 7 (Executive Summary)

737-747 4TH AVENUE
BROOKLYN, NEW YORK
BLOCK 652, LOT 1

PHASE II
ENVIRONMENTAL SITE ASSESSMENT
(ASTM 1903-11)

PREPARED FOR:

Totem Group, LLC.
55 Washington St., Suite 710
Brooklyn, NY 11201
tucker@totembrooklyn.com

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Jennifer Lewis, PG, Senior Project Manager — JenniferL@pwgrosser.com
James P. Rhodes, PG, COO — JimR@pwgrosser.com

PWGC Project Number: TOT1802

AUGUST 2018

PHASE II ENVIRONMENTAL SITE ASSESSMENT
737-747 4TH AVENUE, BROOKLYN, NY

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737-747 4TH AVENUE, BROOKLYN, NY

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ACRONYM	DEFINITION
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
DER	Department of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
EM	Electromagnetic
ESA	Environmental Site Assessment
GQS	Groundwater Quality Standard
GV	Guidance Value
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyl
PID	Photo-ionization Detector
PWGC	P.W. Grosser Consulting, Inc.
QA/QC	Quality Assurance / Quality Control
REC	Recognized Environmental Condition
SCO	Soil Cleanup Objective
SVOC	Semi-volatile Organic Compound
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Totem Group, LLC (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Phase II Environmental Site Assessment (ESA) for the property located at 737-747 4th Avenue in Brooklyn NY. The purpose of the Phase II ESA was to further evaluate recognized environmental conditions (RECs) identified in the Phase I ESA to obtain sound, scientifically valid data concerning actual property conditions.

Work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1903-11 (Standard Practices for Environmental Site Assessment: Phase II Environmental Site Assessment Process) and in substantial conformance with the New York State Department of Environmental Conservation's (NYSDEC's) Division of Environmental Remediation's (DER's) Technical Guidance for Site Investigation and Remediation, May 2010 (DER-10).

2.0 BACKGROUND

2.1 Site Description and Features

The subject property consists of one parcel located at 737-747 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The property is identified in the Brooklyn Tax Map as Block 652, Lot 1. The subject property measures approximately 15,017 square feet and is improved with a Dunkin Donuts and an asphalt paved parking lot. A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**.

2.2 Physical Setting

The topography of the site and surrounding area was reviewed from the USGS 7.5-minute series topographic map for the Brooklyn quadrangle. The property elevation is approximately 35 feet above the National Geodetic Vertical Datum (NGVD). Regional physiographic conditions are summarized below.

2.3 Site History and Land Use

Historical usage of the subject property indicates that it was first developed between 1906 and 1924 and used as a gasoline and auto repair service station up until at least 1997, was under construction from at least 2001 to 2003, and was used for commercial purposes from at least 2004 to 2015. Historical usage of the subject property is indicative of potential RECs because of the presence of gasoline tanks and an auto repair shop.

2.4 Adjacent Property Land Use

Review of historical information reviewed for the properties surrounding the subject property indicate that the area has been sparsely developed since at least 1888 and nearly fully developed since at least 1924. Surrounding properties have been used primarily as retail or industrial uses, including gasoline stations and electrical substations.

2.5 Summary of Previous Assessments

The subject property and neighboring properties have undergone several ESAs related to an open New York State Department of Environmental Conservation (NYSDEC) spill reported in 1993. Spill #93-05122 was opened when oil was observed seeping through the wall of the subway tunnel adjacent to the subject property. Each of these ESAs performed were conducted under the oversight of the NYSDEC and by their approved contractors; summaries of the ESAs are included in PWGC's Phase I ESA. There were approximately 25 monitoring wells installed on the subject property or on the adjacent sidewalk along 25th Street as part of these ESAs.

2.5.1 Phase I Environmental Site Assessment Report (March 2018)

A Phase I ESA was prepared for the subject property in March 2018 by PWGC. The Phase I ESA identified the following RECs associated with subject property:

- The site was historically utilized as a gasoline service station and auto repair shop for approximately 8 decades. This long history of usage has resulted in the site's inclusion in several environmental databases and the installation of numerous monitoring wells throughout the subject property and surrounding areas related to an active spill being investigated and remediated by the NYSDEC. Information from the NYSDEC indicates that there was likely some minor gasoline contamination in the soils beneath the site and that there is gasoline contamination in the groundwater beneath the site. It is unlikely that the plume of oil associated with spill #93-05122 originated from the subject property; however, there is the potential that the gasoline impact in the groundwater is originating from the subject property and/or other nearby properties. The presence of gasoline contamination beneath the site is considered a REC.
- The two closed on-site spill numbers appeared to be minimal in nature and actual spills or leaks of significant product was not identified. Due to the closed status of these spills, they are HRECs.
- Several off-site properties have been identified that have the potential to affect environmental conditions beneath the subject property related to the migration of groundwater and soil vapor beneath the subject property, most notably in the form of spill #93-05122. Due to the open status of these spills and their known migration onto the subject property, their presence is considered a REC.

The Phase I ESA recommended that a Phase II ESA be performed at subject property.

3.0 WORK PERFORMED AND RATIONALE

3.1 Scope of Assessment

The Phase II ESA included the following tasks:

- Soil Quality Evaluation
- Groundwater Quality Evaluation

3.2 Soil Quality Evaluation

To characterize soil quality, soil borings were installed throughout the subject property. This work was conducted on May 24, 2018. Boring locations were focused in areas of potential concern as identified by the Phase I ESA. A total of seven soil borings were installed during the investigation. Soil boring locations are illustrated on **Figure 3**. **Figure 3** also includes the approximate locations of the former tank field and pump island.

3.2.1 Soil Boring Protocol

Coastal Environmental Solutions, Inc. of Medford, NY provided environmental drilling services during the investigation. A Geoprobe 6610 drill rig was utilized to install the environmental soil borings. Prior to performing each soil boring, 10-mil polyethylene sheeting, sufficiently large to hold the anticipated number of soil cores was laid on the ground in the area where each soil boring was performed.

Soils were collected continuously from ground surface to an approximate depth of 25 feet below surface grade.

The soil cores were placed on the 10-mil polyethylene sheeting in the order they came out of the ground. The acetate liners were cut open and the soil core was screened for the presence of volatile organic vapors, which are commonly associated with petroleum products and industrial solvents, utilizing a photo-ionization detector (PID). Each soil core was classified by a hydrogeologist using the Unified Soil Classification System (USCS). A soil boring log was developed for each location (**Appendix A**) and includes the characterization and screening data.

Soils generally consisted of historic fill material in the first 2 to 5 feet of the boring with medium to fine grained sands at deeper depths. Groundwater was encountered around 22 feet in each boring. The lowest PID readings were obtained in soil borings SB005, SB006, and SB007 – these borings are located in the northern and eastern portions of the property. PID readings for the borings located in the western and southern portions of the property (SB001 through SB004) were low through most of the vadose zone, but higher readings were obtained closer to the water table with the highest reading obtained from SB003 at 500 ppm at the water table. Petroleum

odors were observed in borings SB001 through SB004 that followed the PID readings with stronger odors observed closer to the water table.

3.2.2 Sample Collection Protocol

Since gross impact was not observed in the vadose zone in the seven soil borings, samples were collected from the 2 foot interval above the groundwater table. Samples were analyzed for the following chemical analysis:

- Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260, CP-51 list
- Semi-Volatile Organic Compounds (SVOCs) by USEPA Method 8270, CP-51 list

The samples were limited to the CP-51 lists of compounds as this list specifically targets compounds related to gasoline and fuel oil. Samples collected for volatile organic analysis were collected directly from the acetate liners utilizing encore sampling devices. The remaining sample volumes were transferred to a stainless-steel bowl and homogenized. Once homogenized, samples were transferred to laboratory supplied glassware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to Alpha Analytical Laboratories of Westborough, Massachusetts (Alpha), a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory, for the above analysis following NYSDEC Analytical Services Protocol (ASP)-Category A Deliverables.

3.2.3 Soil Analytical Results

Soil analytical results were compared to the NYSDEC's Title 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 and Final Commissioner Policy, CP-51 Soil Cleanup Levels (SCOs) for fuel oil contaminated sites.

VOCs were detected at concentrations exceeding CP-51 SCOs in two of the soil borings, SB002 and SB004, which are located closest to 25th Street with the highest concentrations observed in SB004 (total VOC [TVOC] concentration of 247.8 mg/kg). According to the historic ESAs, groundwater flow direction is towards the north or northwest, indicating that SB004 is located on the up-gradient side of the property. Benzene was non-detect or contained an estimated concentration less than the reporting limit in each of the samples.

SVOCs were non-detect or less than CP-51 SCOs in each of the seven soil samples.

Analytical results are detailed in **Table 1** and the complete laboratory analytical report is included in **Appendix B**. **Figure 3** contains a spider diagram of VOC exceedances of CP-51 SCOs.

3.3 Groundwater Quality Evaluation

To characterize groundwater quality, groundwater samples were collected throughout the subject property. Groundwater sampling locations were focused in areas of potential concern as identified by the Phase I ESA and were collected from the previously installed monitoring wells. A total of ten groundwater samples were collected during the investigation. Eight of the groundwater samples were collected on April 6, 2018 and based upon those results, two additional groundwater samples were collected on May 24, 2018. Groundwater sampling locations are illustrated on **Figure 3**. The monitoring wells that were selected were in areas of concern, such as near the former tank field and pump island, areas where light non-aqueous phase liquid (LNAPL) had been encountered during the NYSDEC's investigations, and up-gradient and down-gradient of the site to determine general groundwater quality migrating on-site and off-site.

3.3.1 Sampling Collection Protocol

Prior to sampling, groundwater monitoring of the wells consisted of collecting and recording depth to water, depth to LNAPL if applicable, and total well depth measurements for the selected monitoring wells at the site. Water levels were collected using a Solinst Oil / Water Interface Probe or equivalent which was decontaminated between each well. LNAPL was detected in three of the monitoring wells: MW-8, MW-8A, and MW-31. Wells MW-8 and MW-8A are located in the sidewalk along 25th Street and MW-31 is located on the up-gradient side of the property. LNAPL thicknesses were between 0.85 feet and 1.42 feet and consisted of oil. Groundwater field data is detailed on **Table 2**.

Following the well gauging, wells were purged using a decontaminated submersible pump fitted with disposal polyethylene tubing. During purging, the groundwater parameters pH, temperature, conductivity, oxygen reduction potential (ORP), turbidity, and dissolved oxygen were recorded with a Horiba U52 water quality instrument. When purging was complete, the Horiba was disconnected and the groundwater sample was collected directly from the downhole tubing and placed in pre-cleaned laboratory-supplied glassware and stored in a cooler on ice for transport to Alpha. Groundwater samples were analyzed for the following:

- VOCs by USEPA Method 8260, CP-51 list
- SVOCs by USEPA Method 8270, CP-51 list

Copies of the groundwater sampling data sheets containing the field parameters recorded and purge volumes for each sampling point are attached in **Appendix C**.

3.3.2 Groundwater Analytical Results

Groundwater analytical results were compared to NYSDEC groundwater quality standards (GQS) / guidance values (GVs) specified in 6 NYCRR Part 703.

Monitoring wells MW-1, MW-3, MW-80, MW-81, and MW-90 were each non-detect for VOCs. Each of these wells is located on the north or eastern side of the property. MW-1, MW-3, and MW-80 are located down-gradient of the former tank field and/or the former pump island. MW-89 is also in the vicinity of the former pump island and contained minor VOC detections at concentrations less than GQS. Wells MW-84, MW-94, MW-6, and MW-86 each contained exceedances of at least one VOC GQS with MW-94 containing the highest concentrations (TVOC concentration of 1,077 µg/L). MW-94 is located on the up-gradient side of the property; MW-84 is located down-gradient of MW-94 and contains a benzene concentration of 300 µg/L which is an order of magnitude higher than the detectable benzene concentrations in the other samples.

There were several SVOCs detected at low level concentrations exceeding GQS in each sample except the one from MW-94; an elevated concentration of Naphthalene in MW-94 raised the reporting limits for each of the compounds in MW-94 to levels higher than most of the detectable concentrations in the other samples. Naphthalene is a compound that exhibits characteristics of both VOCs and SVOCs; the detected concentration in the SVOC sample is similar to the detected concentration in the VOC sample.

Analytical results are detailed in **Table 3** and the complete laboratory analytical report is included in **Appendix B**. **Figure 3** contains a spider diagram of VOC exceedances of GQS.

4.0 CONCLUSIONS

Based upon the recommendations of a March 2018 Phase I ESA prepared by PWGC, a Phase II was conducted. The Phase II ESA included an evaluation of soil and groundwater quality. The field work was conducted between April and May 2018.

Seven soil borings were conducted on-site. PID readings and olfactory observations indicated that impact was not observed in the vadose zone, but higher readings and stronger odors were obtained closer to the groundwater table. The highest PID readings were obtained at the groundwater table and in the borings closest to the up-gradient side of the property. VOCs were detected at concentrations exceeding CP-51 SCOs in two of the soil borings, SB002 and SB004, which are located closest to 25th Street with the highest concentrations observed in SB004 (TVOC concentration of 247.8 mg/kg). SVOC impact was not identified.

Ten previously installed groundwater monitoring wells were gauged and sampled. LNAPL was observed in three of the wells located on the up-gradient side of the property or on the adjacent sidewalk, measuring between 0.85 feet and 1.42 feet and consisting of oil. Groundwater analytical results indicated that VOC impact to the groundwater is limited to the up-gradient portion of the property and SVOC impact is observed site-wide at low level concentrations exceeding the GQS.

As NYSDEC indicated that they are in the process of closing Spill #93-05122, PWGC recommends no further action at this time.

5.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

Jennifer Lewis, PG
Senior Project Manager

James P. Rhodes, PG
COO

Report Completion Date: August 2, 2018

6.0 REFERENCES

6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6.

6 NYCRR Part 703 Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations.

CP-51 / Soil Cleanup Guidance.

DER-10 / Technical Guidance for Site Investigation and Remediation.

Standard practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, ASTM Standard E 1903-11.

PWGC, Phase I ESA, March 2018.

7.0 LIMITATIONS

The conclusions presented in this report are professional opinions based on the data described in this report. These opinions have been arrived at in accordance with currently accepted engineering and hydrogeologic standards and practices applicable to this location, and are subject to the following inherent limitations:

1. The data presented in this report are from visual inspections and examination of records prepared by others. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration of the site, analysis of data, and re-evaluation of the findings, observations, and conclusions presented in this report.
2. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. The scope of work was defined by the request of the client.
3. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported, findings, observations, or conclusions. These are based solely upon site conditions in existence at the time of the investigation, and other information obtained and reviewed by PWGC.
4. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such.
5. This report is based, in part, on information supplied to PWGC by third-party sources. While efforts have been made to substantiate this third-party information, PWGC cannot attest to the completeness or accuracy of information provided by others.

731 4TH AVENUE
BROOKLYN, NEW YORK
BLOCK 652, LOT 7

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ASTM 1903-11)

PREPARED FOR:

Totem Group, LLC.
55 Washington St., Suite 710
Brooklyn, NY 11201

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Jennifer Lewis, PG, Senior Project Manager — JenniferL@pwgrosser.com
James P. Rhodes, PG, COO — JimR@pwgrosser.com

PWGC Project Number: TOT1803

MARCH 2019

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
731 4TH AVENUE, BROOKLYN, NY

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APPENDICES

ACRONYM	DEFINITION
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
DER	Department of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
EM	Electromagnetic
ESA	Environmental Site Assessment
GQS	Groundwater Quality Standard
GV	Guidance Value
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyl
PID	Photo-ionization Detector
PWGC	P.W. Grosser Consulting, Inc.
QA/QC	Quality Assurance / Quality Control
REC	Recognized Environmental Condition
SCO	Soil Cleanup Objective
SVOC	Semi-volatile Organic Compound
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Totem Group, LLC (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Limited Phase II Environmental Site Assessment (ESA) for the property located at 731 4th Avenue in Brooklyn NY. The purpose of the Limited Phase II ESA was to further evaluate recognized environmental conditions (RECs) identified in a Phase I ESA to obtain sound, scientifically valid data concerning actual property conditions.

Work was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard E 1903-11 (Standard Practices for Environmental Site Assessment: Phase II Environmental Site Assessment Process) and in substantial conformance with the New York State Department of Environmental Conservation's (NYSDEC's) Division of Environmental Remediation's (DER's) Technical Guidance for Site Investigation and Remediation, May 2010 (DER-10).

2.0 BACKGROUND

2.1 Site Description and Features

The subject property consists of one parcel located at 731 4th Avenue in the Greenwood Heights neighborhood of Brooklyn, NY. The property is identified in the Brooklyn Tax Map as Block 652, Lot 7. The subject property measures approximately 5,017 square feet and is improved with a commercial retail shop with three units and an auto body shop with two bays. There are no landscaped areas. A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**.

2.2 Physical Setting

The topography of the site and surrounding area was reviewed from the USGS 7.5-minute series topographic map for the Brooklyn quadrangle. The property elevation is approximately 36 feet above the National Geodetic Vertical Datum (NGVD). Regional physiographic conditions are summarized below.

2.3 Site History and Land Use

Historical usage of the subject property indicates that it was first developed prior to 1888 as a residential property and was converted to industrial uses by 1906 which included the following uses indicative of potential recognized environmental concerns (RECs): a junk yard, metal manufacturer, and an auto repair shop.

2.4 Adjacent Property Land Use

Review of historical information reviewed for the properties surrounding the subject property indicate that the area has been sparsely developed since at least 1888 and nearly fully developed since at least 1924. Surrounding properties have been used primarily as retail or industrial uses. The industrial usage of the properties in the surrounding area are indicative of potential RECs.

2.5 Summary of Previous Assessments

PWGC was provided with a Phase I ESA completed by Middleton Environmental Inc. on April 3, 2013. There were no RECs identified as part of this Phase I ESA.

PWGC conducted a Phase I ESA in January 2019 which identified two RECs: the current and historic industrial usage of the subject property (metals manufacturer, junk yard, auto repair shop) and the historic industrial usage of the neighboring properties.

3.0 WORK PERFORMED AND RATIONALE

3.1 Scope of Assessment

As access to the property was not granted, the Limited Phase II ESA included the following tasks:

- Soil Vapor Quality Evaluation

3.2 Soil Vapor Quality Evaluation

To evaluate if historic usage of the property has resulted in impact to the soil vapor immediately adjacent to the property, a soil vapor investigation was performed. As access to the property was not granted, five soil vapor probes were installed on the neighboring property to the southwest (currently a Dunkin Donuts) and on the adjacent sidewalk along 24th Street, as shown on **Figure 3**. An ambient air control sample had also been setup up-wind during the soil vapor sampling; however, the manager of the Dunkin Donuts moved the summa canister inside the Dunkin Donuts during the collection process, so this sample was discarded. The objective of this soil vapor quality evaluation is an attempt to provide an indication if impact exists beneath the subject property given the restricted access to the site. The soil vapor probes were installed on February 24, 2019. Weather during this sampling event was overcast with periods of light rain, wind, and a temperature of approximately 50° Fahrenheit.

3.2.1 Sampling Protocol

Soil vapor samples were collected into 2.7-liter Summa® vacuum canisters fitted with 2-hour flow controllers. The samplers were batch certified clean by the laboratory. Proper quality assurance (QA) / quality control (QC) protocol was followed during the collection of soil gas samples to ensure that cross-contamination in the field did not occur. The samples were submitted under proper chain of custody procedures to Alpha Analytical Laboratories of Westboro, MA for analysis of VOCs by USEPA Method TO-15.

Temporary soil vapor probes were installed approximately 2 inches below the asphalt drive-thru and concrete sidewalk. Vapor sampling points consisted of dedicated polyethylene tubing to grade; the annulus around the tubing was filled with clean sand, and the sampling point was sealed with bentonite grout. Prior to sampling the integrity of the sampling port seals was tested using tracer gas analysis. The environment surrounding the seal was enriched with the tracer gas, helium, as readings were collected through the sampling probe with a portable helium detector. Tracer gas readings collected from each soil vapor probe were acceptable indicating the seals were intact and the sampling probes were acceptable for sample collection.

After the initial tracer gas test was performed, one to three volumes of the sample tubing was purged prior to collecting samples. Flow rates for both purging and collecting did not exceed 0.2 liters per minute to minimize potential indoor air infiltration during sampling.

3.2.2 Analytical Results

As New York State has not developed standards or guidance levels for soil vapor concentrations, soil vapor sample analytical data were compared to the USEPA Vapor Intrusion Screening Levels (VISLs) specified at https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-level-calculator.

Two compounds in different soil vapor samples exceeded their respective VISLs. Sample VP001 contained an exceedance of 1,3-Butadiene (5.66 µg/m^3) exceeding its VISL of 3.12 µg/m^3. The compound 1,3-Butadiene is utilized in industry as a monomer in the production of synthetic rubber which is not known to have occurred at this site. It is also commonly found in ambient air in urban and suburban areas as a consequence of emissions from vehicles. Sample VP005 contained an exceedance of Chloroform (21.7 5.66 µg/m^3) exceeding its VISL of 4.07 µg/m^3. Chloroform may be released to the air as a result of its formation in the chlorination of drinking water and wastewater or from use/disposal at pulp and paper mills, hazardous waste sites, or sanitary landfills. These activities are also not known to have occurred at the subject property.

Analytical results for the sub-slab vapor samples are shown on **Table 1**. The laboratory data report is included as **Appendix A**.

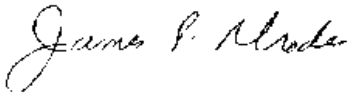
4.0 CONCLUSIONS

Based upon the recommendations of a January 2019 Phase I ESA prepared by PWGC, a Limited Phase II was conducted. The Phase II ESA included an evaluation of soil vapor quality. The field work was conducted February 24, 2019 and included the installation of five soil vapor probes were installed immediately beneath the asphalt parking lot southwest of the subject building and the sidewalk northeast of the subject building. Analytical results indicated that VOCs, including chlorinated solvents and petroleum related compounds, were detected; however, based on a comparison of the detectable concentrations to the USEPA Vapor Intrusion Screening Levels and our analysis described above, these detections do not appear to be related to the subject property or require action. Although PWGC cannot rule out impact beneath the subject property; shallow soil gas immediately adjacent to the site does not reflect that a significant source of VOCs exists in the immediate area.

5.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

Jennifer Lewis, PG
Senior Project Manager



James P. Rhodes, PG
COO

Report Completion Date: March 1, 2019

6.0 REFERENCES

6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6.

6 NYCRR Part 703 Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations.

CP-51 / Soil Cleanup Guidance.

DER-10 / Technical Guidance for Site Investigation and Remediation.

Standard practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, ASTM Standard E 1903-11.

PWGC, Phase I ESA, January 2019.

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Appendix III

New York Landmarks Preservation Commission (LPC) Environmental Review Letter

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: **737 FOURTH AVE. REZONING**
Date received: 10/12/2018

Properties with no Architectural or Archaeological significance:
1) ADDRESS: 737 4 AVENUE, BBL: 3006520001
2) ADDRESS: 731 4 AVENUE, BBL: 3006520007

Gina Santucci

10/24/2018

SIGNATURE DATE
Gina Santucci, Environmental Review Coordinator

File Name: 33722_FSO_DNP_10152018.doc