

40-31 82nd Street Rezoning

Environmental Assessment Statement

CEQR No. 18DCP045Q

Prepared for:
30 GC TIC, LLC

Prepared by:
Philip Habib & Associates

January 25, 2018

40-31 82nd Street Rezoning

Environmental Assessment Statement

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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 40-31 82nd Street Rezoning

3. Reference Numbers

CEQR REFERENCE NUMBER (to be assigned by lead agency)
18DCP045Q

BSA REFERENCE NUMBER (if applicable)

ULURP REFERENCE NUMBER (if applicable)
180098ZMQ; N 180099 ZRQ

OTHER REFERENCE NUMBER(S) (if applicable)
(e.g., legislative intro, CAPA)

4a. Lead Agency Information

NAME OF LEAD AGENCY

New York City Department of City Planning

NAME OF LEAD AGENCY CONTACT PERSON

Robert Dobruskin, AICP, Director, Environmental Review and Assessment Division

4b. Applicant Information

NAME OF APPLICANT

30 GC TIC, LLC

NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON

Steven Sinacori, Akerman LLP

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5. Project Description

30 GC TIC, LLC (the “Applicant”) is seeking two discretionary zoning actions in order to facilitate the redevelopment of 40-31 82nd Street (Block 1493, Lot 15) in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4 (the “proposed development site”) (refer to Figure 1, “Project Location”). The discretionary actions include: (i) a zoning map amendment to rezone part of the proposed development site from R6/C1-3 to a C4-5X (R7X equivalent) district (refer to Figure 2, “Zoning Change Map”); and, (ii) a zoning text amendment to ZR Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area. The Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf), located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program. The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

Project Location

BOROUGH Queens

COMMUNITY DISTRICT(S) 4

STREET ADDRESS 40-31 82nd Street

TAX BLOCK(S) AND LOT(S) Block 1493, 15

ZIP CODE 11373

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Baxter Street, Ithaca Street, 82nd Street

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R6/C1-3

ZONING SECTIONAL MAP NUMBER 9d

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

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

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

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

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.): 23,428 Waterbody area (sq. ft) and type: N/A
 Roads, buildings, and other paved surfaces (sq. ft.): 23,428 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):
 NUMBER OF BUILDINGS: 1 GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 203,830
 HEIGHT OF EACH BUILDING (ft.): 145 NUMBER OF STORIES OF EACH BUILDING: 13

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: 21,648 sf
 The total square feet not owned or controlled by the applicant: 21,648 sf

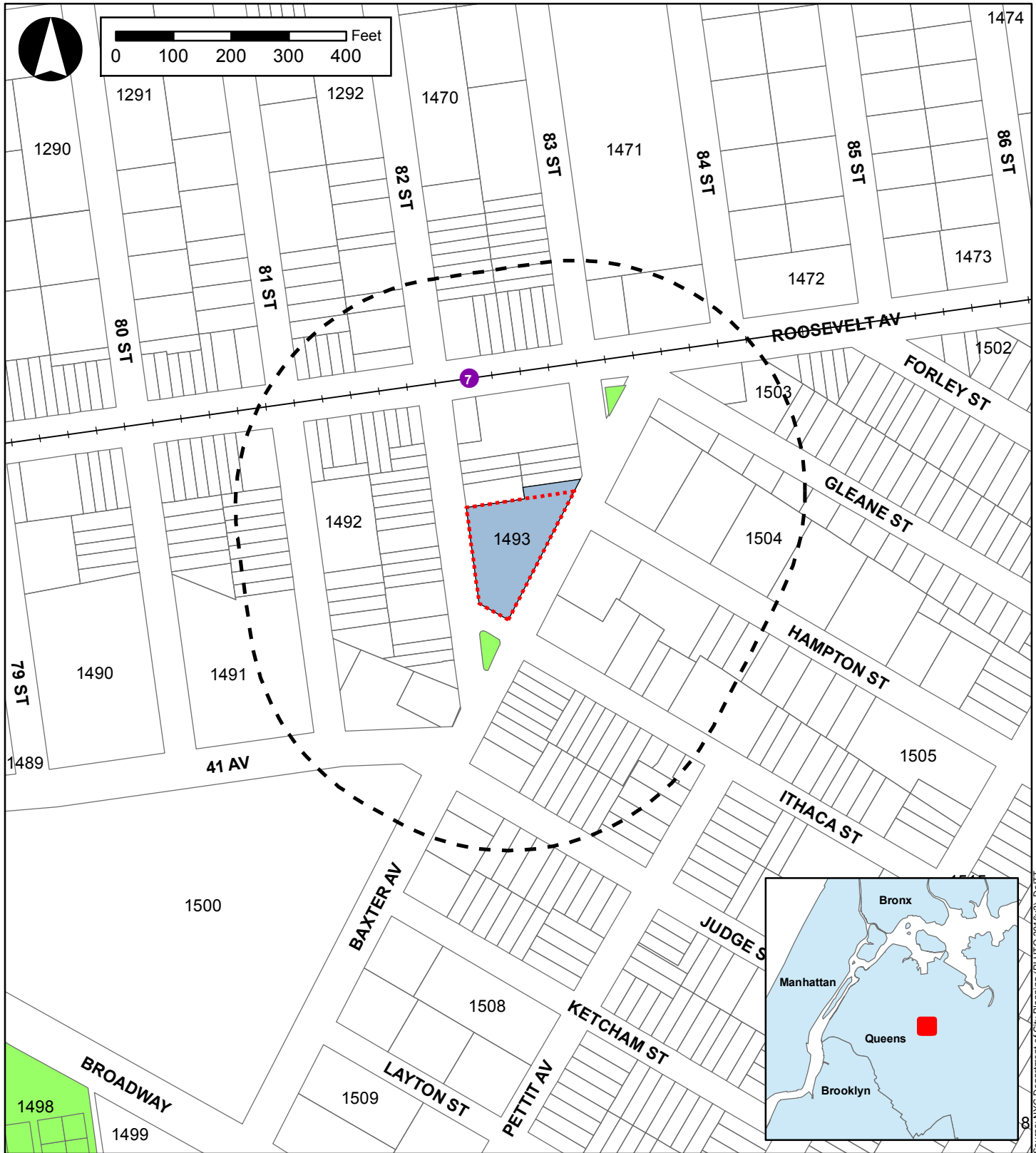
Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? YES NO

If "yes," indicate the estimated area and volume dimensions of subsurface permanent and temporary disturbance (if known):
 AREA OF TEMPORARY DISTURBANCE: 23,428 sq. ft. (width x length) VOLUME OF DISTURBANCE: TBD cubic ft. (width x length x depth)
 AREA OF PERMANENT DISTURBANCE: 23,428 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.)	125,460	76,375	1,996	N/A
Type (e.g., retail, office, school)	120 units	Local Retail	Art exhibition space	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: 310 NUMBER OF ADDITIONAL WORKERS: 237
 Provide a brief explanation of how these numbers were determined: New residents based on avg. HH size of 2.58 within half mile



Source: NYC Department of City Planning (PLUTO 2016v2), DoIT

Legend

- 400-Foot Radius
- Proposed Rezoning Area
- Proposed Development Site
- 1507 Tax Blocks
- Elevated Subway
- 82nd St. Subway Station
- Open Space



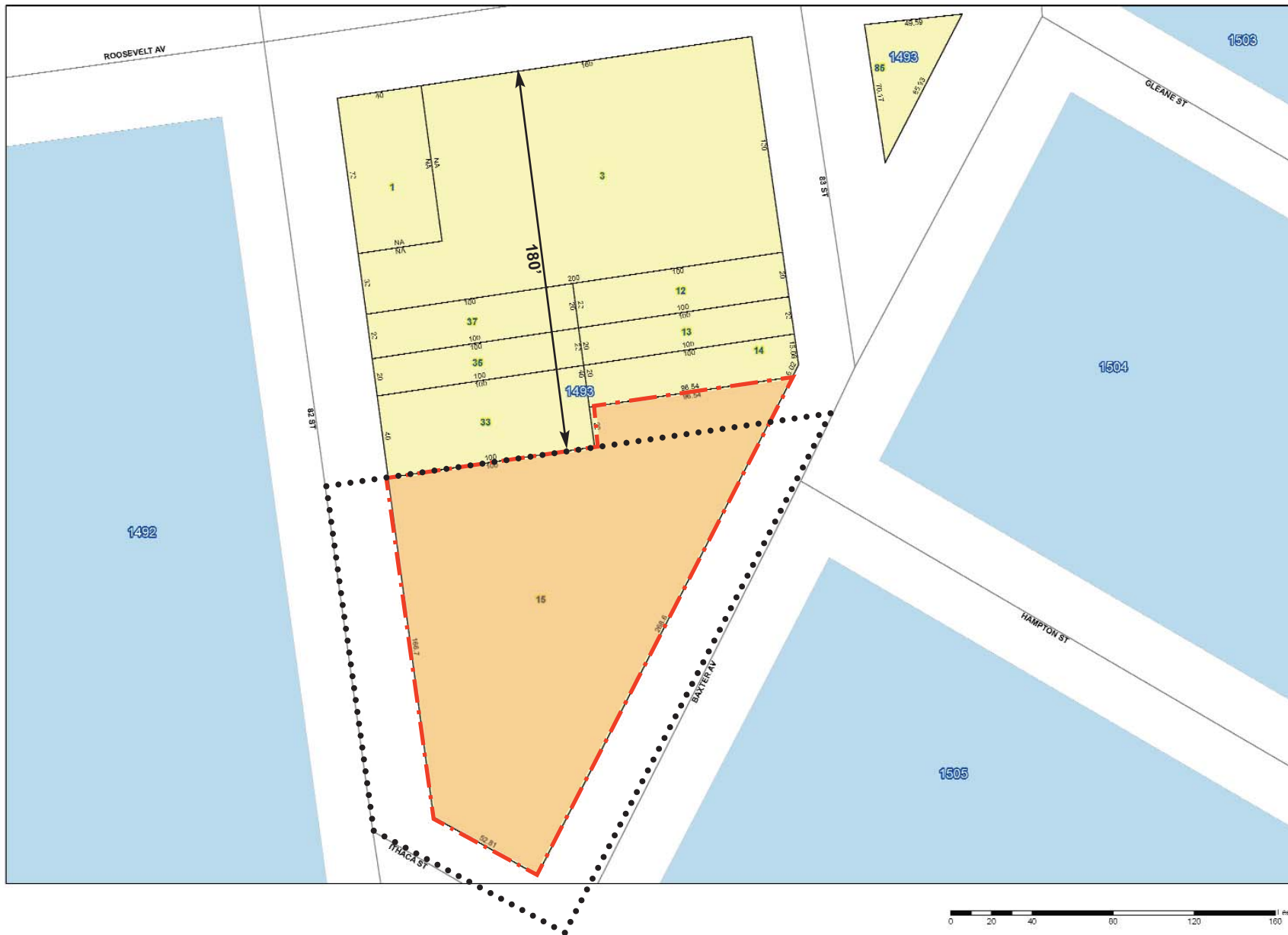
NYC Digital Tax Map

Effective Date : 12-07-2008 18:02:54
End Date : Current
Queens Block: 1493

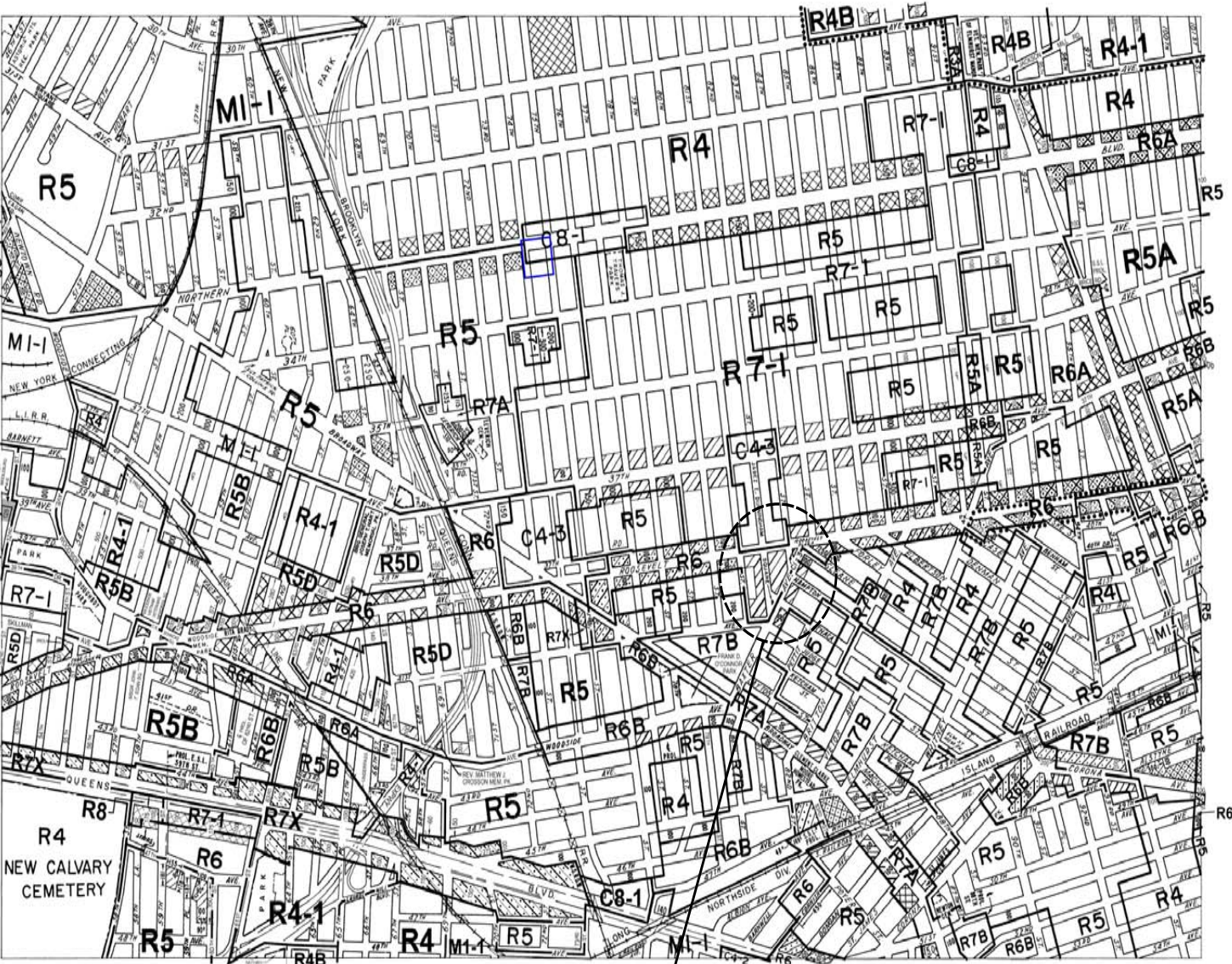
Legend

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

- Proposed Rezoning Area
- Applicant-Owned Proposed Development Site



Click blue outline on map to view diagram of proposed zoning change



Proposed Project Area

ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:
 The number(s) and/or letter(s) that follows an R, C or M District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

- R – RESIDENTIAL DISTRICT
- C – COMMERCIAL DISTRICT
- M – MANUFACTURING DISTRICT

SPECIAL PURPOSE DISTRICT
 The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.

AREA(S) REZONED

Effective Date(s) of Rezoning:
 10-30-2013 C 130344 ZMQ

Special Requirements:
 For a list of lots subject to CEQR environmental requirements, see APPENDIX C.
 For a list of lots subject to "d" restrictive declarations, see APPENDIX D.
 For Inclusionary Housing designated areas and Mandatory Inclusionary Housing areas on this map, see APPENDIX F.

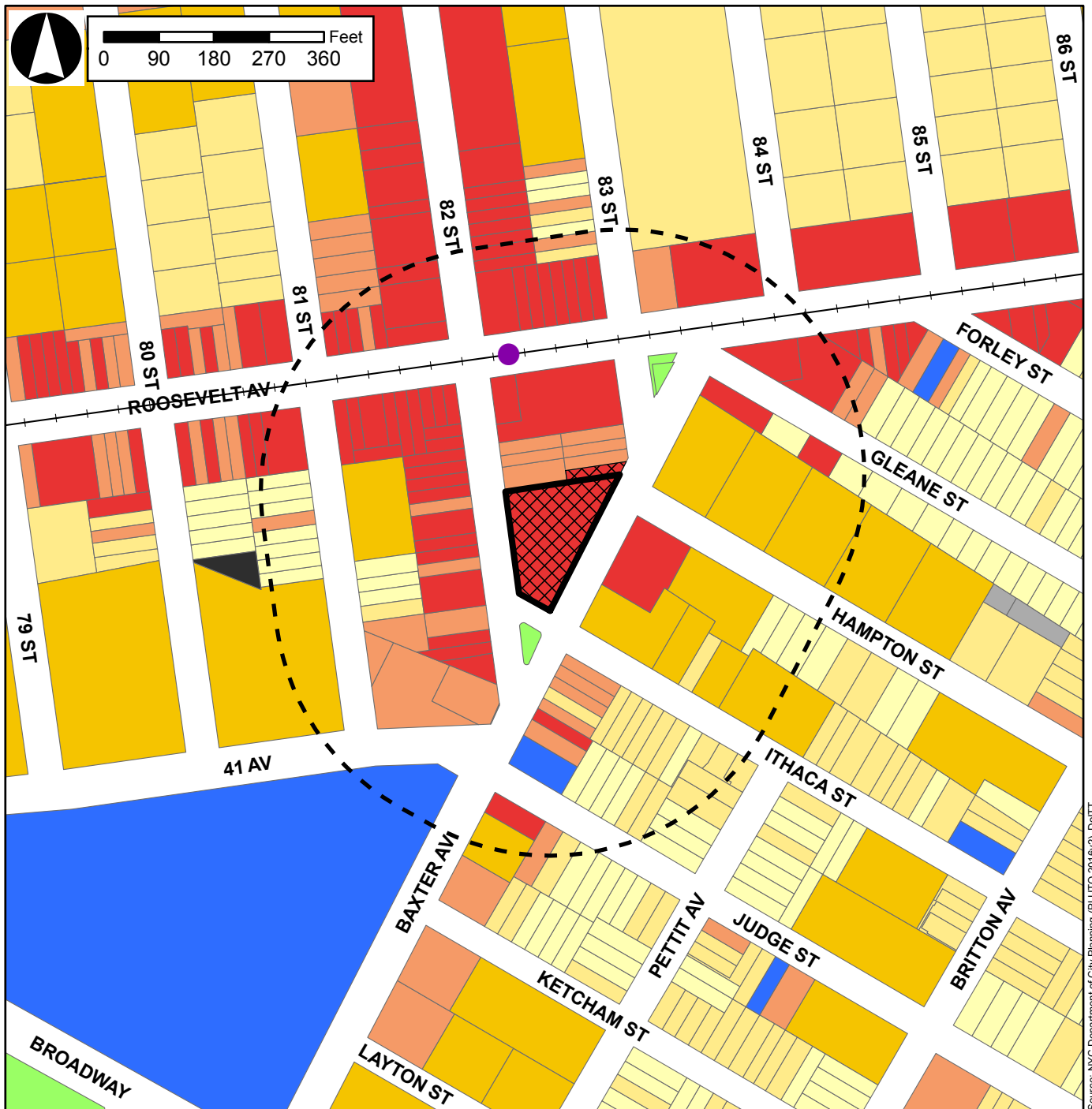
MAP KEY

9a	9c	10a
9b	9d	10b
13a	13c	14a

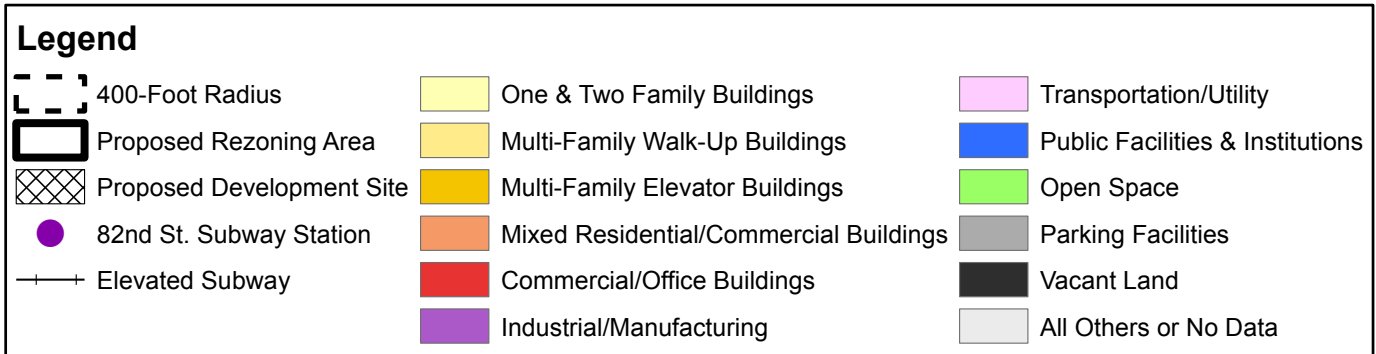
© Copyrighted by the City of New York

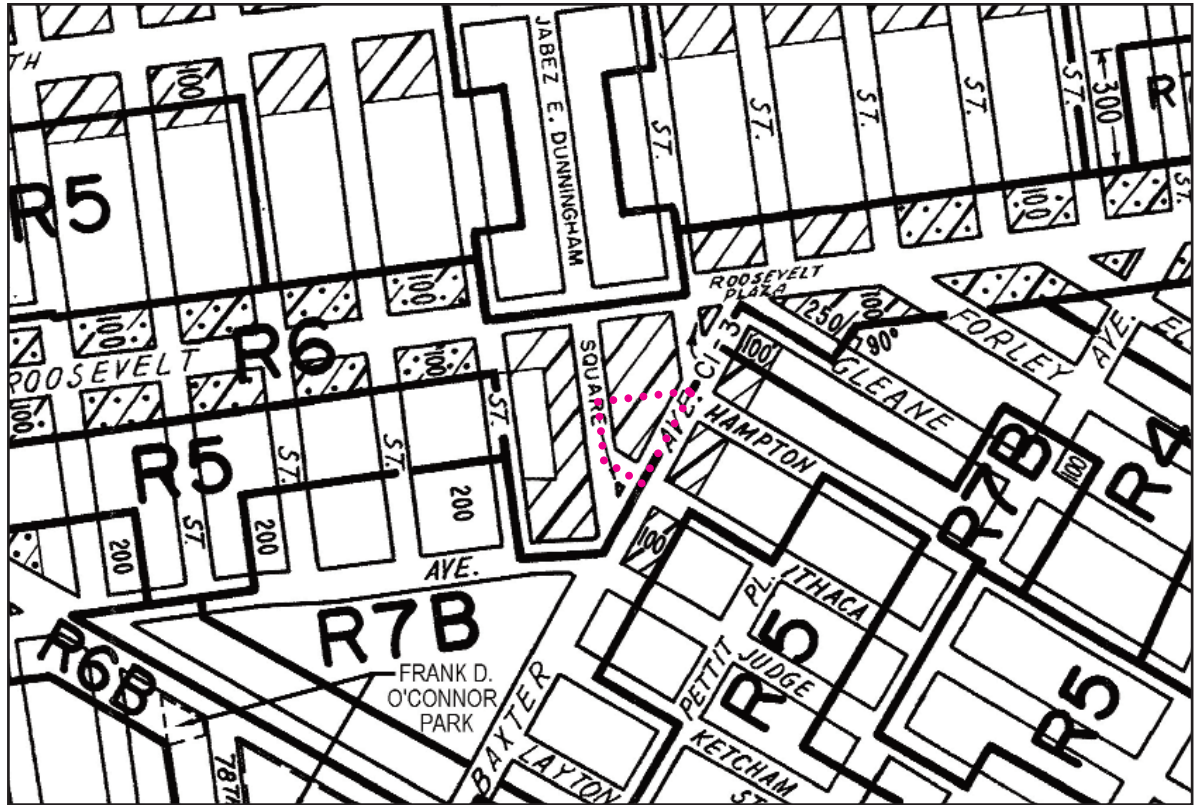
NOTE: Zoning information as shown on this map is subject to change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website: www.nyc.gov/planning or contact the Zoning Information Desk at (212) 720-3291.

C1-1 C1-2 C1-3 C1-4 C1-5 C2-1 C2-2 C2-3 C2-4 C2-5
 NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter 6 (Location of District Boundaries) of the Zoning Resolution.



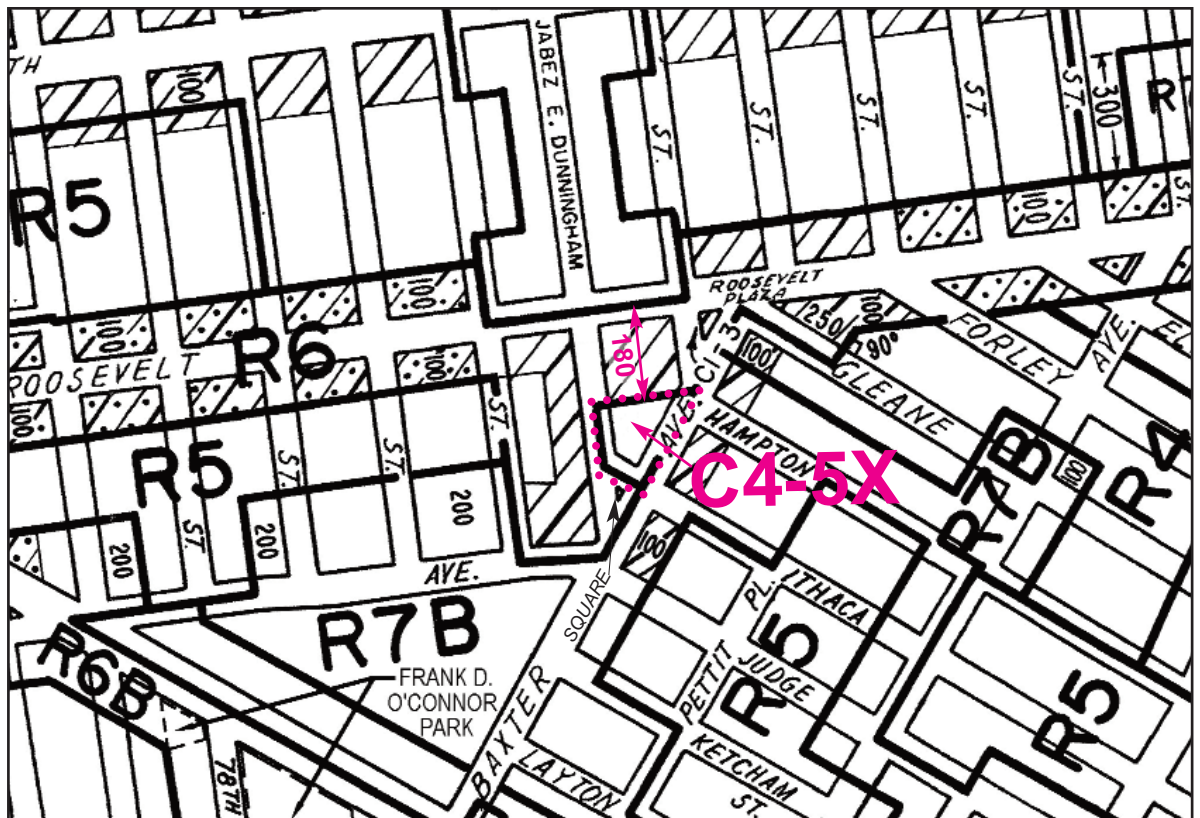
Source: NYC Department of City Planning (PLUTO 2018v2), DoITT





EXISTING ZONING

Proposed Rezoning Area



PROPOSED ZONING



C1-1	D1-2	D1-3	D1-4	D1-5	D2-1	D2-2	D2-3	D2-4	D2-5
[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined as follows: 1/2" = 100' unless otherwise noted.

raidus (Source: 2011-2014 ACS). Retail employees: 3 employee/1,000 sf of retail; community facility: 4 employees/1,000 sf

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: No-Action Scenario would include 65,524 gsf of residential uses (77 DUs), 51,921 gsf of commercial space (local retail), 1,996 gsf of community facility space (art exhibition space), and 130 parking spaces.

9. Analysis Year [CEQR Technical Manual Chapter 2](#)

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2020

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 24 Months

WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? YES NO IF MULTIPLE PHASES, HOW MANY? N/A

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: All construction would be complete by 2020

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

RESIDENTIAL MANUFACTURING COMMERCIAL PARK/FOREST/OPEN SPACE OTHER, specify:

Part II: TECHNICAL ANALYSIS

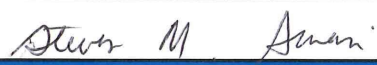
INSTRUCTIONS: For each of the analysis categories listed in this section, assess the proposed project’s impacts based on the thresholds and criteria presented in the CEQR Technical Manual. Check each box that applies.

- 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is there the potential to affect an applicable public policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) If “yes,” to (a), (b), and/or (c), complete a preliminary assessment and attach.		
(e) Is the project a large, publicly sponsored project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If “yes,” complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City’s Waterfront Revitalization Program boundaries ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If “yes,” complete the Consistency Assessment Form .		
2. SOCIOECONOMIC CONDITIONS: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
o Generate a net increase of 200 or more residential units?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Generate a net increase of 200,000 or more square feet of commercial space?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Directly displace more than 500 residents?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Directly displace more than 100 employees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Affect conditions in a specific industry?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. COMMUNITY FACILITIES: CEQR Technical Manual Chapter 6		
(a) Direct Effects		
o Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, hospitals and other health care facilities, day care centers, police stations, or fire stations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Indirect Effects		
o 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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o 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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o 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)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Health Care Facilities and Fire/Police Protection: Would the project result in the introduction of a sizeable new neighborhood?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. OPEN SPACE: CEQR Technical Manual Chapter 7		
(a) Would the proposed project change or eliminate existing open space?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Is the project located within an under-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If “yes,” would the proposed project generate more than 50 additional residents or 125 additional employees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Is the project located within a well-served area in the Bronx , Brooklyn , Manhattan , Queens , or Staten Island ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If “yes,” would the proposed project generate more than 350 additional residents or 750 additional employees?	<input type="checkbox"/>	<input type="checkbox"/>
(d) If the project is located in an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. HISTORIC AND CULTURAL RESOURCES: CEQR Technical Manual Chapter 9		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources.		
7. URBAN DESIGN AND VISUAL RESOURCES: CEQR Technical Manual Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. NATURAL RESOURCES: CEQR Technical Manual Chapter 11		
(a) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," list the resources and attach supporting information on whether the proposed project would affect any of these resources.		
(b) Is any part of the directly affected area within the Jamaica Bay Watershed ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," complete the Jamaica Bay Watershed Form , and submit according to its instructions .		
9. HAZARDOUS MATERIALS: CEQR Technical Manual Chapter 12		
(a) Would the proposed project allow commercial or residential uses in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Would the project require soil disturbance in a manufacturing area or any development on or near a manufacturing area or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Would the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Would the project result in development on or near a site that has or had underground and/or aboveground storage tanks (e.g., gas stations, oil storage facilities, heating oil storage)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Would the project result in renovation of interior existing space on a site with the potential for compromised air quality; vapor intrusion from either on-site or off-site sources; or the presence of asbestos, PCBs, mercury or lead-based paint?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Would the project result in development on or near a site with potential hazardous materials issues such as government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, coal gasification or gas storage sites, railroad tracks or rights-of-way, or municipal incinerators?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Has a Phase I Environmental Site Assessment been performed for the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: See Attachment G		
10. WATER AND SEWER INFRASTRUCTURE: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If the proposed project located in a separately sewered area , would it result in the same or greater development than the amounts listed in Table 13-1 in Chapter 13 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Would the proposed project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) If the project is located within the Jamaica Bay Watershed or in certain specific drainage areas , including Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	YES	NO
(f) Would the proposed project be located in an area that is partially sewerred or currently unsewerred?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or generate contaminated stormwater in a separate storm sewer system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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): 6,636		
o Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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): 32,415,694		
(b) Would the proposed project affect the transmission or generation of energy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. TRANSPORTATION: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) If "yes," conduct the screening analyses, attach appropriate back up data as needed for each stage and answer the following questions:		
o Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? <i>**It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.</i>	<input type="checkbox"/>	<input type="checkbox"/>
o Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o 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?	<input type="checkbox"/>	<input type="checkbox"/>
o Would the proposed project result in more than 200 pedestrian trips per project peak hour?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. AIR QUALITY: CEQR Technical Manual Chapter 17		
(a) <i>Mobile Sources:</i> Would the proposed project result in the conditions outlined in Section 210 in Chapter 17 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) <i>Stationary Sources:</i> Would the proposed project result in the conditions outlined in Section 220 in Chapter 17 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17 ? (Attach graph as needed)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Does the proposed project involve multiple buildings on the project site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. GREENHOUSE GAS EMISSIONS: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project fundamentally change the City's solid waste management system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) If "yes" to any of the above, would the project require a GHG emissions assessment based on the guidance in Chapter 18 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. NOISE: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Does the proposed project site have existing institutional controls (e.g., (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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;	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	YES	NO
Hazardous Materials; Noise?		
<p>(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.</p>		
<p>18. NEIGHBORHOOD CHARACTER: CEQR Technical Manual Chapter 21</p>		
<p>(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?</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary. The proposed project does not have the potential to result in significant adverse impacts to land use, zoning, and public policy, socioeconomic conditions, open space, historic and cultural resources, urban design and visual resources, shadows, transportation, or noise. Nor would the proposed project result in a combination of moderate effects to several elements that cumulatively may affect neighborhood character. Therefore, an assessment of neighborhood character is not warranted.</p>		
<p>19. CONSTRUCTION: CEQR Technical Manual Chapter 22</p>		
<p>(a) Would the project's construction activities involve:</p>		
o Construction activities lasting longer than two years?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o The operation of several pieces of diesel equipment in a single location at peak construction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Closure of a community facility or disruption in its services?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Activities within 400 feet of a historic or cultural resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Disturbance of a site containing or adjacent to a site containing natural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>(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.</p> <p>Construction on the development site may result in temporary disruptions including noise, dust and traffic associated with the delivery of materials and arrival of workers to the site. These effects, however, would be temporary (lasting approximately 24 months) and are therefore not considered significant.</p>		
<p>20. APPLICANT'S CERTIFICATION</p>		
<p>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.</p> <p>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.</p>		
<p>APPLICANT/REPRESENTATIVE NAME Steven Sinacori, Akerman LLP</p>	<p>DATE 01/25/2018</p>	
<p>SIGNATURE </p>		

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

Part III: DETERMINATION OF SIGNIFICANCE (To Be Completed by Lead Agency)		
INSTRUCTIONS: In completing Part III, the lead agency should consult 6 NYCRR 617.7 and 43 RCNY § 6-06 (Executive Order 91 or 1977, as amended), which contain the State and City criteria for determining significance.		
1. For each of the impact categories listed below, consider whether the project may have a significant adverse effect on the environment, taking into account its (a) location; (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude.		Potentially Significant Adverse Impact
		YES NO
IMPACT CATEGORY		
Land Use, Zoning, and Public Policy	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Socioeconomic Conditions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Community Facilities and Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Open Space	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shadows	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Historic and Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Urban Design/Visual Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Natural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hazardous Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water and Sewer Infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solid Waste and Sanitation Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Transportation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Greenhouse Gas Emissions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Noise	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Health	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Neighborhood Character	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Are there any aspects of the project relevant to the determination of whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials? If there are such impacts, attach an explanation stating whether, as a result of them, the project may have a significant impact on the environment.		<input type="checkbox"/> <input checked="" type="checkbox"/>
3. Check determination to be issued by the lead agency:		
<input type="checkbox"/> Positive Declaration: If the lead agency has determined that the project may have a significant impact on the environment, and if a Conditional Negative Declaration is not appropriate, then the lead agency issues a <i>Positive Declaration</i> and prepares a draft Scope of Work for the Environmental Impact Statement (EIS).		
<input type="checkbox"/> Conditional Negative Declaration: A <i>Conditional Negative Declaration</i> (CND) may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. The CND is prepared as a separate document and is subject to the requirements of 6 NYCRR Part 617.		
<input checked="" type="checkbox"/> Negative Declaration: If the lead agency has determined that the project would not result in potentially significant adverse environmental impacts, then the lead agency issues a <i>Negative Declaration</i> . The <i>Negative Declaration</i> may be prepared as a separate document (see template) or using the embedded Negative Declaration on the next page.		
4. LEAD AGENCY'S CERTIFICATION		
TITLE Director, Environmental Assessment and Review Division	LEAD AGENCY Department of City Planning	
NAME Robert Dobruskin, AICP	DATE 01/26/18	
SIGNATURE <i>Robert Dobruskin</i>		

40-31 82nd Street Rezoning EAS
ATTACHMENT A: PROJECT DESCRIPTION

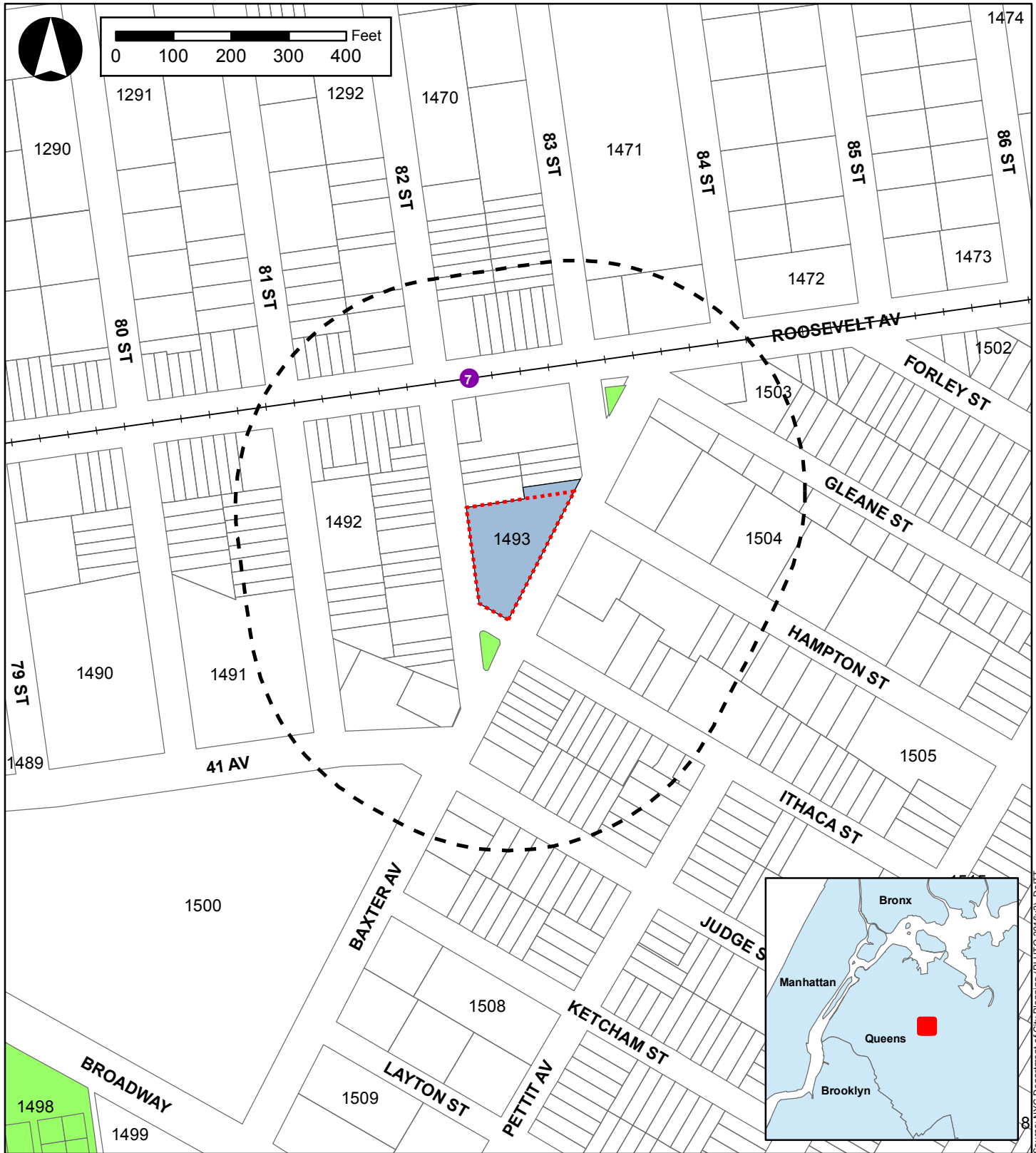
I. INTRODUCTION

30 GC TIC, LLC (the “Applicant”) is seeking two discretionary zoning actions in order to facilitate the redevelopment of 40-31 82nd Street (Block 1493, Lot 15) in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4 (the “proposed development site”) (refer to Figure A-1, “Project Location”). The discretionary actions include: (i) a zoning map amendment to rezone part of the proposed development site from R6/C1-3 to a C4-5X district (refer to Figure A-2, “Zoning Change Map”); and, (ii) a zoning text amendment to ZR Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area. Collectively, the zoning map amendment and the zoning text amendment are the “Proposed Actions” for the purposes of the environmental analysis.

As shown in Figure A-3, “Tax Map,” the proposed rezoning area would encompass most of Lot 15 on Queens Block 1493, with the northeastern portion of the lot falling outside the rezoning boundary. The total area of the development site (Lot 15) is 23,428 square feet (sf). The proposed rezoning area comprises approximately 21,648 sf of lot area bounded by Baxter Avenue to the east, 82nd Street to the west, and Ithaca Street to the south. To the north, the proposed rezoning area would be bounded by a line parallel to Roosevelt Avenue, extending 180 feet to the south. Approximately 1,780 sf of the development site would remain R6/C1-3.

In the future with the Proposed Actions, the Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf) (39,282 zoning square feet (zsf)), located on the cellar, first, and second floors. Approximately 1,996 gsf (1,967 zsf) of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf (99,079 zsf), with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program. The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

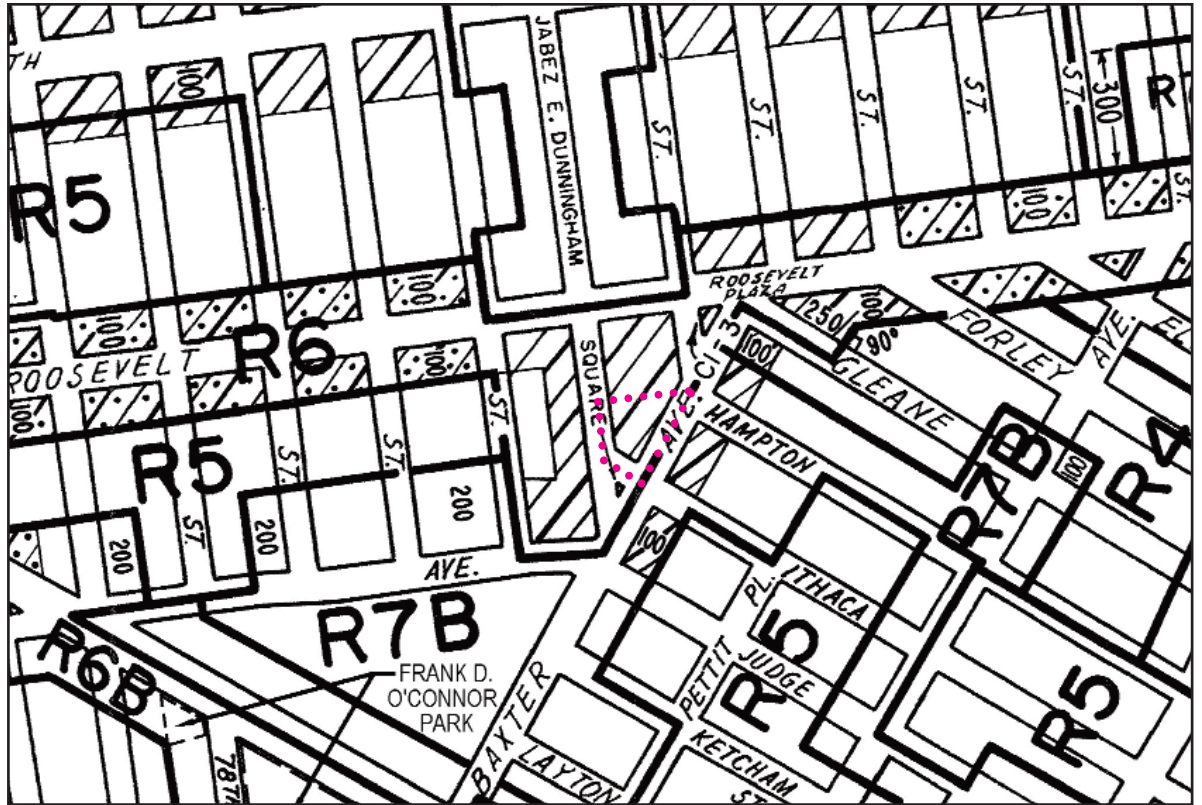
However, while the Applicant intends on developing the proposed project described above (“Scenario 1”), because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes. The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant’s proposed mixed-use development described above. This alternate With-Action scenario assumes that a



Source: NYC Department of City Planning (PLUTO 2016v2), DoIT

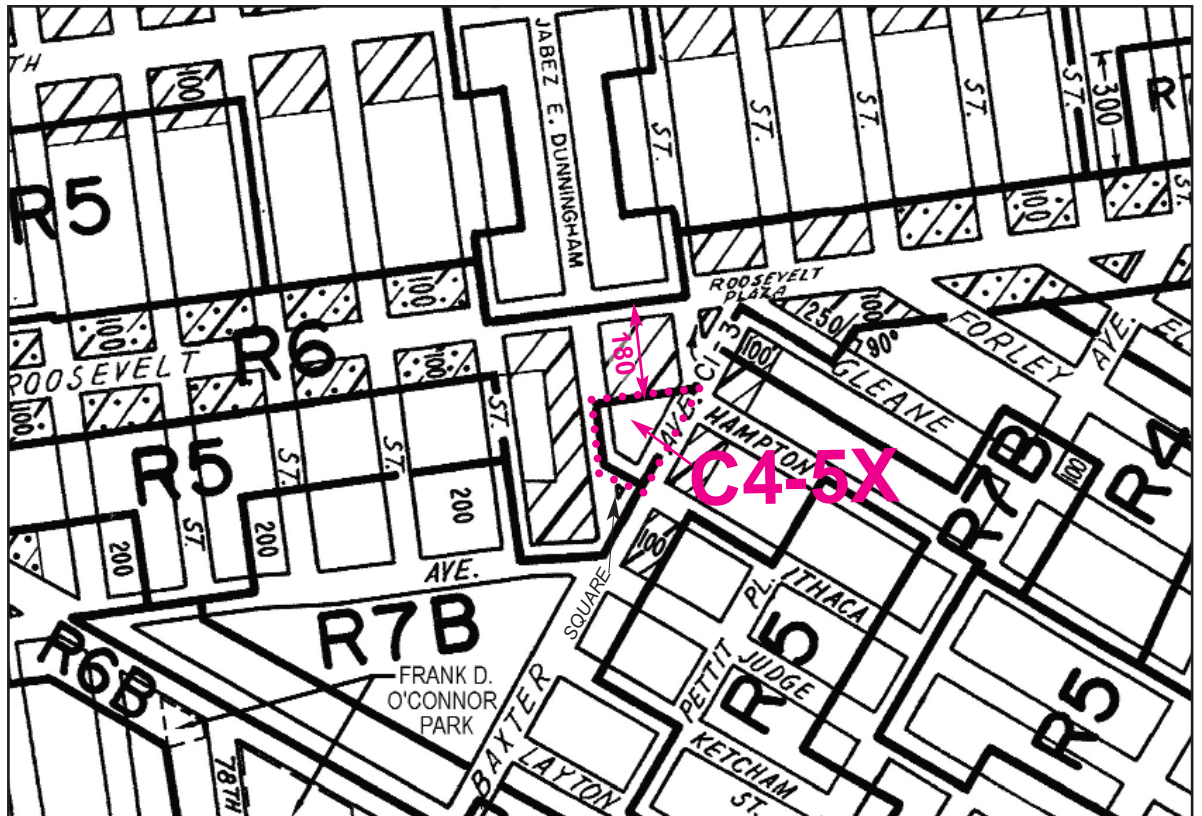
Legend

- 400-Foot Radius
- Proposed Rezoning Area
- Proposed Development Site
- 1507 Tax Blocks
- Elevated Subway
- 82nd St. Subway Station
- Open Space



EXISTING ZONING

..... Proposed Rezoning Area



PROPOSED ZONING



C1-1	C1-2	C1-3	C1-4	C1-5	C2-1	C2-2	C2-3	C2-4	C2-5
[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII Chapter R (Ordinance of District Transactions) of the zoning laws.



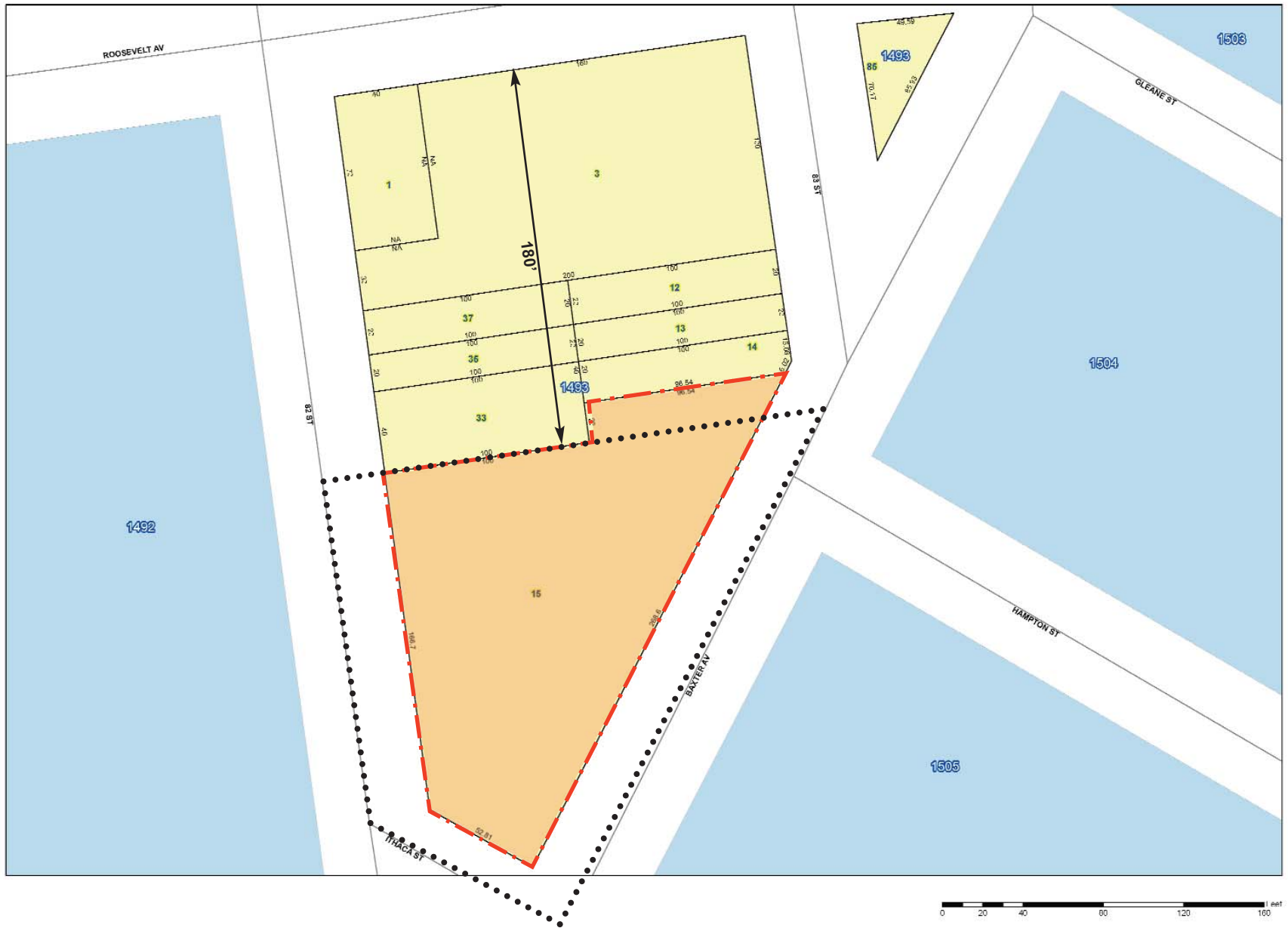
NYC Digital Tax Map

Effective Date : 12-07-2008 18:02:54
End Date : Current
Queens Block: 1493

Legend

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

- Proposed Rezoning Area
- Applicant-Owned Proposed Development Site



Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area ("Scenario 2"). It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms (542 gsf/room).¹ The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

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

II. EXISTING CONDITIONS

Proposed Rezoning Area / Applicant-Owned Proposed Development Site

The Applicant-owned proposed development site at 40-31 82nd Street (Queens Block 1493, Lot 15) is an irregularly-shaped lot with approximately 166.7 feet of frontage along 82nd Street to the west, approximately 52.8 feet of frontage along Ithaca Street to the south, and approximately 268.6 feet of frontage along Baxter Avenue to the east (refer to Figures A-1 and A-3). The approximately 23,428 sf proposed development site is currently zoned R6 with a C1-3 commercial overlay, and is occupied by a number of structures ranging in height from one to four stories. As shown in Figure A-4, "Existing Conditions Photos," the existing buildings on the site have recently been demolished. The structures that previously occupied the site included a 3- to -4-story brick building that was formerly occupied by a vacant movie theater, a single-story building fronting on Baxter Avenue that contains a dry cleaning facility, and two single- and two-story commercial structures fronting on Baxter and 82nd streets containing a number of retail and office uses (e.g., restaurant, wine and liquor store, produce vendors, etc.).

Surrounding Area and Context

The proposed rezoning area is located in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4. The remainder of Block 1493 is also zoned R6/C1-3 (see Figure A-2), and the surrounding area within an approximate 400-foot radius is predominately zoned R6, as well as R4, R5, and R7B; a C4-3 commercial district is located north of Roosevelt Avenue, between 81st and 83rd streets. As shown in Figure A-2, C1-3 commercial overlays are mapped along Baxter Avenue and 82nd Street adjacent to the subject block, as well as along Roosevelt Avenue to the east of 83rd Street; a C2-3 commercial overlay is mapped along Roosevelt Avenue to the west of 82nd Street.

The northern portion of Block 1493 is occupied mostly by two- and three-story commercial structures fronting on Roosevelt Avenue, and two- and three-story mixed-use structures in the mid-block, some of which have residential apartments on the upper floors. The northern portion of the block fronts on Roosevelt Avenue, and is adjacent to the elevated subway tracks for the 7 subway train. As shown in Figure A-5, land uses within an approximate 400-foot radius consist of a mix of residential, commercial, and institutional uses. Commercial uses are concentrated along the Roosevelt Avenue and 82nd Street corridors. Roosevelt Avenue is a major commercial corridor, lined with 2-story commercial and mixed-use buildings. Residential uses in the area are characterized by one- and two-family residences and multi-family elevator buildings.

¹ Source: *The XU Hotel and Residences EAS*, 2014



1. View from Baxter Avenue looking southwest towards proposed development site.



2. View from Baxter Avenue looking west towards proposed development site.



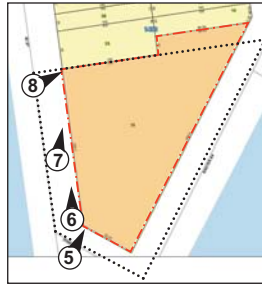
3. View from Baxter Avenue (just north of Ithaca Street) looking northwest towards proposed development site.



4. View from corner of Ithaca Street and Baxter Avenue looking northwest towards proposed development site.



5. View from corner of Ithaca and 82nd Streets looking north towards proposed development site.



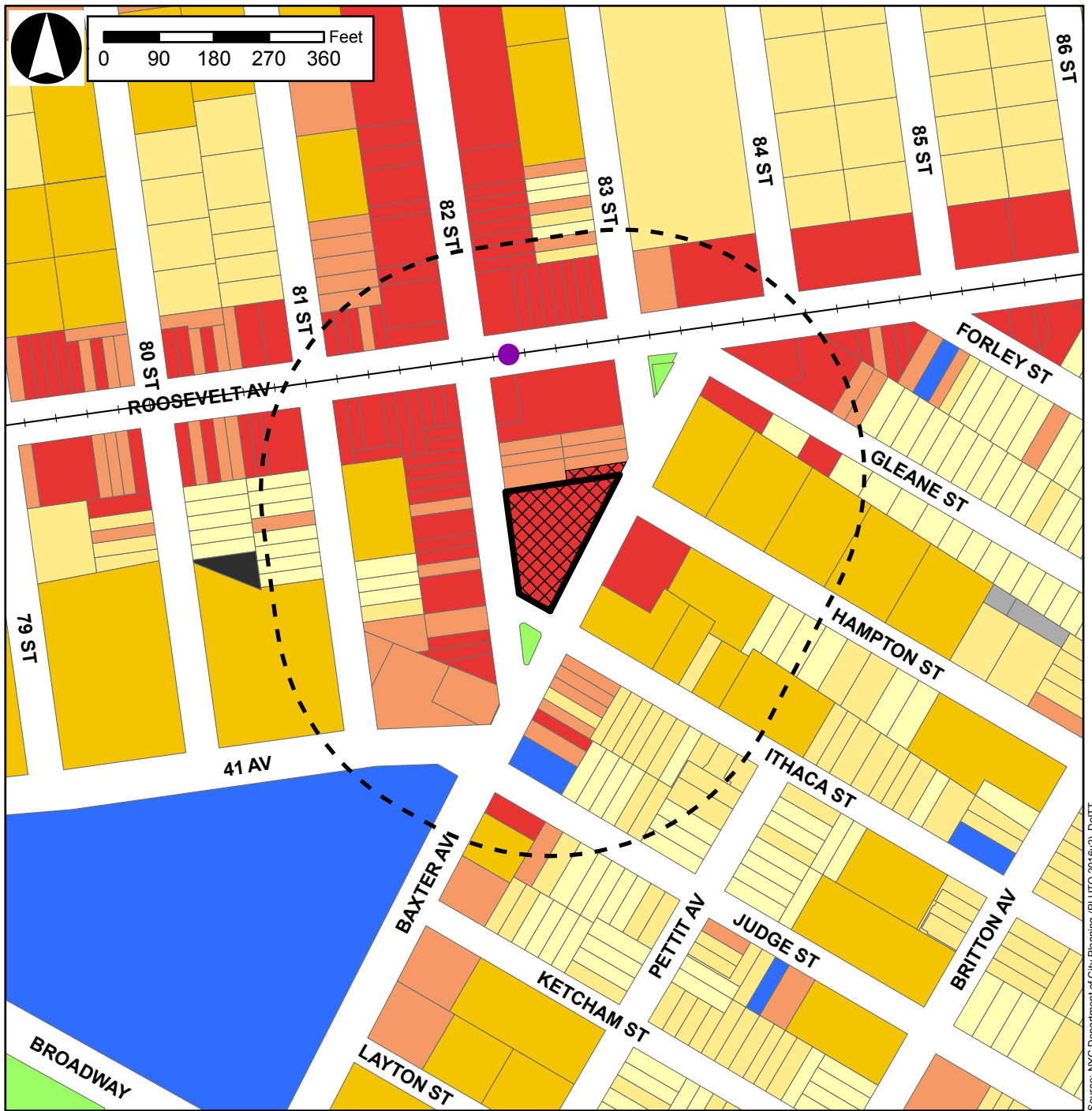
6. View along sidewalk on 82nd Street (beneath scaffolding) looking north.



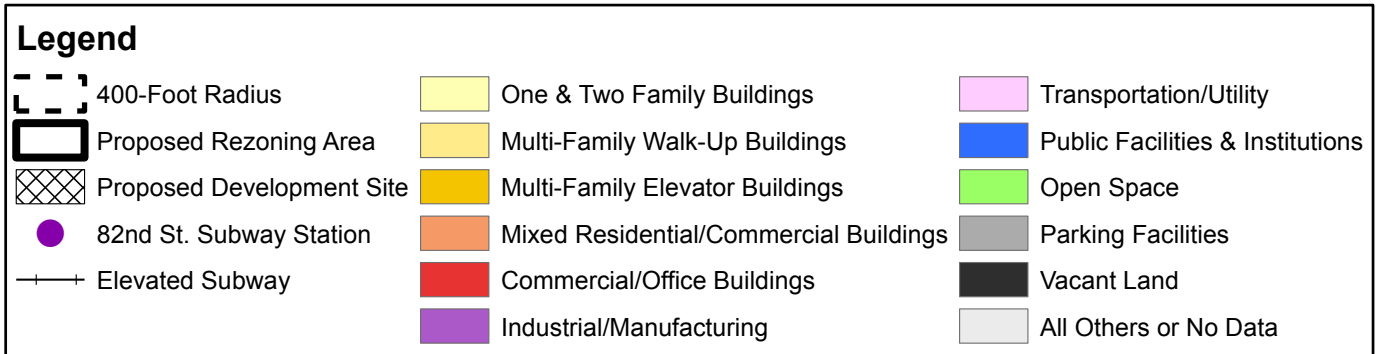
7. View from 82nd Street looking northeast towards proposed development site.



8. View from 82nd Street looking east. Proposed development site is on the right.



Source: NYC Department of City Planning (PLUTO 2018v2), DoITT



The Jackson Heights Historic District is located to the north of Roosevelt Avenue, approximately one block north of the proposed development site. The historic district, was designated by the New York Landmarks Preservation Commission (LPC) in 1993, and listed in the State and National Registers (S/NR) in 1999 (the S/NR-listed historic district encompasses a larger area than the LPC-designated historic district). The Jackson Heights historic district comprises the most cohesive part of an innovative residential development which was mostly built between the early 1910s and the early 1950s. This development reflects important changes in urban design and planning that took place in the first three decades of the twentieth century. Conceived, planned, built in part, and managed under the direction of a single real estate firm, the Queensboro Corporation, Jackson Heights was one of the earliest neighborhoods in New York to introduce two new building types, "garden apartments" and "garden homes." Commercial, institutional, recreational and transportation facilities were integrated with the residential buildings to create an alternative for middle-class residents to the then typical urban neighborhood.

Other notable uses within the surrounding area include Elmhurst Hospital, which is located approximately one block to the southwest of the proposed development site, and two small open space resources are located in the vicinity of the proposed development site (Manuel De Dios Unanue Triangle to the northeast, and Dunningham Triangle to the south). The proposed development site and most of Block 1493 are located within the 82nd Street Business Improvement District (BID), which extends on both sides of 82nd Street from Ithaca Street to 37th Avenue. The elevated subway tracks for the 7 subway train run along Roosevelt Avenue, and the nearest subway station is the 82nd Street-Jackson Heights station adjacent to the subject block, with an entrance located at the southwest corner of Roosevelt Avenue and 82nd Street.

III. DESCRIPTION OF THE PROPOSED ACTION

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

Zoning Map Amendment

As shown in Figure A-3, the zoning map amendment would rezone the southern portion of Queens Block 1493, comprising most of Lot 15, from an R6/C1-3 zoning district to a C4-5X zoning district. The northern boundary of the proposed rezoning area would be parallel to Roosevelt Avenue, extending 180 feet to the south.

C4-5X districts provide a maximum allowable floor area ratio (FAR) of 4.0 for commercial uses, and 5.0 for residential and community facility uses, although the residential FAR can be increased with the Inclusionary Housing bonus. Additionally, C4-5X districts permit a maximum building height of 120 feet (125 feet with qualifying ground floor), and mandate Quality Housing bulk regulations. (As discussed below, utilization of the MIH Program would increase the permitted FAR and building heights within the proposed rezoning area.) Accessory parking is required at a rate of 1 space per 2 residential units in C4-5X districts, whereas commercial uses generally do not require parking. However, as the project site is located within a Transit Zone (as defined in Map 5 of Appendix I of the Zoning Resolution), no accessory parking is required for income-restricted housing units.

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

TABLE A-1: Comparison of Existing and Proposed Zoning

	Existing Zoning	Proposed Zoning
Zoning District	R6 / C1-3	C4-5X (R7X Equivalent)
Use Groups	UG 1-6 ¹	UG 1-6, 8-10, and 12
<i>Maximum FAR</i>		
Residential	0.78-2.43 (under Height Factor regulations) Quality Housing Program – 3.0 (on wide streets outside the Manhattan Core) & 2.2 (on narrow streets)	6.0 ²
Community Facility	4.8	5.0
Commercial	2.0	4.0
Manufacturing	0.0	0.0
Max. Building Height	HF - no height limits (building envelopes regulated by sky exposure plane). Quality Housing – max. bldg. height 55' on narrow streets, 70' on wide streets (75' with QGF)	Commercial – sky exposure plane Residential – Max. bldg. height of 120' (125' with QGF); up to 140' (145' with QGF) for MIH developments

Source: Zoning Resolution of the City of New York. Information shown is for areas outside the Manhattan Core.

Notes:

¹ With some limitations

² When utilizing MIH Program.

HF = Height Factor; QGF = Qualifying Ground Floor

Zoning Text Amendment

The Applicant is also proposing to map the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area (Options 1 and 2) by creating a new map for Queens Community District 4 in Appendix F of the New York City Zoning Resolution. An MIH Area requires affordable housing to be provided equivalent to either 25 percent (60% of Area Median Income, or AMI) or 30 percent (80% AMI) of the residential floor area developed. The MIH Area sets a new maximum permitted residential FAR which supersedes the FAR permitted by the underlying zoning district. With both the designation of the proposed rezoning area as an MIH Area and its rezoning to C4-5X, the maximum permitted FAR within the proposed rezoning area would be 6.0, and the maximum permitted building height would be 120 feet (125 feet with qualifying ground floor), or up to 140 feet (145 feet with qualifying ground floor) for MIH developments and Affordable Independent Residences for Seniors (AIRS). Mapping of the MIH Area would facilitate development of approximately 30-36 affordable housing units on the proposed development site, as the Applicant would provide affordable housing equivalent to 25 or 30 percent of the residential floor area pursuant to either MIH Option 1 or 2.

IV. PURPOSE AND NEED OF THE PROPOSED ACTIONS

The proposed zoning map amendment to rezone the southern portion of Queens Block 1493 from R6/C1-3 to C4-5X, combined with the proposed text amendment, would increase the permitted residential FAR. The rezoning area is currently within an existing R6/C1-3 zoning district and is not within an Inclusionary Housing designated area. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). As discussed in detail below, this could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing at the proposed development site. The proposed C4-5X zoning district, combined with a Mandatory Inclusionary Housing designation (Options 1 and 2), would allow a maximum 5.0 FAR for community facility uses, 4.0 FAR for commercial uses, and 6.0 FAR

for residential uses, resulting in the proposed 13-story, 145-foot tall building with approximately 140,373 sf of total floor area at the development site. While the resulting difference in height and total floor area is not substantial overall, the proposed C4-5X zoning district will allow a contextual, transit-oriented development with significantly more residential floor area (25 to 30 percent of which will be permanently affordable), as well as 2 stories of commercial floor area.

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

The proposed rezoning would also increase the maximum allowable commercial FAR from 2.0 to 4.0, while increasing the range of commercial uses that can be developed. This would allow the proposed development to include a significant commercial component, which would be consistent with the predominantly commercial character of the surrounding area, and would supplement and enhance the active commercial corridors along 82nd Street and Roosevelt Avenue. The proposed commercial uses would replace a vacant former theater and other underutilized structures on the site, thereby activating the proposed development site's frontages, and serving both existing and future residents.

As such, the proposed zoning map and text amendments would create additional zoning capacity in a transit accessible area to support new housing creation and also increase the number of affordable housing units available in New York City. The creation of new housing supply at various income levels is also expected to help alleviate the upward pressure on housing prices, and contribute to housing affordability in the surrounding neighborhood and larger City. The MIH program would promote and retain neighborhood economic diversity in the area and create new housing units, including affordable units, in close proximity to public transit, with the 82nd Street-Jackson Heights (7) Station located within 400 feet of the proposed rezoning area, and several local bus routes traveling in the vicinity of the proposed development site.

V. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Applicant owns the proposed development site at 40-31 82nd Street (Queens Block 1493, Lot 15). With approval of the Proposed Actions, the Applicant intends to redevelop the site with a 13-story (145-foot tall), approximately 203,830 gsf (140,373 zsf) mixed-use building (excluding parking and loading). The building would consist of a two-story predominantly commercial base, and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gsf, located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program.² The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

² The proposed MIHA would be coterminous with the area being rezoned, and would therefore not cover the northeastern corner of Lot 15. However, the MIH area boundary would be extended pursuant to ZR 77-11 (the "25 Foot Rule").

As shown in Figure A-6, “Ground Floor Plan,” it is anticipated that the entrances to the residential and community facility components of the proposed building would be located on Baxter Avenue. Retail entrances would be located on both Baxter Avenue and 82nd Street. Access to the below-grade parking garage and the adjacent loading dock would be provided via two new curb-cuts on Baxter Avenue, at the northern edge of the proposed development site. As shown in Figure A-7, “Proposed Massing,” the base of the proposed building would rise 35 feet (two stories), and the residential component above the base would be located along Baxter Avenue, and would be setback from Ithaca and 82nd streets. As shown in Figure A-7, the residential component would have multiple setbacks, and would reach a maximum height of 145 feet (13 stories), as permitted when utilizing the MIH Program.

As noted above, the proposed development site would be zoned C4-5X and R6/C1-3 as a result of the Proposed Actions. Although the northeastern corner of the proposed development site would fall outside the rezoning area boundary and remain within the R6/C1-3 district (refer to Figure A-3), it would be subject to the “25-foot rule” for split lots. As outlined in Zoning Resolution Section 77-11, the “25 Foot Rule” applies to a zoning lot split between two or more zoning districts that permit different uses and bulk regulations when the width of one district on the zoning lot measures 25 feet or less at every point (as would occur on Lot 15 in the future with the Proposed Actions). This would also apply to the MIH area boundary, which is proposed to be coterminous with the rezoning area boundary. As shown in Table A-2 below, the Applicant’s proposed development would have a built FAR of 5.99, which is just under the proposed development site’s maximum FAR of 6.0 in the future with the Proposed Actions. As the proposed development almost maximizes the FAR and permitted building height, it is considered the RWCDs for the Applicant-owned proposed development site in the future with the Proposed Actions.

Table A-2: Proposed Development on Block 1493, Lot 15 (Applicant-Owned Development Site)

Lot Area SF	Existing Zoning & Max. FAR	Proposed Zoning & Max. FAR	Proposed Residential		Proposed Commercial SF	Proposed Com. Fac. SF	Proposed Parking Spaces	Proposed Bldg SF ⁴	Proposed Bldg FAR
			SF	DUs					
23,428	R6/C1-3: 2.2 FAR ¹	C4-5X: 6.0 FAR ² : 6.0	99,079 zsf (125,460 gsf)	120 (30-36 aff)	39,282 zsf (76,375 gsf)	1,967 zsf (1,996 gsf)	128 ³	140,373 zsf (203,830 gsf)	5.99

Notes:

¹ For Quality Housing Buildings, pursuant to ZR 23-153.

² The proposed maximum allowable FAR in the proposed rezoning area increases from 5.0 to 6.0 FAR when utilizing the MIH Program.

³ As the site is located within a Designated Transit Zone, no accessory parking is required for the affordable units, and parking would be provided for 50 percent of the market-rate units (45 spaces). No accessory parking is required for most commercial uses in C4-5X districts.

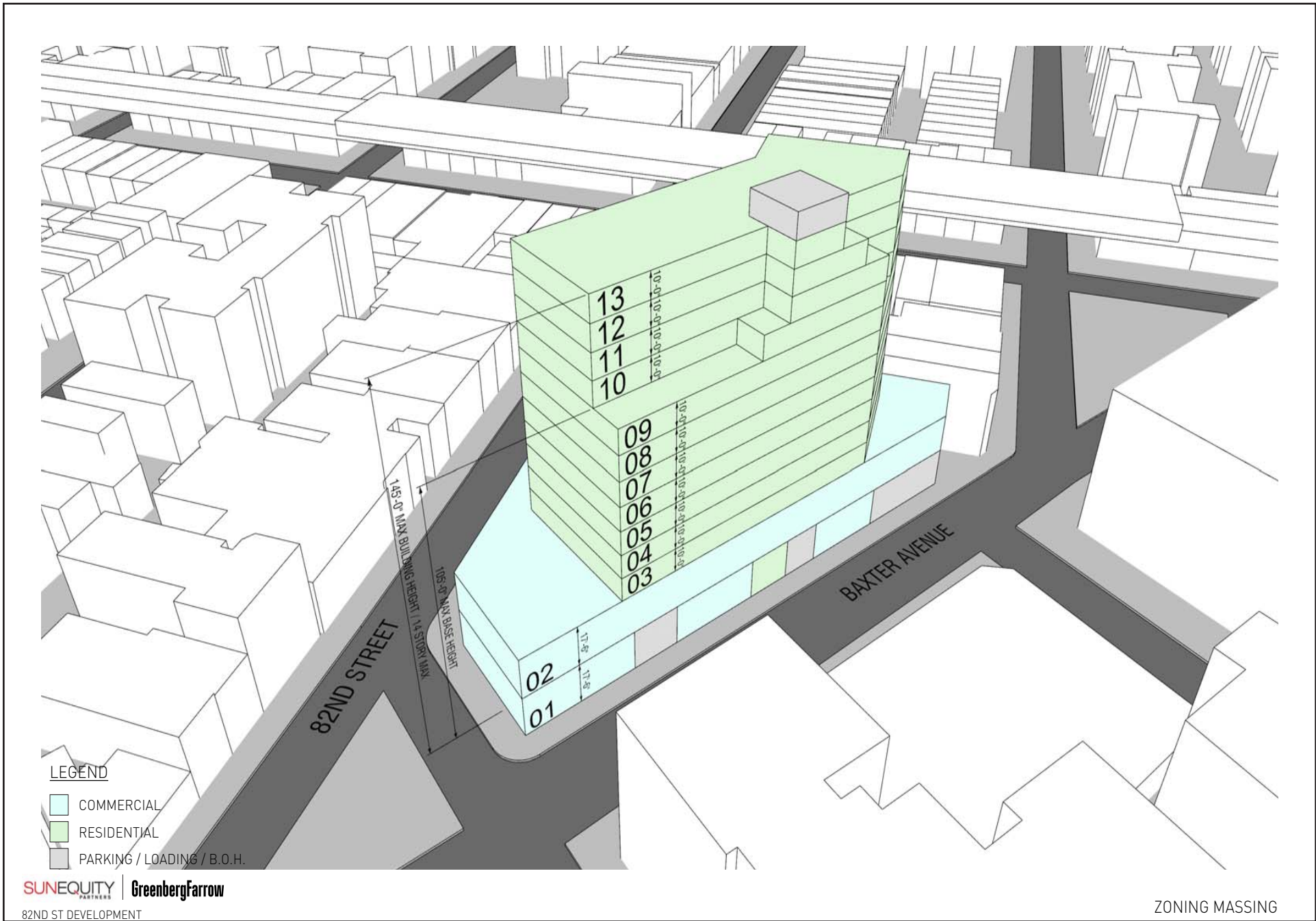
⁴ Excludes parking and loading areas.

As discussed above, the maximum FAR permitted under the MIH Program set forth in Section 23-154 of the Zoning Resolution requires provision of either (i) an amount equivalent to at least 25 percent of the residential floor area within the development affordable to households at an average of 60 percent AMI, with at least 10 percent at or below 40 percent AMI (Option 1); or (ii) an amount equivalent to at least 30 percent of the residential floor area within the development affordable to households at an average of 80 percent AMI (Option 2). As indicated above, the Applicant proposes to establish Options 1 & 2 of the MIH Program, which would provide approximately 30 to 36 affordable dwelling units (25% to 30% of the residential floor area).



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82ND ST DEVELOPMENT



The Applicant-proposed number of dwelling units would have an average unit size of approximately 1,045 gsf per unit is based on the overall gross square footage of residential space, which is inclusive of the interior common spaces associated with the residential area. This would result in 120 DUs.

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

As described above, the Applicant proposes to rezone the southern portion of Queens Block 1493 from R6/C1-3 to C4-5X, and designate the area as a MIH Area. The Proposed Actions would affect a portion of one tax lot (Lot 15, as shown in Figure A-3) that is owned by the Applicant, permitting a maximum of up to 6.0 FAR and a maximum building height of 145 feet pursuant to the MIH Program.

A. Identification of Development Sites / Affected Area

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

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

Proposed Rezoning Area

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to art related exhibition space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

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

There are no known projects anticipated to be completed within 400 feet of the proposed rezoning area in the future without the Proposed Actions. Additionally, there are no anticipated changes to zoning within 400 feet of the proposed rezoning area under No-Action conditions.

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

In the future with the Proposed Actions (the With-Action scenario), the proposed zoning map amendment and zoning text amendment would be implemented in the proposed rezoning area. As such, the proposed rezoning area would be remapped as a C4-5X district, and would be designated as an MIH Area. Under With-Action conditions, the maximum allowable FAR in the proposed rezoning area would increase to 6.0 when fully utilizing the additional FAR under the MIH Program.

As noted above, 92 percent of the Applicant-owned Lot 15 would be included in the proposed rezoning area. As discussed in detail above, although the northeastern corner of the proposed development site would fall outside the rezoning area boundary and remain within the R6/C1-3 district (refer to Figure A-3), it would be subject to the “25-foot rule” for split lots. As such, in the future with the Proposed Actions, the Applicant-owned proposed development site would be redeveloped in accordance with the proposed C4-5X zoning district and MIH Area. As detailed above in the “Description of the Proposed Development,” the Applicant intends to redevelop the site with mixed-use building with an overall FAR of 5.99 (140,373 zsf). Because this would almost maximize the floor area allowable on the proposed development site (FAR of 6.0) the proposed development is the RWCDs With-Action condition for the proposed development site.

As detailed in Table A-3, under the With-Action RWCDs, the Applicant-owned proposed development site would be redeveloped with a 13-story (145-foot tall), approximately 203,830 gsf (140,373 zsf) mixed-use building. The commercial component of the project would consist of approximately 76,375 gsf, located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 dwelling units (DUs). While the Applicant-proposed number of dwelling units would have an average unit size of approximately 1,045 gsf per unit, which would result in 120 DUs, for conservative analysis purposes, the RWCDs assumes 850 gsf per unit. This would result in 147 DUs for RWCDs analysis purposes. Twenty-five to thirty percent of the residential floor area (equivalent to 37-44 DUs) would be affordable units pursuant to the MIH Program for RWCDs analysis purposes. C4-5X zoning districts require parking spaces for a minimum of 50 percent of market-rate DUs. As the proposed rezoning area is located in a Designated Transit Zone, no parking spaces are required for affordable DUs. Therefore, it is anticipated that 51-55 accessory parking spaces would be provided for the residential component of the proposed development site. As discussed above, the proposed development would include a total of 128 accessory parking spaces on the sub-cellar level.

As discussed above, the Proposed Actions would permit a 4.0 FAR for commercial use rather than the 2.0 FAR currently permitted under the existing R6/C1-3 zoning and would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant’s proposed mixed-use development described above. As detailed in Table A-4, this alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the

rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

The EAS will analyze whichever scenario presents the worst case for each technical area.

VII. APPROVALS REQUIRED

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

TABLE A-3: Comparison of Existing, No-Action, and With-Action Conditions on Proposed Development Site (Scenario 1) (Block 1493, Lot 15)

	Existing Condition		No-Action Condition		With-Action Condition		Increment
LAND USE							
Residential	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If "yes," specify the following:							
Describe type of residential structure	-		Multi-Family Mixed-Use		Multi-Family Mixed-Use		
No. of dwelling units	0 DUs		77 DUs		147 DUs		+ 70 DUs
No. of low- to moderate-income units	0 DUs		0 DUs		51-55 DUs		+ 51-55 DUs
Gross floor area (sf)	0 sf		65,524 gsf		125,460 gsf		+59,936 gsf
Commercial	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If "yes," specify the following:							
Type of use			Retail uses		Retail uses		-
Gross floor area (sf)			51,921 gsf		76,375 gsf		+ 24,454 gsf
Manufacturing/Industrial	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," specify the following:							
Type of use	-		-		-		
Gross floor area (sf)	-		-		-		
Open storage area (sf)	-		-		-		
If any unenclosed activities, specify:	-		-		-		
Community Facility	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If "yes," specify the following:							
Type	-		Art related		Art related		-
Gross floor area (sf)	-		1,996 gsf		1,996 gsf		0 gsf
Vacant Land	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," describe:	Recently demolished buildings		-		-		-
Other Land Uses	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," describe:			-		-		-
PARKING							
Garages	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If "yes," specify the following:							

No. of public spaces	-	-	-	-
No. of accessory spaces	-	130	128	-2 spaces
Lots	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
If "yes," specify the following:				
No. of public spaces	-	-	-	-
No. of accessory spaces	-	-	-	-
ZONING				
Zoning classification	R6/C1-3	R6/C1-3	C4-5X & R6/C1-3	-
Maximum amount of floor area that can be developed	Residential: 0.78-2.43 (HF) Commercial: 2.0 Community Facility: 4.8	Residential: 0.78-2.43 (HF) Commercial: 2.0 Community Facility: 4.8	C4-5X Residential: 6.0 Commercial: 4.0 Community Facility: 5.0	
Predominant land use and zoning classifications within the land use study area(s) or a 400 ft. radius of proposed project	Commercial; Residential; Institutional;	Commercial; Residential; Institutional;	Commercial; Residential; Institutional;	-

TABLE A-4: Comparison of Existing, No-Action, and With-Action Conditions on Proposed Development Site (Scenario 2) (Block 1493, Lot 15)

	Existing Condition		No-Action Condition		With-Action Condition		Increment
LAND USE							
Residential	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," specify the following:							
Describe type of residential structure	-		Multi-Family Mixed-Use				
No. of dwelling units	0 DUs		77 DUs				-77 DUs
No. of low- to moderate-income units	0 DUs		0 DUs				-
Gross floor area (sf)	0 sf		65,524 gsf				- 65,524 gsf
Commercial	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If "yes," specify the following:							
Type of use			Retail uses		Hotel		-
Gross floor area (sf)			51,921 gsf		98,397 gsf		-51,921 gsf (retail) +98,397 gsf (hotel)
Manufacturing/Industrial	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," specify the following:							
Type of use	-		-		-		
Gross floor area (sf)	-		-		-		
Open storage area (sf)	-		-		-		
If any unenclosed activities, specify:	-		-		-		
Community Facility	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," specify the following:							
Type	-		Art related		-		-
Gross floor area (sf)	-		1,996 gsf		-		-1,996 gsf
Vacant Land	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	
If "yes," describe:	Recently demolished buildings		-		-		-
Other Land Uses	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	

If "yes," describe:		-	-	-
PARKING				
Garages	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Lots	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
If "yes," specify the following:				
No. of public spaces	-	-	-	-
No. of accessory spaces	-	130	130	0 spaces
If "yes," specify the following:				
No. of public spaces	-	-	-	-
No. of accessory spaces	-	-	-	-
ZONING				
Zoning classification	R6/C1-3	R6/C1-3	C4-5X & R6/C1-3*	-
Maximum amount of floor area that can be developed	Residential: 0.78-2.43 (HF) Commercial: 2.0 Community Facility: 4.8	Residential: 0.78-2.43 (HF) Commercial: 2.0 Community Facility: 4.8	C4-5X Residential: 6.0 Commercial: 4.0 Community Facility: 5.0	
Predominant land use and zoning classifications within the land use study area(s) or a 400 ft. radius of proposed project	Commercial; Residential; Institutional;	Commercial; Residential; Institutional;	Commercial; Residential; Institutional;	-

40-31 82nd Street Rezoning EAS
ATTACHMENT B: SUPPLEMENTAL SCREENING

I. INTRODUCTION

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

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

As discussed in Attachment A, “Project Description,” in the future with the Proposed Actions, the Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf) (39,282 zoning square feet (zsf)), located on the cellar, first, and second floors. Approximately 1,996 gsf (1,967 zsf) of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf (99,079 zsf), with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program. The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

However, while the applicant intends on developing the proposed project described above (“Scenario 1”), because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes (“Scenario 2”). The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for

example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

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

Table B-1: Summary of CEQR Technical Areas Screening

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

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

II. SUPPLEMENTAL SCREENING AND SUMMARY OF DETAILED ANALYSES

Land Use, Zoning, and Public Policy

According to the 2014 *CEQR Technical Manual*, a detailed assessment of land use, zoning and public policy is appropriate if an action would result in a significant change in land use or would substantially affect regulations or policies governing land use. Zoning and public policy analyses are typically performed in conjunction with a land use analysis when an action would change the zoning on the site or result in the loss of a particular use. Land use analyses are required when an action would substantially affect land use regulation.

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

Open Space

Based on the 2014 *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 50 residents or 125 workers (these thresholds apply to areas that do not fall in areas that have been designated as "underserved").

Scenario 1 would result in 180 new residents (net) and 73 (net) employees. Scenario 2 would result in 115 (net) hotel employees¹. As Scenario 1 would result in an increase in residents above the 2014 *CEQR Technical Manual* threshold, a residential open space analysis is provided in Attachment D, "Open Space." As discussed in detail in the attachment, no impacts to open space are anticipated as a result of the Proposed Actions.

Shadows

A shadows assessment considers proposed actions that result in new shadows long enough to reach a publicly accessible open space or historic resource (except within an hour and a half of sunrise or sunset). For proposed actions resulting in structures less than 50 feet high, a shadow assessment is generally not necessary unless the site is adjacent to a park, historic resource, or important natural feature (if the features that make the structure significant depend on sunlight). According to the 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," the proposed new building would be 13-stories with a maximum height of 145-feet. As sunlight sensitive open space resources are located within the vicinity of the proposed development site, a shadows assessment is required and has been provided in Attachment E, "Shadows." As detailed in the attachment, The Proposed Actions would result in limited incremental shadows on one sunlight-sensitive resource: Manuel De Dios Unanue Triangle. These project-generated shadows would be limited in duration and coverage, and would not affect the utilization or enjoyment of this open space resource. Additionally, the vegetation of the open space would continue to

¹ Based on 1 employee/2,000 sf

receive adequate sunlight throughout the growing season. As such, the Proposed Actions would not result in any significant adverse shadows impacts.

Historic and Cultural Resources

The Jackson Heights Historic District is located to the north of Roosevelt Avenue, approximately one block north of the proposed development site (see Figure B-1). The historic district, was designated by the New York Landmarks Preservation Commission (LPC) in 1993, and listed in the State and National Registers (S/NR) in 1999 (the S/NR-listed historic district encompasses a larger area than the LPC-designated historic district). The Jackson Heights historic district comprises the most cohesive part of an innovative residential development which was mostly built between the early 1910s and the early 1950s. This development reflects important changes in urban design and planning that took place in the first three decades of the twentieth century. Conceived, planned, built in part, and managed under the direction of a single real estate firm, the Queensboro Corporation, Jackson Heights was one of the earliest neighborhoods in New York to introduce two new building types, "garden apartments" and "garden homes." Commercial, institutional, recreational and transportation facilities were integrated with the residential buildings to create an alternative for middle-class residents to the then typical urban neighborhood.

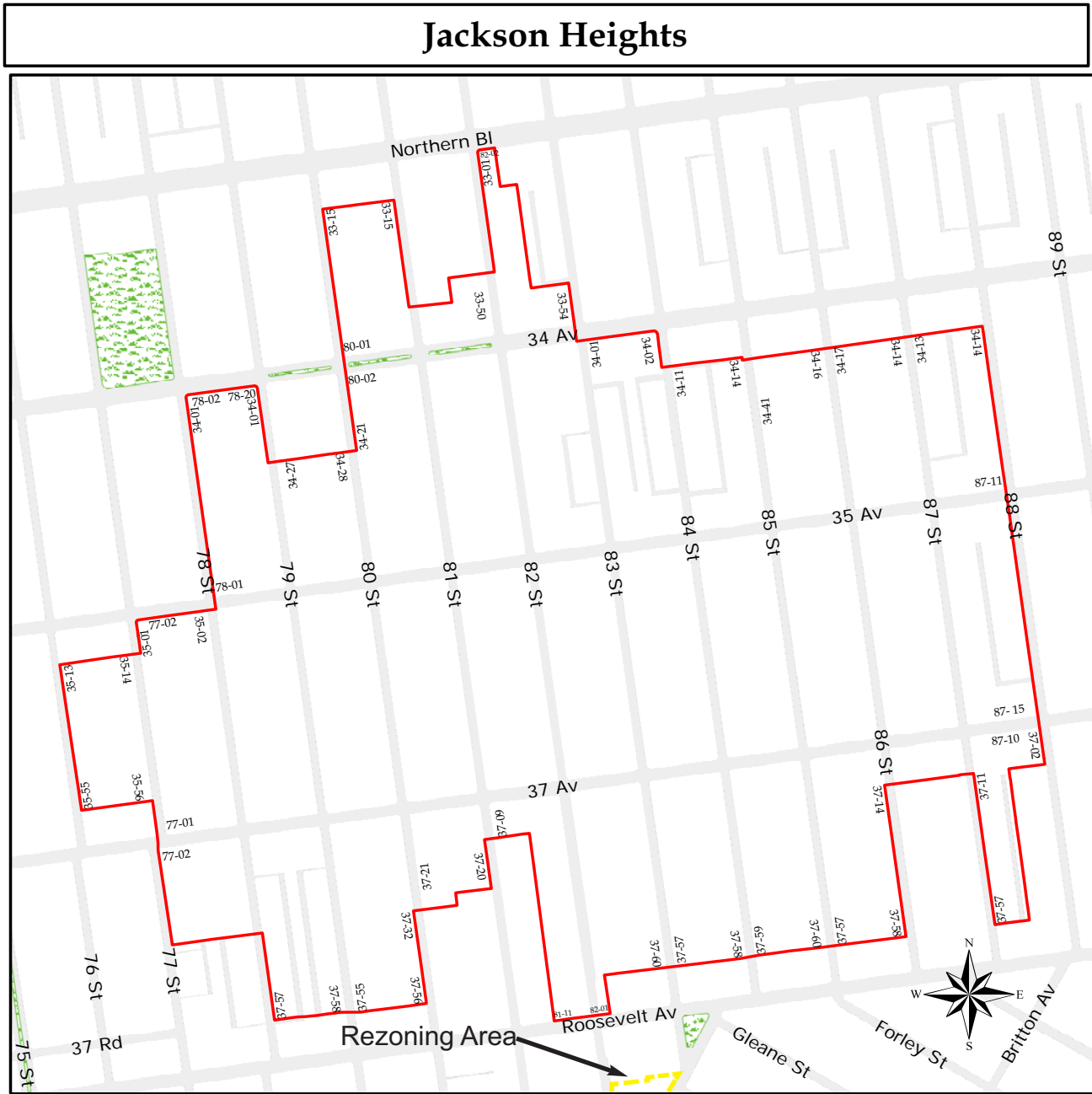
P.S. 89 located at 85-28 Britton Avenue is S/NR-eligible and is in the vicinity of the development site (see Appendix A for LPC Environmental Review Letter date October 27, 2017). However, as P.S. 89 is located over 900 feet away from the development site, the Proposed Actions would have no direct or indirect impacts on this S/NR-eligible historic resource.

The development site is located approximately 300 feet south of the Jackson Heights Historic District. The proposed project was assessed to determine (a) whether there would be a physical change to any designated property as a result of the proposed project; (b) whether there would be a physical change to the setting of any designated resource, such as context or visual prominence as a result of the proposed project; and (c) if so, whether the change is likely to diminish the qualities of the resource that make it important.


Direct (Physical) Impacts

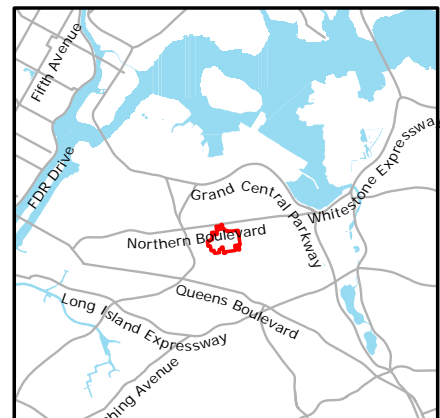
Historic resources can be directly impacted by physical destruction, demolition, damage, alteration, or neglect of all or part of a historic resource. For example, alterations, such as the addition of a new wing to a historic building or replacement of the resource's entrance, could result in significant adverse impacts, depending on the design. Direct impacts also include changes to an architectural resource that cause it to become a different visual entity, such as a new location, design, materials, or architectural features.

It should be noted that privately owned properties that are NYCLs or in LPC-designated historic districts are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition can occur, regardless of whether the project is publicly or privately funded. Architectural resources that are listed on the S/NR or that have been found eligible for listing are given a measure of protection under Section 106 of the National Historic Preservation Act from the impacts of projects sponsored, assisted, or approved by federal agencies. Although preservation is not mandated, federal agencies must attempt to avoid adverse impacts on such resources through a notice, review, and consultation process. Properties listed on the S/NR are similarly protected against impacts resulting from projects sponsored, assisted, or approved by State agencies under the State Historic Preservation Act.



Jackson Heights Historic District
Queens
Designated October 19, 1993

 Historic District Boundaries



However, private owners of properties eligible for, or even listed on, the S/NR using private funds can alter or demolish their properties without such a review process.

As the proposed project is site-specific and not located within or directly adjacent to the Jackson Heights Historic District, it would therefore have no direct impacts on any LPC-designated, S/NR-eligible, or S/NR-listed historic resources located within a 400-foot boundary of the project site.

Indirect (Contextual) Impacts

Contextual impacts may occur to architectural resources under certain conditions. According to the 2014 *CEQR Technical Manual*, possible impacts to architectural resources may include isolation of the property from, or alteration of, its setting or visual relationships with the streetscape. This includes changes to the resource's visual prominence so that it no longer conforms to the streetscape in terms of height, footprint, or setback; is no longer part of an open setting; or can no longer be seen as part of a significant view corridor.

The Proposed Actions would not adversely alter the setting or visual context of any historic resources in the area, nor would it eliminate or screen significant views of any historic resource. Additionally, no incompatible visual, audible, or atmospheric elements would be introduced by the proposed project to any historic resource's setting. Therefore, the proposed project would not result in any significant adverse impacts to distinguishing characteristics of the Jackson Heights Historic District.

The Proposed Actions would replace a 3- to -4-story brick building that was formerly occupied by a movie theater but is currently vacant, a single-story building fronting on Baxter Avenue that contains a dry cleaning facility, and two single- and two-story commercial structures fronting on Baxter and 82nd Streets containing a number of retail and office uses (e.g., restaurant, wine and liquor store, produce vendors, etc.) with a new mixed-use building. The proposed building under Scenario 1 would be 145 feet in height or 13 stories. The proposed building under Scenario 2 would be approximately 120 feet in height. While the buildings under both Scenario 1 and 2 would be taller than the buildings in the immediate vicinity of the development site, this would not be perceived as a substantial difference in surrounding pedestrian views. The proposed buildings under both Scenario 1 and 2 would be built in an area characterized by a variety of building uses, shapes, and forms and would be located across Roosevelt Avenue from the elevated number 7 train, a tall structure in the study area. The Proposed Actions would allow an underutilized site to be redeveloped and activated with street level retail, residential, and community facility uses. As such, the Proposed Actions would not result in any significant adverse contextual impacts in the surrounding area, but rather is expected to enhance the historic character of the project site and the context of the Jackson Heights Historic District.

Construction-Related Impacts

Any new construction taking place within historic districts or adjacent to individual landmarks has the potential to cause damage to contributing buildings to those historic resources from ground-borne construction vibrations. As noted above, the proposed project includes the construction of a new building on the project site, which is located approximately 300 feet from the Jackson Heights Historic District.

The New York City Building Code provides some measures of protection for all properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported. Additional protective measures

apply to LPC-designated Landmarks and S/NR-listed historic buildings located within 90 linear feet of a proposed construction site. For these structures, the NYC Department of Buildings (DOB)'s Technical Policy and Procedure Notice (TPPN) #10/88 applies. TPPN #10/88 supplements the standard building protections afforded by the Building Code by requiring, among other things, a monitoring program to reduce the likelihood of construction damage to adjacent LPC-designated or S/NR-listed resources (within 90 feet) and to detect at an early stage the beginnings of damage so that construction procedures can be changed.

Adjacent historic resources, as defined in the procedure notice, only include designated NYCLs, properties within NYCL historic districts, and listed S/NR properties that are within 90 feet of a lot under development or alteration. They do not include S/NR-eligible, NYCL-eligible, potential, or unidentified architectural resources. Construction period impacts on any designated historic resources would be minimized, and the historic structures would be protected, by ensuring that adjacent development projected as a result of the proposed project adheres to all applicable construction guidelines and follows the requirements laid out in TPPN #10/88. As the project site is located approximately 300 feet south of the Jackson Heights Historic District, construction damage to buildings within the historic district is not anticipated. As such, no construction-related impacts on historic resources would be anticipated as a result of the Proposed Actions.

Shadows

As discussed above under "Shadows," the proposed project would not result in shadows being cast on sunlight-sensitive features of historic resources within an approximate 400-foot radius of the project site. As such, no significant adverse shadows impacts to historic architectural resources are anticipated in the future with the Proposed Actions.

Urban Design and Visual Resources

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

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

The proposed action includes the rezoning of an from a R6/C1-3 to a C4-5X district, which would result in a development that would differ from what is permitted as-of-right, and as such, an analysis of urban design and visual resources is appropriate. 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 these technical areas 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, methane, polychlorinated biphenyls and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the 2014 *CEQR Technical Manual*, the potential for significant adverse impacts from hazardous materials can occur when: (a) hazardous materials exist on a site, and (b) an action would increase pathways to their exposure; or (c) an action would introduce new activities or processes using hazardous materials.

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

Transportation

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

The 2014 *CEQR Technical Manual* identifies minimum incremental development densities that potentially require a transportation analysis. Development at less than the development densities shown in Table 16-1 of the 2014 *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 5 (which includes the rezoning area) the development thresholds include an increment of 100 DUs for residential, 10,000 sf for local retail, and 15,000 sf for community facility. According to the 2014 *CEQR Technical Manual*, if an action would result in development greater than one of the minimum development density thresholds in Table 16-1, a Level 1 (Project Trip Generation) Screening Assessment should be prepared. In most areas of the city, including the rezoning area, if the proposed action is projected to result in fewer than 50 peak-hour vehicle trips, 200 peak-hour subway/rail or bus transit riders, or 200 peak-hour pedestrian trips, it is unlikely that further analysis would be necessary. If these trip-generation screening thresholds are exceeded, a Level 2 (Project-generated Trip Assignment) Screening Assessment should be prepared to determine if the proposed action would generate or divert 50 peak-hour vehicle trips through any intersection, 200 peak-hour subway trips through a single station, 50 peak-hour bus trips on a single bus route in the peak direction, or 200 peak-hour pedestrian trips through a single pedestrian element. If any of these Level 2 screening thresholds are met or exceeded, detailed analysis for the respective mode is required.

As discussed in Attachment H, "Transportation," Scenario 2 would not exceed the Level 1 thresholds for traffic, pedestrians, or transit and as such a detailed transportation analysis would not be warranted. As discussed in detail in Attachment H, Scenario 1 would exceed the Level 2 screening thresholds for pedestrians, and as such, a detailed analysis of pedestrians is provided in Attachment H. As discussed in Attachment H, the Proposed Actions would not result in any significant adverse impacts to pedestrian conditions. As further discussed in Attachment H, Scenario 1 does not warrant a detailed analysis of traffic, parking, or transit.

Noise

The proposed action would result in residential and commercial uses on the development site. Consistent with the 2014 *CEQR Technical Manual*, existing noise levels should be measured and compared to the Noise Exposure Guidelines for these types of uses presented in Table 19-2 of the Manual. As such, a noise analysis has been prepared and is provided in Attachment I, "Noise." As discussed in detail Attachment I, the noise analysis determined that the development site would require an (E) designation that would specify the required noise attenuation measures for the southern and western facades of the proposed building. As discussed in Attachment I, the Proposed Actions would not result in any significant adverse noise impacts.

The proposed development would not generate sufficient traffic to result in a significant noise impact (i.e., doubling of Noise PCEs). Therefore, consistent with the guidelines of the 2014 *CEQR Technical Manual*, an assessment of mobile noise impacts is not provided in this EAS.

Air Quality

According to the guidelines provided in the 2014 *CEQR Technical Manual*, air quality analyses are conducted in order to assess the effect of an action on ambient air quality (i.e., the quality of the surrounding air), or effects on the project because of ambient air quality. Air quality can be affected by "mobile sources," pollutants produced by motor vehicles, and by pollutants produced by fixed facilities, i.e., "stationary sources." As per the 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, further analysis of air quality mobile sources from action-generated vehicle trips has been screened out in accordance with 2014 *CEQR Technical Manual* assessment screening thresholds.

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

The proposed project was analyzed for potential stationary source impacts, which is provided in Attachment J, "Air Quality." As discussed in detail Attachment J, the stationary source air quality analysis determined that based on the screening analysis, no potential significant impacts from HVAC emissions on existing land uses are likely to occur. In addition, the results of the major emission source analysis indicate that there would be no exceedances of the *CEQR* significant impact criteria or the applicable national air quality standards at the proposed development site. As discussed therein, no significant adverse stationary air quality impacts are expected in the future with the Proposed Actions.

40-31 82nd Street Rezoning EAS
ATTACHMENT C: LAND USE, ZONING, AND PUBLIC POLICY

I. INTRODUCTION

Under 2014 *City Environmental Quality Review (CEQR) Technical Manual* guidelines, a land use analysis evaluates the uses and development trends in the area that may be affected by a proposed action, and determines whether that proposed action is compatible with those conditions or may affect them. Similarly, the analysis considers the action's compliance with, and effect on, the area's zoning and other applicable public policies.

30 GC TIC, LLC (the "Applicant") is seeking two discretionary zoning actions in order to facilitate the redevelopment of 40-31 82nd Street (Block 1493, Lot 15) in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4 (the "proposed development site"). The discretionary actions include: (i) a zoning map amendment to rezone a portion of the proposed development site from R6/C1-3 to a C4-5X district; and, (ii) a zoning text amendment to ZR Appendix F to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area. Collectively, the zoning map amendment and the zoning text amendment are the "Proposed Actions" for the purposes of the environmental analysis.

As discussed in Attachment A, "Project Description," the Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf), located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program. The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level. For CEQR analysis purposes, "affordable" refers to residential units set aside for households earning 80 percent or below of the Area Median Income (AMI). As described in Attachment A, "Project Description," approximately 20 percent of the overall RWCDs residential floor area (approximately 24 DUs) are assumed to be set aside for households earning 80 percent (or below) of AMI. Therefore, 24 affordable DUs will be analyzed as part of the RWCDs.

However, as discussed in Attachment A, "Project Description," while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes ("Scenario 2"). The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional

commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

As the Proposed Actions could result in a hotel use, a discussion of both scenarios is included in the analysis presented below.

Under CEQR guidelines, a preliminary land use 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. CEQR also requires a detailed assessment of land use conditions if a detailed assessment has been deemed appropriate for other technical areas, or in generic or area-wide zoning map amendments. Therefore, this chapter includes a detailed analysis that involves a thorough description of existing land uses and zoning within the rezoning area and the broader study area. Following the guidelines of the 2014 *CEQR Technical Manual*, the detailed analysis describes existing and anticipated future conditions to a level necessary to understand the relationship of the proposed action to such conditions, assesses the nature of any changes to these conditions that would be created by the proposed action, and identifies those changes, if any, that could be significant or adverse. The detailed assessment discusses existing and future conditions with and without the proposed action in the 2020 analysis year for a primary study area (coterminous with the rezoning area), and a secondary (400 foot) study area surrounding the rezoning area.

II. PRINCIPAL CONCLUSIONS

No significant adverse impacts on land use, zoning, or public policy, as defined by the guidelines for determining impact significance set forth in the 2014 *CEQR Technical Manual*, are anticipated in the future with the Proposed Actions in the primary or secondary study areas. The Proposed Actions would not directly displace any land uses so as to adversely affect surrounding land uses, nor would it generate land uses that would be incompatible with land uses, zoning, or public policies 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 it cause a substantial number of existing structures to become non-conforming. The Proposed Actions would also not result in land uses that conflict with public policies applicable to the primary or secondary study areas.

The Proposed Actions would result in an overall increase in residential, community facility, and commercial uses within the primary study area, when compared to conditions in the future without the Proposed Actions. The proposed zoning map amendment would allow for a variety of uses at a scale and density that is compatible with the existing zoning designations in the surrounding area. The proposed rezoning would provide opportunities for higher density residential and commercial uses on an underutilized lot while also providing much needed affordable housing.

III. METHODOLOGY

The purpose of this attachment is to examine the effects of the Proposed Actions and determine whether or not it would result in any significant adverse impacts on land use, zoning, or public policy. The analysis methodology is based on the guidelines of the 2014 *CEQR Technical Manual* and examines the Proposed Action's consistency with land use patterns and development trends, zoning regulations, and other applicable public policies.

According to the 2014 *CEQR Technical Manual*, a detailed assessment of land use, zoning, and public policy may be appropriate when 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 2014 *CEQR Technical Manual*, the detailed analysis describes existing and anticipated future conditions to a level necessary to understand the relationship of the proposed action to such conditions, assesses the nature of any changes on these conditions that would be created by the proposed action, and identifies those changes, if any, that could be significant or adverse.

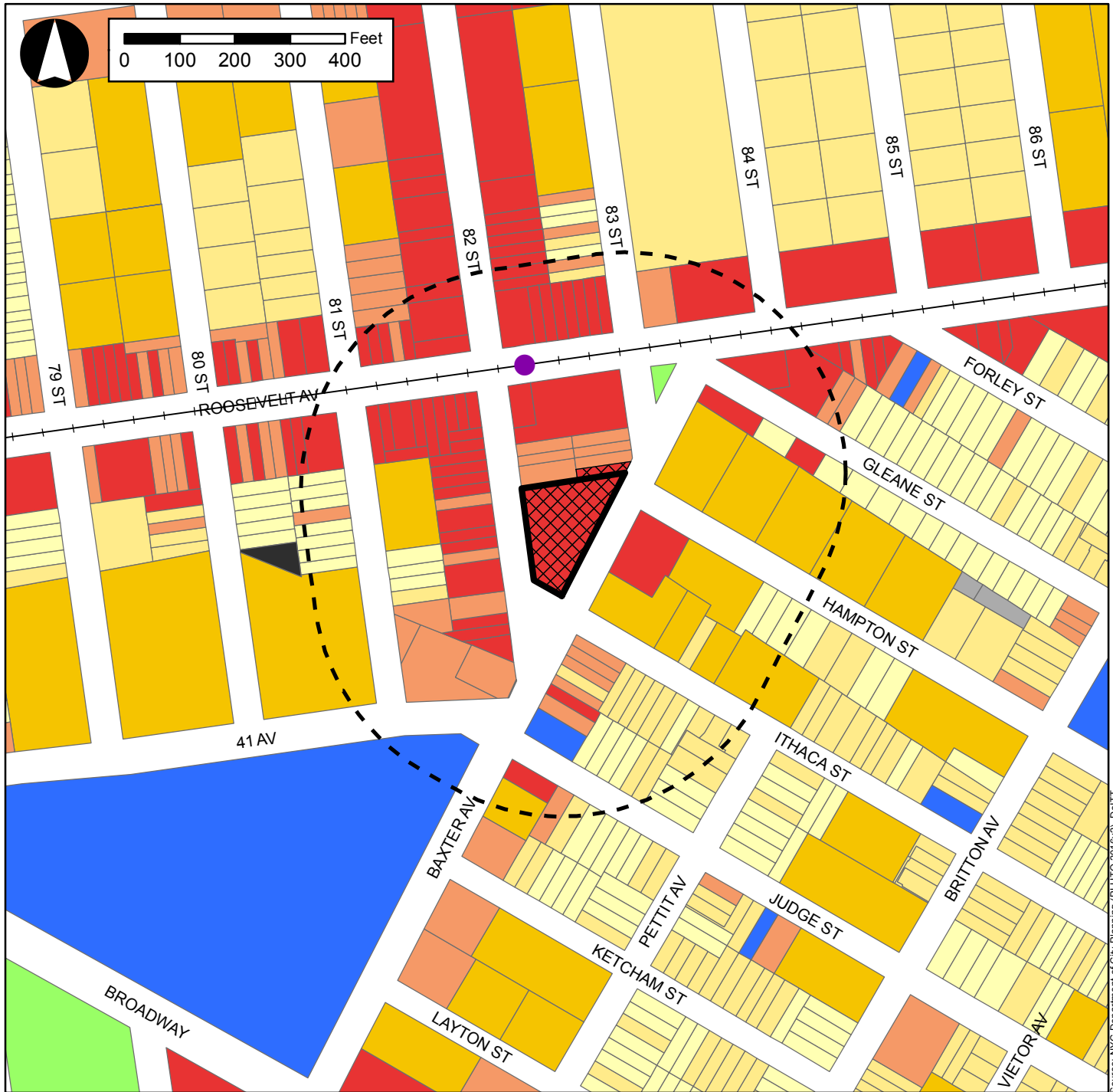
Existing land uses were identified through review of a combination of sources including field surveys and secondary sources such as the City's Primary Land Use Tax Lot Output (PLUTO™) data files for 2014, and websites such as NYC Open Accessible Space Information System (OASIS, www.oasisnyc.net) and NYCityMap (<http://gis.nyc.gov/doitt/nycitymap/>). New York City Zoning Maps and the Zoning Resolution 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 study areas.

Analysis Year

The analysis year is the Proposed Action's anticipated completion date of 2020. Therefore the future No-Action condition accounts for land use and development projects, initiatives, and proposals that are expected to be completed by 2020.







Study Area Definition

According to the 2014 *CEQR Technical Manual*, the appropriate study area for land use, zoning, and public policy is related to the type and size of the proposed project, as well as the location and context of the area that could be affected by the project. Study area radii vary according these factors, with suggested study areas ranging from 400 feet for a small project to 0.5 miles for a very large project. In accordance with CEQR guidelines, land use, zoning, and public policy are addressed and analyzed for two geographical areas: (1) the rezoning area (also referred to as the primary study area); and (2) a secondary study area. The secondary study area extends an approximate 400 feet from the boundary of the rezoning area and encompasses areas that have the potential to experience indirect impacts as a result of the proposed action. It is generally bounded by 81st Street to the west, Pettit Avenue/84th Street to the east, 41st Avenue to the south, and Roosevelt Avenue to the north. Both the primary and secondary study areas have been established in accordance with 2014 *CEQR Technical Manual* guidelines and can be seen in Figure C-1, "Land Use Study Area."



Source: NYC Department of City Planning (PLUTO 2016v2), DoITT

Legend

-  400-Foot Radius
-  Proposed Rezoning Area
-  Proposed Development Site
-  Elevated Subway
-  82nd St. Subway Station
-  One & Two Family Buildings
-  Multi-Family Walk-Up Buildings
-  Multi-Family Elevator Buildings
-  Mixed Residential/Commercial Buildings
-  Commercial/Office Buildings
-  Industrial/Manufacturing
-  Transportation/Utility
-  Public Facilities & Institutions
-  Open Space
-  Parking Facilities
-  Vacant Land
-  All Others or No Data

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. In addition, under CEQR guidelines, if a detailed assessment is required in the technical analyses of socioeconomic conditions, neighborhood character, traffic and transportation, air quality, noise, infrastructure, or hazardous materials, a detailed land use assessment is appropriate. Furthermore, for some projects, such as generic or area-wide zoning map amendments, more detailed land use and zoning information is necessary to sufficiently inform other technical reviews and determine whether changes in land use could affect conditions analyzed in those technical areas. This EAS provides detailed assessments of open space and noise; therefore a detailed assessment of land use and zoning is warranted and is provided in Section V below. As a detailed assessment is warranted for the Proposed Actions, the information that would typically be included in a preliminary assessment (e.g., physical setting, present land use, zoning information, etc.) has been incorporated into the detailed assessment in Section V below. As discussed in the detailed assessment, the Proposed Actions are not expected to adversely affect land use or zoning.

Public Policy

According to the 2014 *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, which 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.

Besides zoning, other public policies applicable to portions of the primary and secondary study areas are Food Retail Expansion to Support Health (FRESH), *Housing New York*, and the 82nd Street Partnership.

The proposed rezoning area and surrounding area are not part of an urban renewal area, within the coastal zone boundary, nor are there any designed in-place industrial parks within the area. No siting of public facilities is proposed as part of the Proposed Actions, and therefore a Fair Share analysis is not warranted. As discussed in the detailed assessment, the Proposed Actions are not expected to adversely affect any public policies.

V. DETAILED ASSESSMENT

Existing Conditions

Land Use

The land use study area consists of both a primary study area, which is coterminous with the boundaries of the rezoning area, where the land use effects of the proposed action are direct, and a secondary study area consisting of properties within an approximate 400 foot radius of the boundaries of the rezoning area, Second Avenue to the west, East 32nd Street to the south, East 35th Street to the north, and First Avenue to the east. These study areas and their associated land uses are shown in Figure C-1.

Existing Land Uses in the Primary Study Area

The Applicant-owned proposed development site at 40-31 82nd Street (Queens Block 1493, Lot 15) is an irregularly-shaped lot with approximately 166.7 feet of frontage along 82nd Street to the west, approximately 52.8 feet of frontage along Ithaca Street to the south, and approximately 268.6 feet of frontage along Baxter Avenue to the east. The approximately 23,428 sf proposed development site is currently zoned R6 with a C1-3 commercial overlay, and is occupied by a number of structures ranging in height from one to four stories. The existing commercial buildings on the site have recently been demolished. The structures that previously occupied the site included a 3- to -4-story brick building that was formerly occupied by a vacant movie theater, a single-story building fronting on Baxter Avenue that contains a dry cleaning facility, and two single- and two-story commercial structures fronting on Baxter and 82nd streets containing a number of retail and office uses (e.g., restaurant, wine and liquor store, produce vendors, etc.).

Existing Land Uses in the Secondary Study Area

Table C-1 summarizes the existing generalized land uses within the secondary study area by tax lots and land area. Overall, as reflected in the table and in Figure C-1, the land use secondary study area contains a general mix of uses, with the predominant land uses being residential and commercial and office uses which occupies 43.84% and 39.9%, respectively, of the total land area within the study area.

The remainder of Block 1493 is also zoned R6/C1-3 and the surrounding area within an approximate 400-foot radius is predominately zoned R6, as well as R4, R5, and R7B; a C4-3 commercial district is located north of Roosevelt Avenue, between 81st and 83rd streets. As shown in Figure C-2, C1-3 commercial overlays are mapped along Baxter Avenue and 82nd Street adjacent to the subject block, as well as along Roosevelt Avenue to the east of 83rd Street; a C2-3 commercial overlay is mapped along Roosevelt Avenue to the west of 82nd Street. The 82nd Street Business Improvement District includes properties facing 82nd street from the north end of 37th Avenue to Ithaca Street, and includes the proposed development site and project area.

Table C-1: Land Uses within 400 feet of the Rezoning Area

Land Use	Area sq ft	% of Total Land Area
Residential	214,840	43.84%
One and Two Family	49,639	10.13%
Multi-Family Walkup	37,542	7.66%
Multi-Family Elevator Buildings	127,6599	26.05%
Mixed Residential and Commercial	76,459	15.60%
Commercial and Office	192,047	39.9%
Industrial and Manufacturing	0	0%
Transportation and Utility	0	0%
Public Facilities and Institutions	5,000	1.02%
Open Space	1,740	0.36%
Parking Facilities	0	0.0%
Vacant Land	1	0.02%
All Others or No Data	0	0.0%
Total	490,188	100%

The proposed rezoning area is located in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4. The northern portion of Block 1493 is occupied mostly by two- and three-story commercial structures fronting on Roosevelt Avenue, and two- and three-story mixed-use structures in the mid-block, some of which have residential apartments on the upper floors. The northern portion of the block fronts on Roosevelt Avenue, and is adjacent to the elevated subway tracks for the 7 subway train. As shown in Figure C-1, land uses within an approximate 400-foot radius consist of a mix of residential, commercial, and institutional uses. Commercial uses are concentrated along the Roosevelt Avenue and 82nd Street corridors. Roosevelt Avenue is a major commercial corridor, lined with 2-story commercial and mixed-use buildings. Residential uses in the area are characterized by one- and two-family residences and multi-family elevator buildings.

The Jackson Heights Historic District is located to the north of Roosevelt Avenue, approximately one block north of the proposed development site. The historic district, was designated by the New York Landmarks Preservation Commission (LPC) in 1993, and listed in the State and National Registers (S/NR) in 1999 (the S/NR-listed historic district encompasses a larger area than the LPC-designated historic district). The Jackson Heights historic district comprises the most cohesive part of an innovative residential development which was mostly built between the early 1910s and the early 1950s. This development reflects important changes in urban design and planning that took place in the first three decades of the twentieth century. Conceived, planned, built in part, and managed under the direction of a single real estate firm, the Queensboro Corporation, Jackson Heights was one of the earliest neighborhoods in New York to introduce two new building types, "garden apartments" and "garden homes." Commercial, institutional, recreational and transportation facilities were integrated with the residential buildings to create an alternative for middle-class residents to the then typical urban neighborhood.

Other notable uses within the surrounding area include Elmhurst Hospital, which is located approximately one block to the southwest of the proposed development site, and two small open space resources are located in the vicinity of the proposed development site (Manuel De Dios Unanue Triangle to the northeast, and Dunningham Triangle to the south). The proposed development site and most of Block 1493 are located within the 82nd Street Business Improvement District (BID), which extends on both sides of 82nd Street from Ithaca Street to 37th Avenue. The elevated subway tracks for the 7 subway train run along Roosevelt Avenue, and the nearest subway station is the 82nd Street-Jackson Heights station adjacent to the subject block, with an entrance located at the southwest corner of Roosevelt Avenue and 82nd Street.

Zoning

The assessment of zoning uses the same study areas used for land use: the primary study area, consisting of the proposed rezoning area/project site; and the secondary study area, an area within roughly a 400 foot radius of the project area boundary.

Existing Zoning in the Primary Study Area

The proposed development site comprises Block 1493, Lot 15 and is zoned R6/C1-3. The R6 district permits residential and community facility buildings developed pursuant to height factor or quality housing regulations. For height factor regulations, the R6 zoning district allows a maximum FAR from 0.78 to 2.43 for residential use; the required open space ratio (OSR) ranges from 27.5 to 37.5 percent. The sky exposure plane determines the maximum height for R6 buildings under quality housing regulations. Accessory parking is required for 70% of dwelling units. The C1-3 district is a commercial overlay. Mapped along streets that serve local retail needs, they are found extensively throughout the city’s lower- and medium-density areas and occasionally in higher-density districts. Typical retail uses include neighborhood grocery stores, restaurants and beauty parlors. In mixed buildings, commercial uses are limited to one or two floors and must always be located below the residential use.

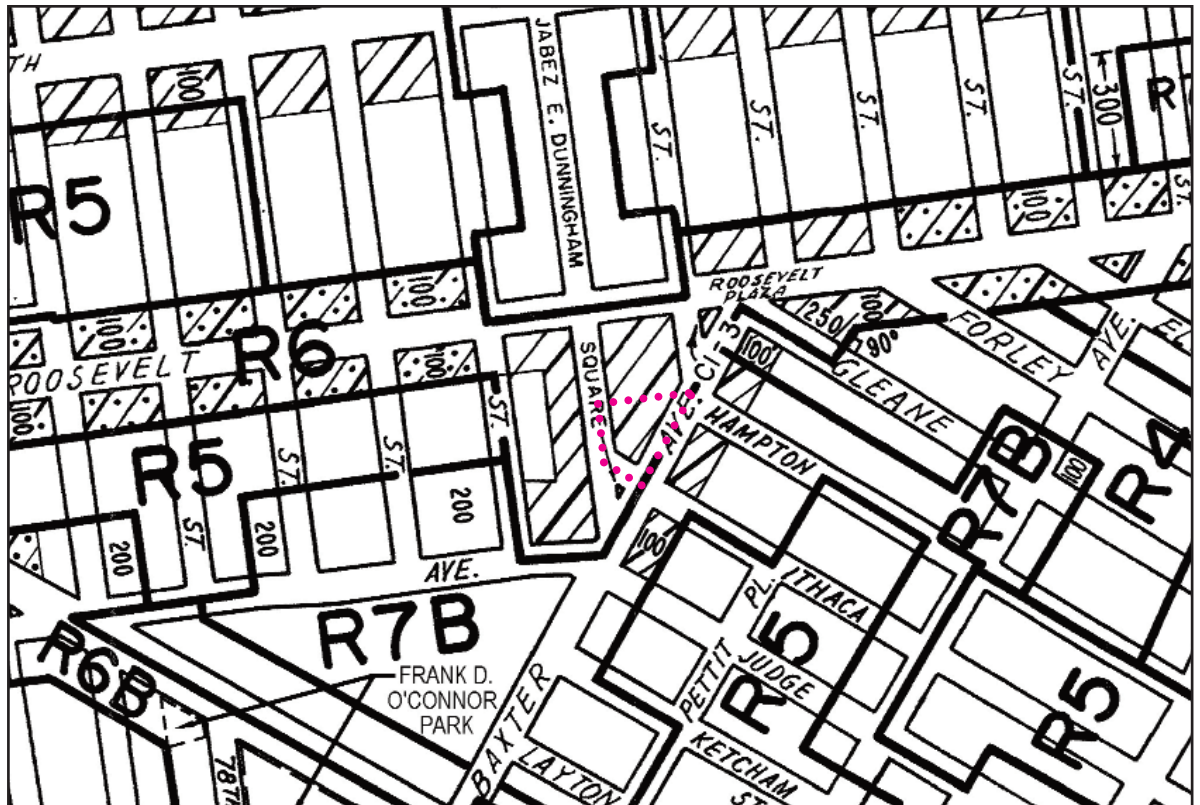
When commercial overlays are mapped in R6 through R10 districts, the maximum commercial FAR is 2.0. Commercial buildings are subject to commercial bulk rules.

Existing Zoning in the Secondary Study Area

In addition to the R6/C1-3 zoning district within the primary and secondary study areas described above, the secondary study area contains R4, R5, R7B, R7-1, C4-3, and C2-3 commercial overlay districts (see Figure C-2). Table C-2 lists the zoning classifications of the secondary study area.

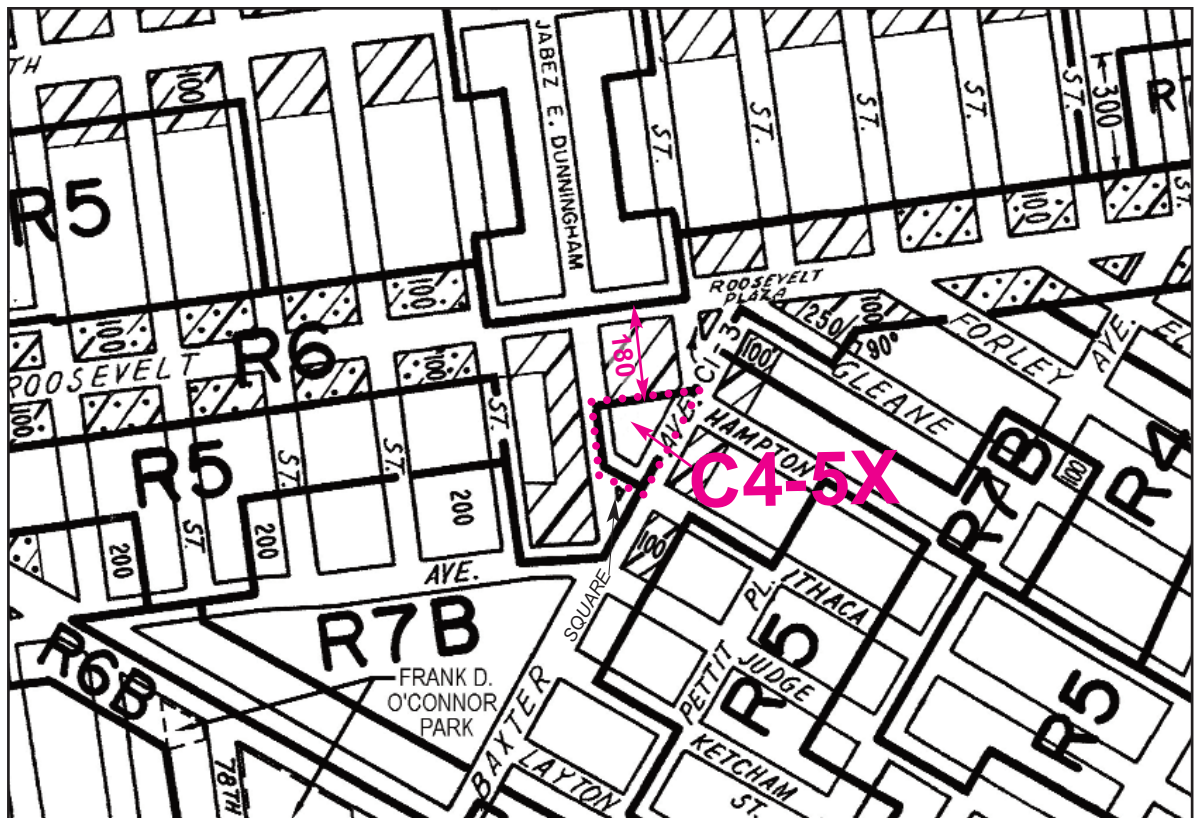
Table C-2: Secondary Study Area Existing Zoning Districts

District	Definition/General Use	Maximum FAR
R4	The FAR of 0.75 in R4 districts, plus an attic allowance of up to 20% for inclusion of space under the pitched roof common to these districts, usually produces buildings with three stories. R4 districts permit a maximum building height of 35 feet and maximum street wall length of 185 feet.	R: 0.75 (attic allowance of up to 20%) CF: 2.0
R5	R5 districts allow a variety of housing at a higher density than permitted in R4 districts. The FAR of 1.25 typically	R: 1.25 CF: 2.0



EXISTING ZONING

Proposed Rezoning Area



PROPOSED ZONING



C1-1	C1-2	C1-3	C1-4	C1-5	C2-1	C2-2	C2-3	C2-4	C2-5

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter R (rules of District Transactions) of the zoning laws.

	produces three-and four-story attached houses and small apartment houses. With a height limit of 40 feet, R5 districts provide a transition between lower- and higher-density neighborhoods and are widely mapped in Brooklyn, Queens and the Bronx.	
R7B	In contextual R7B districts, the mandatory Quality Housing regulations generally produce six- to seven-story apartment buildings. The FAR is 3.0; the base height of a new building before setback must be between 40 and 60 feet before rising to a maximum building height of 75 feet.	R: 3.0 CF: 3.0
R7-1	R7 districts are medium-density apartment house districts. The height factor regulations for R7 districts encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. The FAR in R7 districts ranges from 0.87 to a high of 3.44. The building must be set within a sky exposure plane which, in R7 districts, begins at a height of 60 feet above the street line and then slopes inward over the zoning lot.	R: 0.87-3.44 CF: 4.8
C4-3	C4 districts are mapped in regional commercial centers that are located outside of the central business districts. In these areas, specialty and department stores, theaters and other commercial and office uses serve a larger region and generate more traffic than neighborhood shopping areas.	R: 0.78-2.43 C: 3.4 CF: 4.8
C2-3	C2-3 districts are commercial overlays mapped within residence districts. Mapped along streets that serve local retail needs, they are found extensively throughout the city's lower- and medium-density areas and occasionally in higher-density districts. Typical retail uses include 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. Overlay districts differ from other commercial districts in that residential bulk is governed by the residence district within which the overlay is mapped.	C: 2.0 (within R6-R10) R: 0.78-2.43 (in R6 district) CF: 4.8 (in R6 district)

Notes: CF: community facility, R: residential, C: commercial, M: manufacturing

Public Policy

Primary Study Area

As discussed above, besides zoning, other public policies applicable to portions of the primary study area are Food Retail Expansion to Support Health (FRESH), *Housing New York*, and the 82nd Street Partnership.

Food Retail Expansion to Support Health (FRESH) Designated Area

The New York City FRESH Program provides zoning incentives and discretionary tax incentives to promote the establishment and retention of neighborhood grocery stores in communities that lack full-

line grocery stores. The project site and the secondary study area are located within a FRESH Designated Area with discretionary tax incentives.

The City's FRESH program is open to grocery store operators renovating existing retail space or developers constructing or renovating retail space that will be leased by a full-line grocery store operator in FRESH-eligible areas. To be eligible for the program, projects must 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.

Financial incentives are available to eligible grocery store operators and developers to facilitate and encourage FRESH Food Stores in the designated area. These incentives include real estate tax reductions, sales tax exemptions, floor area bonuses, and mortgage recording tax deferrals.

Housing New York

Housing New York is a five-borough, ten-year strategy to address the City's affordable housing crisis. The plan, which was created through coordination with 13 agencies and with input from over 200 individual stakeholders, outlines more than 50 initiatives to support the City's goal of building or preserving 200,000 units of high-quality affordable housing to meet the needs of more than 500,000 people. The goals of the Housing New York plan are:

- Foster diverse, livable neighborhoods;
- Preserve the affordability and quality of the existing housing stock;
- Build new affordable housing for all New Yorkers;
- Promote homeless, senior, supportive and accessible housing;
- Refine City financing tools and expanding funding sources for affordable housing.

The key initiative of Housing New York is the Mandatory Inclusionary Housing (MIH) program, which would require a share of new housing to be affordable in areas that are rezoned to support new housing production. Under the MIH program, affordable housing is required, not optional, when developers build in a newly rezoned area, whether rezoned as part of a City neighborhood plan or a private rezoning application. As discussed above, the Proposed Actions includes a text amendment to Appendix F of the New York City Zoning Resolution to map a MIH area consistent with the proposed rezoning area, which would result in an increase of 37-44 affordable dwelling units over No-Action conditions. As such, the Proposed Actions under Scenario 1 would be consistent with this policy.

82nd Street Partnership

Founded in 1990 and based in Jackson Heights, Queens, the 82nd Street Partnership is an award-winning neighborhood development organization governed by a board of directors comprised of property

owners, commercial tenants, government officials and community leaders. A not-for-profit entity, the Partnership is responsible for managing and promoting the local business improvement district (BID), which covers four blocks and includes 44 properties, a triangle plaza, and nearly 200 businesses.

The mission of the 82nd Street Partnership is to improve quality of life and support business growth by creating a cleaner, more welcoming and sustainable neighborhood for everyone. This is achieved through a range of local economic development programs, including neighborhood marketing, placemaking, streetscape beautification, supplemental sanitation, and advocacy.

As discussed in Attachment A, "Project Description," the Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf), located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 147 dwelling units (DUs). The Proposed Actions would result in local retail and community facility uses on a currently underutilized lot. The Proposed Actions would result in development that, in addition to being appropriate for the development site, would complement and improve the existing land use character of the secondary study area as a whole and enhance and enliven the streetscape surrounding the rezoning area. As such, the Proposed Actions under Scenario 1 would be consistent with the mission of the 82nd Street Partnership. In addition, Scenario 2 would also be consistent with the mission of the 82nd Street Partnership as a hotel development would strengthen and diversify the economic development of the area.

Secondary Study Area

There are currently no public policies that are applicable to the study area other than FRESH, *Housing New York*, and the 82nd Street Partnership.

Future Without the Proposed Action (No-Action Condition)

Land Use

Primary Study Area

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to be art-related space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

Secondary Study Area

No changes to land use in the secondary study area are anticipated in the future without the Proposed Actions.

Zoning

No changes to zoning on the project site or in the secondary study area are anticipated in the future without the Proposed Actions.

Public Policy

There would be no changes in public policy applicable to the primary or secondary study areas planned in the future without the Proposed Actions.

Future With the Proposed Action (With-Action Condition)

This section describes the land use, zoning, and public policy conditions that would result from the Proposed Actions by 2020 and evaluates the potential for the Proposed Actions to result in significant adverse impacts.

Land Use

Per CEQR methodology, although changes in land use could lead to impacts in other technical areas, significant adverse land use impacts are extraordinarily rare in the absence of an impact in another technical area. Also, according to the 2014 *CEQR Technical Manual*, many land use changes may be significant, but not adverse.

In the future with the Proposed Actions, the development site is expected to be redeveloped with residential and retail uses with a greater amount of development than would occur under 2020 No-Action conditions.

Primary and Secondary Study Areas

With the proposed zoning map change from R6/C1-3 to C4-5X residential, commercial, and community facility uses would continue to be permitted in the project area. The proposed C4-5X zoning district would allow residential uses up to a maximum FAR of 6.0 (with Inclusionary Housing Program in a Mandatory Inclusionary Housing Area), community facilities up to 5.0 FAR, and commercial uses up to 4.0 FAR. In addition, the proposed C4-5X district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12).

By 2020 under With-Action conditions, it is expected that the applicant would complete the proposed development described above, which would be facilitated by the Proposed Actions, as previously stated.

Under the With-Action RWCDs, the Applicant-owned proposed development site would be redeveloped with a 13-story (145-foot tall), approximately 203,830 gsf (140,373 zsf) mixed-use building (excluding parking and loading). The commercial component of the project would consist of approximately 76,375 gsf, located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 31-36 DUs) would be affordable units pursuant to the MIH Program. While the Applicant-proposed number of dwelling units would have an average unit size of approximately 1,045 gsf per unit, which would result in 120 DUs, for conservative analysis purposes, the RWCDs assumes 850 gsf per unit. This would result in 147 DUs for RWCDs analysis purposes. Twenty-five to thirty percent of the residential floor area (equivalent to 37-44 DUs) would be affordable units pursuant to the MIH Program for RWCDs analysis purposes. C4-5X zoning districts require parking spaces for a minimum of 50 percent of market-rate DUs. As the proposed rezoning area is located in a Designated Transit Zone, no parking spaces are required for affordable DUs. Therefore, it is anticipated that 51-55 accessory parking spaces would be provided for the residential component of the proposed development site. As discussed above, the proposed development would include a total of 128 accessory parking spaces on the sub-cellar level.

However, as above," while the Applicant intends on developing the proposed project described above, because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes. The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

The incremental development that would occur under the RWCDs for Scenario 1 is shown in Table C-4a. As compared to 2020 No-Action conditions on the development site, the 2020 With-Action condition under Scenario 1 would represent incremental increases of 59,936 gsf of residential uses (70 DUs) and approximately 24,454 gsf of local retail space. There would be an incremental decrease of -2 of accessory parking spaces and no change in community facility gsf between the No-Action and With-Action conditions.

Table C-4a: Incremental Project Area Development (Scenario 1)

Use	No-Action	With-Action	Net Increment
Residential	65,524 gsf (77 DUs)	125,460 gsf (147 DUs)	+59,936 (+70 DUs)
Commercial – Local Retail	51,921 gsf	76,375 gsf	+ 24,454 gsf
Community Facility	1,996 gsf	1,996 gsf	None
Accessory Parking	130 spaces	128 spaces	-2

As compared to 2020 No-Action conditions on the development, Scenario 2 would represent an incremental increase of 98,397 gsf of commercial hotel use (182 DUs). The 2020 With-Action condition under Scenario 2 would result in a decrease of 65,524 gsf residential uses (77 DUs), 51,921 gsf of commercial local retail uses, and 1,996 gsf of community facility uses. No change in parking is expected to occur between the No-Action and With-Action conditions under Scenario 2.

Table C-4b: Incremental Project Area Development (Scenario 2)

Use	No-Action	With-Action	Net Increment
Residential	65,524 gsf (77 DUs)	-	-65,524 gsf (-77 DUs)
Commercial – Local Retail	51,921 gsf	-	-51,921 gsf
Commercial – Hotel	-	98,397 gsf (182 rooms)	+98,397 gsf (182 rooms)
Community Facility	1,996 gsf	-	-1,996 gsf
Accessory Parking	130 spaces	130 spaces	None

Assessment

The Proposed Actions would allow the development of new residential and commercial space on the development site, which is located in a primarily residential, commercial, and community facility neighborhood. Overall, the Applicant believes that the Proposed Actions would be consistent with and would advance the ongoing mixed-use land use trends and address demand for housing at varying income levels and retail space in this area of the City.

As such, the Proposed Actions would result in development that, in addition to being appropriate for the development site, would complement and improve the existing land use character of the secondary study area as a whole. Overall, the Proposed Actions would not adversely affect existing land use patterns and trends. The changes associated with the Proposed Actions would be considered beneficial, including redeveloping underutilized land, and providing much needed affordable residential opportunities in this community. As such, the Proposed Actions would not result in significant adverse impacts to land use on the development site or within the approximate 400-foot secondary study area.

In the instance that the mixed-use development described above is not developed at this site, the Proposed Actions have the potential to result in hotel development. The potential commercial hotel development use would also enhance the project area and surrounding area by creating a vibrant use and activating a long underutilized site.

Zoning

In the future with the Proposed Actions, the existing zoning in the primary study area (rezoning area) would change. The proposed zoning changes as a result of the Proposed Actions are shown in Figure C-2, described in detail below, and summarized in Table C-5.

TABLE C-5: Comparison of Existing and Proposed Zoning

	Existing Zoning	Proposed Zoning
Zoning District	R6 / C1-3	C4-5X (R7X Equivalent)
Use Groups	UG 1-6 ¹	UG 1-6, 8-10, and 12
Maximum FAR		
Residential	0.78-2.43 (under Height Factor regulations) Quality Housing Program – 3.0 (on wide streets outside the Manhattan Core) & 2.2 (on narrow streets)	6.0 ²
Community Facility	4.8	5.0
Commercial	2.0	4.0
Manufacturing	0.0	0.0
Max. Building Height	HF - no height limits (building envelopes regulated by sky exposure plane). Quality Housing – max. bldg. height 55’ on narrow streets, 70’ on wide streets (75’ with QGF)	Commercial – sky exposure plane Residential – Max. bldg. height of 120’ (125’ with QGF); up to 140’ (145’ with QGF) for MIH developments

Source: Zoning Resolution of the City of New York. Information shown is for areas outside the Manhattan Core.

Notes:

¹ With some limitations

² When utilizing MIH Program.

HF = Height Factor; QGF = Qualifying Ground Floor

Proposed Zoning Map Changes

Assessment

As shown in Figure C-2, the Proposed Actions would result in a zoning map amendment to the primary study area. The existing R6/C1-3 zoning designation in the rezoning area would be replaced with a C4-5X zoning district, which would allow residential, commercial, and community facility development. While the resulting difference in height and total floor area from the existing zoning district is not substantial overall, the proposed C4-5X zoning district will allow a contextual, transit-oriented development with significantly more residential floor area (25 to 30 percent of which will be permanently affordable), as well as 2 stories of commercial floor area.

The proposed rezoning would also increase the maximum allowable commercial FAR from 2.0 to 4.0, while increasing the range of commercial uses that can be developed. This would allow the proposed development to include a significant commercial component, which would be consistent with the predominantly commercial character of the surrounding area, and would supplement and enhance the active commercial corridors along 82nd Street and Roosevelt Avenue. The proposed commercial uses would replace a vacant former theater and other underutilized structures on the site, thereby activating the proposed development site’s frontages, and serving both existing and future residents. Therefore, the Proposed Actions would extend the existing zoning with similar districts onto the project area.

VI. CONCLUSIONS

No significant adverse impacts on land use, zoning, or public policy, as defined by the guidelines for determining impact significance set forth in the 2014 *CEQR Technical Manual*, are anticipated in the future with the Proposed Actions in the primary or secondary study areas. The Proposed Actions would not directly displace any land uses so as to adversely affect surrounding land uses, nor would it generate land uses that would be incompatible with land uses, zoning, or public policies 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 it cause a substantial number of existing structures to become non-conforming. The Proposed Actions would also not result in land uses that conflict with public policies applicable to the primary or secondary study areas.

The Proposed Actions would result in an overall increase in residential and commercial uses within the primary study area, when compared to conditions in the future without the Proposed Actions. The proposed zoning map amendment would allow for a variety of uses at a scale and density that is compatible with the existing zoning designations in the surrounding area. The proposed rezoning would provide opportunities for residential (including affordable dwelling units) and commercial development.

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 guidelines established in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, if a project site is located in an area considered underserved by open space, an analysis of indirect effects on open space is warranted if a proposed action would add more than 50 residents or 125 employees. The development site at 40-31 82nd Street is located in an area considered to be underserved by open space.

The proposed hotel development under Scenario 2 would not exceed the CEQR threshold for an analysis of open space. The Proposed Actions under Scenario 1 are expected to result in an incremental increase of 70 dwelling units (DUs) over the 2020 No-Action condition. This would result in an increase of 181 residents¹, which exceeds the *CEQR Technical Manual* threshold for a detailed indirect open space analysis. A quantitative assessment was conducted to determine whether the Proposed Actions would significantly reduce the amount of open space available for the area’s residential population.

II. PRINCIPAL CONCLUSIONS

According to the 2014 *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 2014 *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 underserved by open space as defined in the 2014 *CEQR Technical Manual Appendix: Open Space Maps*.

As discussed in detail below, the detailed open space analysis shows that the Proposed Actions and associated RWCDs would decrease the open space ratio by 0.20 percent in the study area, which would be well below the CEQR threshold of one percent for significant adverse impacts. In addition, as noted above, the Proposed Actions would not result in any direct displacement or alteration of existing public

¹ 2.58 residents per DU based on 2011-2015 ACS Estimates Census data for Census Tracts 267, 269.01, 269.02, 271, 277, 279, 281, 283, 285, 287, 467, 469, 481, and 485.

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 guidelines established in the 2014 *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 by the build year 2020, 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 guidelines established 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. Because the Proposed Actions would not significantly increase the local worker population, a half-mile radius is the appropriate study area boundary.

Open Space Study Area

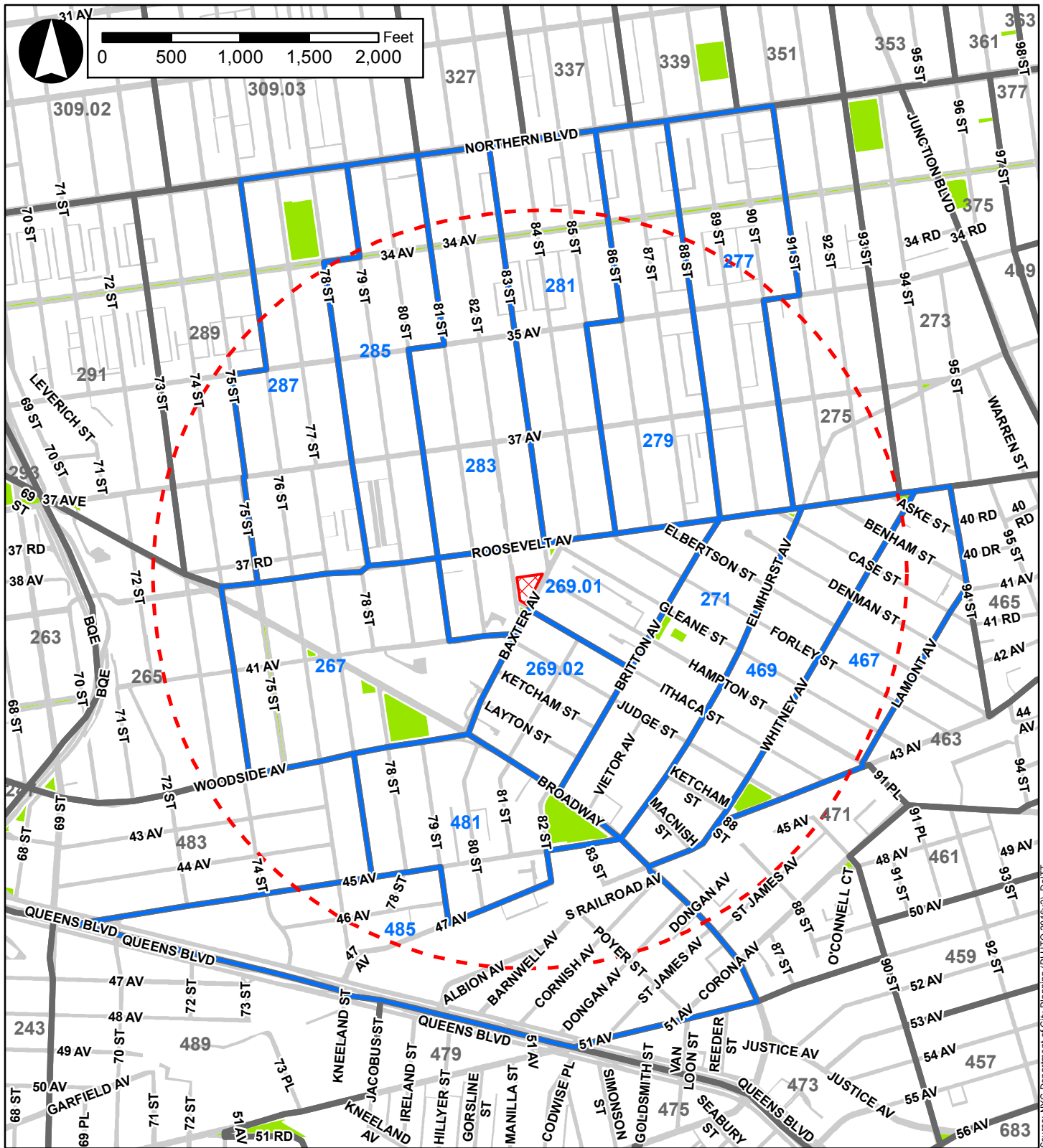
Pursuant to *CEQR Technical Manual* guidelines, the residential open space study area includes all census tracts that have at least 50 percent of their area located within a half-mile of the proposed rezoning area and all open space resources within it that are publicly accessible.

The proposed development site encompass the southern portion of Block 1493, Lot 15 in the Jackson Heights/Elmhurst neighborhood of Queens Community District (CD) 4. As shown in Figure D-1, the half-mile open space study area includes the following census tracts in their entirety: census tracts 267, 269.01, 269.02, 271, 277, 279, 281, 283, 285, 287, 467, 469, 481, and 485. The open space study area extends to Northern Boulevard to the north; to 91st and 94th Streets and Lamont Avenue to the east; to Queens Boulevard to the south; and to 75th and 74th Streets to the west.

Analysis Framework

Direct Effects Analysis

According to the *CEQR Technical Manual*, a proposed action would have a direct effect on an open space resource 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 space resources within the proposed development site, the Proposed Actions would not have any direct effects and no further analysis is warranted.



Source: NYC Department of City Planning (PLUTO 2016v2), DoITT

Legend

- Proposed Rezoning Area
- 1/2-Mile Residential Study Area
- Open Space Resources
- Half-Mile Radius
- 483 2010 Census Tracts

Indirect Effects Analysis

Indirect effects occur to an area's open space resources 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 discussed above, the proposed development site is located in an area considered underserved by open space.

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 resources beyond the study area, the availability of private recreational facilities, and the demographic characteristics of the area's population. Specifically, the analysis in this attachment includes:

- Characteristics of the existing residential users. To determine the number of residents in the study area, 2015 Census data (ACS 5-Year Estimates) have been compiled for census tracts comprising the open space study area. In addition, a 0.5 percent per year (2015-2017) background growth rate is applied to the 2015 population to account for general increases in population.
- 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. The New York Department of City Planning (NYCDCP) generally recommends a comparison to the median ratio for community districts in New York City, which is 1.5 acres of open space per 1,000 residents.
- An evaluation of qualitative factors affecting open space use.
- A final determination of the adequacy of open space in the open space study area.

IV. PRELIMINARY ASSESSMENT

Pursuant to the guidelines of the *CEQR Technical Manual*, a preliminary open space assessment was conducted. As the study area is located in an underserved area, exhibiting a low open space ratio (i.e., below the citywide community district median of 1.5 acres per 1,000 residents and the City's optimal planning goal of 2.5 acres per 1,000 residents) under existing and future conditions, a detailed open space analysis is warranted and is provided below.

V. DETAILED ANALYSIS

Existing Conditions

Demographic Characteristics of the Study Area

To determine the residential population served by existing open space resources, 2011-2015 5-Year American Community Survey (ACS) Estimates Census data were compiled for the census tracts comprising the half-mile study area and updated to 2017. With an inventory of available open space resources and the number of potential users, open space ratios were calculated and compared with existing citywide averages and planning goals set forth by NYCDCP. As mentioned above and shown in Figure D-1, the open space study area is comprised of 14 census tracts. As shown in Table D-1 below, Census data indicate that the study area had a total residential population of approximately 88,074 in 2015. Factoring in a yearly background growth factor of approximately 0.5 percent, the 2017 residential population of the study area is estimated to be approximately 88,957.

Table D-1: 2017 Existing Open Space Study Area Population

Census Tract	Residential Population
267	6,563
269.01	5,089
269.02	4,557
271	8,512
277	7,638
279	6,233
281	4,435
283	7,318
285	5,120
287	6,423
467	6,815
469	8,205
481	6,527
485	4,639
<i>Residential Total</i>	88,074
<i>Source: 2011-2015 ACS 5-Year Estimates</i>	
<i>Background Growth (0.5% year growth since 2015)</i>	883
<i>Residential Total in 2017</i>	88,957

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

sports such as Frisbee, and recreational activities in which all ages can participate. Senior citizens engage in active recreation such as tennis, gardening, and swimming, as well as recreational activities that require passive facilities.

Therefore the residential population of the study area was also broken down by age group. As shown in Tables D-2a and D-2b, people between the ages of 20 and 64 make up the majority (approximately 67.1 percent) of the residential population. Children and teenagers (0 to 19 years old) account for approximately 19.7 percent of the entire residential population, and persons 65 years and over account for approximately 13.2 percent of the study area population. Compared to Queens as a whole, the study area residential population includes comparable percentages of children/teenagers and a larger adult (20-64 years) population; the study area's elderly population is also comparable to that of Queens as a whole.

Table D-2a: Open Space Study Area Age Groups

Age Category	Persons	Percent of Total Population
Under 5	5,431	6.2%
5-19	11,955	13.6%
20-64	59,091	67.1%
65 and older	11,598	13.2%

Table D-2b: Queens Age Groups

Age Category	Persons	Percent of Total Population
Under 5	143,698	6.2%
5-19	377,045	16.4%
20-64	1,472,493	64.0%
65 and older	307,903	13.4%
Total	2,301,139	100%

Source: 2011-2015 5-Year ACS Estimates

Inventory of Publicly-Accessible Open Space

According to the *CEQR Technical Manual*, open space may be public or private and may be used for active or passive recreational purposes. Pursuant to the *CEQR Technical Manual*, 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 guidelines, whereas private open space is not accessible to the general public on a regular basis, and is therefore only considered qualitatively. Field surveys and secondary sources were used to determine the number, availability, and condition of publicly accessible open space resources within the study area.

An open space resource is determined to be active or passive by the uses which 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, lawns, and paved areas for active recreation. Passive open space is used for sitting, strolling, and relaxation, and typically contains benches, walkways, and picnicking areas. However, some passive spaces can be used for both passive and active recreation; such as a green lawn or riverfront walkway, which can also be used for ball playing, jogging, or rollerblading.

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 in July 2017; from the New York City

Department of Parks and Recreation's (DPR) website; and from the New York City Oasis database and other secondary sources of information, including previous CEQR environmental reviews.

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

Likewise, judgments as to the intensity of use of the resources were qualitative, based on an observed degree of activity or utilization on a weekday from 11 AM until 3 PM, which is considered the weekday peak utilization period according to the *CEQR Technical Manual*. If a resource seemed to be at or near capacity (i.e. the majority of benches or equipment was in use), then utilization was considered high. If the facility or equipment was in use but could accommodate additional users, utilization was considered moderate. If a playground or sitting area had few people, usage was considered light. Table D-3, "Inventory of Existing Open Space and Recreational Resources in Study Area," identifies the address, ownership, features, and acreage of active and passive open space resources in the study area, as well as their condition and utilization. Figure D-2 maps their location within the study area.

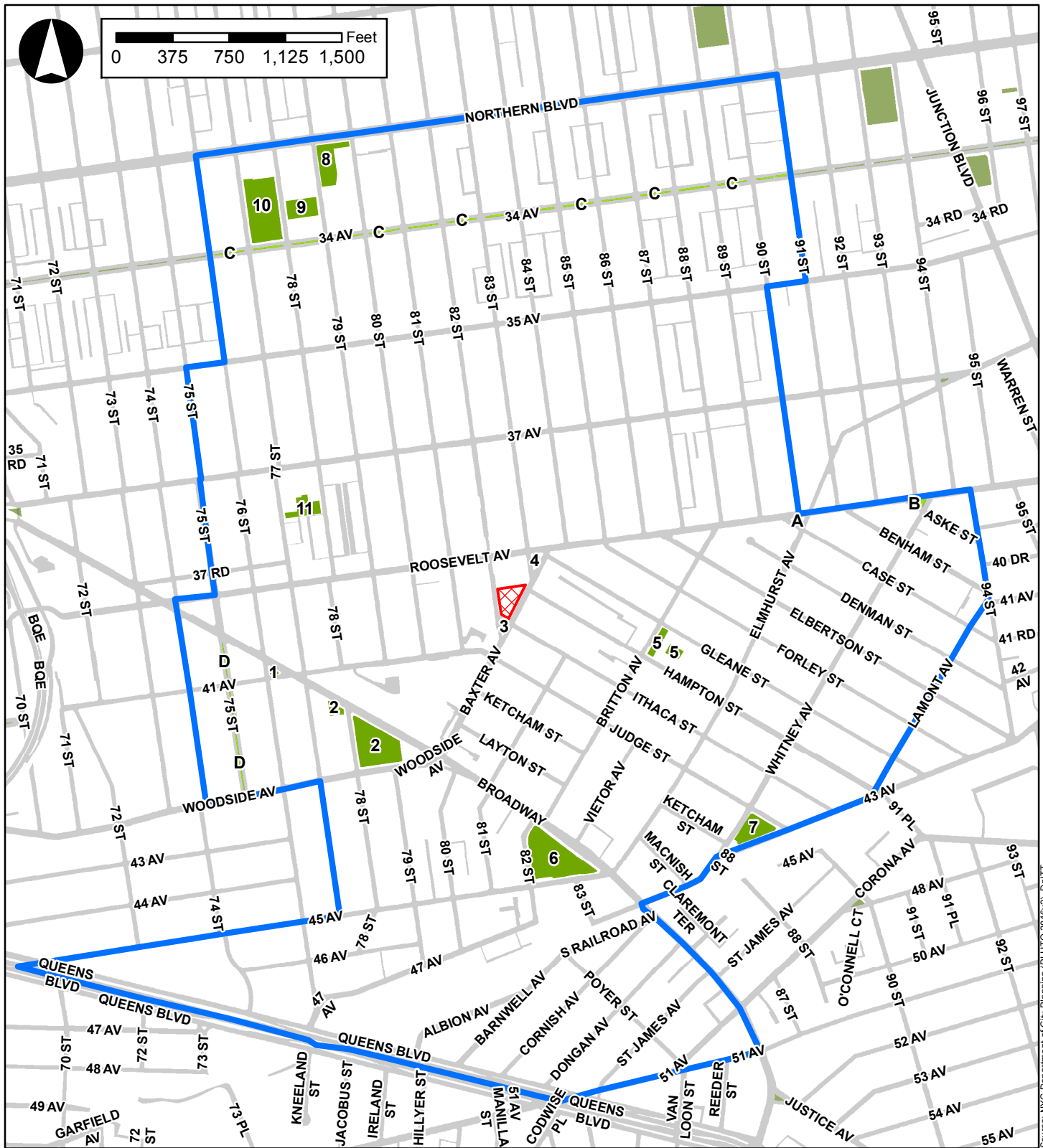
Open Space Resources

As shown in Figure D-2, 11 publicly-accessible open space and recreational resources within the half-mile study area are included in the quantitative analysis. In addition, there are four resources located within the study area that are not included in the quantitative analysis due to the fact that they do not include seating or other amenities.

The study area contains a total of approximately 8.26 acres of publicly accessible open space, with substantially more active open space (approximately 6.82 acres, or 83 percent of total) than passive open space (approximately 1.44 acres, or 17 percent of total). The largest open space resource in the study area is the 1.98-acre Moore Homestead Playground (Map No. 6), located in the southern portion of the study area and bordered by 82nd Street, 45th Avenue, and Broadway. This open space resource, operated by the DPR, features play and fitness equipment, basketball and handball courts, and spray showers for active recreation, as well as benches for passive recreation.





Other significant open space resources located in the study area include the 1.92-acre Travers Park (Map No. 10), which is located near the northern border of the study area, and the 1.54-acre Frank D. O'Connor Playground (Map No. 2), which is located near the western border of the study area. Travers Park, which is operated by DPR, includes basketball, handball, and tennis courts, fitness equipment, playgrounds, spray showers, and benches. The DPR-operated Frank D. O'Connor Playground also features a variety of active open space amenities, including basketball and handball courts, fitness equipment, playgrounds, and spray showers, as well as benches and landscaped areas for passive recreation.

The remaining study area open spaces are all under one acre in size. Dunningham Triangle (Map No. 3) is a 0.03-acre public plaza directly south of the proposed rezoning area. This open space resource is bounded by 82nd Street, Ithaca Street, and Baxter Avenue, and features trees, plantings, and a stage. Several open spaces in the study area are adjacent to public schools and are jointly operated by the DPR and DOE, including P.S. 69Q Playground (Map No. 11), P.S. 89Q Community Playground (Map No. 5), and I.S. 145Q Playground (Map No. 8).



Source: NYC Department of City Planning (PLUTO 2016v2), DoIT

Legend

	Proposed Rezoning Area		1 Open Space Resources Included in Quantitative Analysis (Refer to Table D-3)
	1/2-Mile Residential Study Area		A Open Space Resources Not Included in Quantitative Analysis (Refer to Table D-3)

As noted above, there are four additional open space resources that are conservatively not included in the quantitative analysis because they do not include seating or other amenities. These four resources consist of street triangles and Greenstreets, and together, comprise approximately 0.73 acres of open space.

Assessment of Existing Open Space Adequacy

The following analysis of the adequacy of existing open space resources within the study area takes into consideration the ratios of active, passive, and total open space resources per 1,000 residents. As 1.5 acres of total open space per 1,000 residents is the median Community District ratio in New York City, it generally represents adequate open space conditions and is used as the CEQR standard for this project. As an optimal planning goal, the City tries to achieve an overall residential open space ratio of 2.5 acres per 1,000 residents (80 percent [2 acres] active and 20 percent [0.5 acres] passive) for large-scale plans and proposals. Although a typical population mix may call for such a goal, it is often not feasible for many areas of the City (especially higher density areas). Therefore, the City does not consider these ratios as open space policy for every neighborhood. Rather, the ratios serve as benchmarks that represent how well an area is served by open space.

In calculating the open space ratio per 1,000 residents for the study area, all of the resources listed in the “Total Open Space in Quantitative Analysis” section of Table D-3 were included; Resources A, B, C, and D were not included in the calculations pursuant to the *CEQR Technical Manual*, for the reasons described above. Table D-4 below shows that, with an existing 2017 study area residential population of approximately 88,957 people, the existing total open space ratio in the study area is approximately 0.093 acres of open space per 1,000 residents. The study area has 0.077 acres of active open space per 1,000 residents and 0.016 acres of passive open space per 1,000 residents. As indicated in Table D-4, the existing total, active, and passive residential open space ratios are below both the City’s open space planning goals of 2.5 acres per 1,000 residents and the City’s median Community District open space ratio of 1.5 acres per 1,000 residents.

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

Map No. ¹	Name	Address	Owner/ Agency	Amenities	User Groups	Hours of Access	Total Acres	Passive		Active		Condition & Utilization
								%	Acres	%	Acres	
1	Nine Heroes Plaza/Vietnam Veterans Triangle	76 th St., 41 st Ave., Broadway	DPR	Landscaping, Monument, Benches	Adults, Senior Citizens	24 Hours	0.02	100%	0.02	0%	0.00	Good condition/ Medium utilization
2	Frank D. O'Connor Playground	Broadway & Woodside Ave. bet. 77 th & 79 th Sts.	DPR	Playgrounds, Fitness equipment, Basketball & handball courts, Comfort station, Spray showers, Benches	Children, Teenagers, Adults, Senior Citizens	Dawn to 9PM	1.54	20%	0.31	80%	1.23	Good condition/ High utilization
3	Dunningham Triangle	82 nd St., Ithaca St., Baxter Ave.,	DPR	Paved plaza, Stage, Landscaping	Adults, Senior Citizens	Dawn to 9PM	0.03	100%	0.03	0%	0.00	Good condition/ Low utilization
4	Manuel De Dios Unanue Triangle	Roosevelt Ave., 83 rd St., Baxter Ave.	DPR	Plaza, Landscaping	Adults, Senior Citizens	24 Hours	0.04	100%	0.04	0%	0.00	Good condition/ Moderate utilization
5	P.S. 89Q Community Playground	85-28 Britton Ave.	DOE	Playgrounds, Benches	Children, Teenagers	8AM to dusk, when school is not in session	0.30	20%	0.06	80%	0.24	Good condition/ High utilization
6	Moore Homestead Playground	Broadway., 82 nd St., 45 th Ave.	DPR	Playgrounds, Fitness equipment, Basketball and handball courts, Comfort station, Spray showers, Benches	Children, Teenagers, Adults, Senior Citizens	Dawn to 9PM	1.98	10%	0.20	90%	1.78	Good condition/ High utilization
7	Veterans Grove	Whitney & 43 rd Aves. bet. Judge & Ketcham Sts.	DPR	Playgrounds, Spray showers, Dog run, Benches	Children, Teenagers, Adults, Senior Citizens	Dawn to 9PM	0.63	20%	0.13	80%	0.50	Excellent condition/ High utilization
8	I.S. 145Q Playground	Northern Blvd. bet. 79 th & 80 th Sts.	DOE	Play equipment, Track field, Basketball and handball courts, Asphalt play areas, Game tables, Benches	Children, Teenagers	8AM to dusk, when school not in session	0.78	10%	0.08	90%	0.70	
9	Rory Staunton Field	78 th & 79 th Sts. bet. Northern Blvd. & 34 th Ave.	DPR	Kickball court, Asphalt play areas	Teenagers, Adults	Dawn to 9PM	0.57	10%	0.06	90%	0.51	

10	Travers Park	34 th Ave. bet. 77 th & 78 th Sts.	DPR	Playgrounds, Fitness equipment, Basketball, Handball, and Tennis courts, Spray showers, Benches	Children, Teenagers, Adults, Senior Citizens	Dawn to 9PM	1.92	25%	0.48	75%	1.44	
11	P.S. 69Q Playground	77-02 37 th Ave. bet. 77 th & 78 th Sts.	DOE	Playgrounds, Track field, Asphalt play areas, Benches	Children, Teenagers	8AM to dusk, when school not in session	0.45	10%	0.05	90%	0.41	
Total Open Space in Quantitative Analysis:							8.26	17%	1.44	83%	6.82	
Map No. ¹	Name	Address	Owner/ Agency	Amenities	User Groups	Hours of Access	Total Acres	Passive		Active		Condition & Utilization
								%	Acres	%	Acres	
A	Triangle Ninety XC	Case St., Elmhurst & Roosevelt Aves.	DPR	Concrete plaza	Teenagers, Adults, Senior Citizens	24 Hours	0.01	100%	0.01	0%	0.00	-
B	Answer Triangle	Aske & 94 th Sts., Roosevelt Ave.	DPR	Trees, Landscaping	-	-	0.07	100%	0.07	0%	0.00	-
C	Mall Thirty Four XXXIV	34 th Ave. bet. 76 th & 91 st Sts.	DOT	Trees, Landscaping	-	-	0.53	100%	0.53	0%	0.00	-
D	Elmjack Mall	75 th St. bet. Broadway & Woodside Ave.	DOT	Trees, Landscaping	-	-	0.12	100%	0.12	0%	0.00	-
Total Open Space not included in Quantitative Analysis:							0.73	100%	0.73	0%	0.00	

Sources: DoITT, DCP Queens Community District 4 Profile, NYCDPR website, 2016 PLUTO data, PHA Site Visits July 2017

(1) Refer to Figure D-2

Table D-4: Analysis of Adequacy of Open Space Resources in the Study Area under 2017 Existing Conditions

Study Area	2017 Existing Conditions
Residential Population	88,957
Active Open Space Acreage	6.82
Passive Open Space Acreage	1.44
Total Open Space Acreage	8.26
Open Space Ratios	
Active	0.077
Passive	0.016
Total	0.093

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

Project Site Population

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to art related exhibition space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

The No-Action development would result in 199 new residents and 164 new employees.

Study Area Population

While there are no known and anticipated residential developments in the open space study area, the study area residential population is expected to increase due to general background growth. Specifically, based on a background growth factor of approximately 0.5 percent, the 2020 open space study area residential population is expected to increase to 90,497.

Open Space Resources

While there are no planned changes to open space resources that would increase or decrease the overall study area acreage, DPR is currently in the process of improving several open space resources in the study area. In Moore Homestead Playground (Map No. 6), DPR plans to reconstruct playgrounds, a spray shower, and pavement; the reconstruction project is in the procurement phase, which is anticipated to be complete by March 2018. In Rory Staunton Field and Travers Park (Map Nos. 9 and 10), DPR plans to reconstruct a tot lot and several asphalt play fields, as well as construct a plaza within the 78th Street right-of-way to connect these two open space resources; the reconstruction project is in the procurement

phase, which is anticipated to be complete by August 2018. The planned improvements will improve the condition and usability of these existing open space resources within the study area.

Assessment of Open Space Adequacy

Table D-5, below, presents the No-Action open space ratios for the half-mile study area, based on the anticipated population increase outlined above. As indicated in the table, in the No-Action condition, as under existing conditions, the total, passive, and active open space ratios would be less than the City's open space planning goals of 2.5 acres of open space per 1,000 residents (including 0.5 acres of passive open space and two acres of active open space), as well as the City's median Community District open space ratio of 1.5 acres per 1,000 residents. Specifically, the total open space ratio is expected to decrease to 0.091 acres per 1,000 residents in the No-Action condition, with No-Action passive and active open space ratios of 0.016 and 0.075 acres per 1,000 residents, respectively.

Table D-5: Analysis of Adequacy of Open Space Resources in the Study Area under 2020 No-Action Conditions

Study Area Residential Population		Open Space Acreage			Open Space Ratio per 1,000 people		
		Total	Active	Passive	Total	Active	Passive
Existing	88,957	8.26	6.82	1.44	0.093	0.077	0.016
No-Action	90,497	8.26	6.82	1.44	0.091	0.075	0.016

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

This section describes the open space conditions that would result from the Proposed Actions by 2020. It evaluates the potential for the Proposed Actions to result in significant adverse impacts to open space resources directly and indirectly based on a comparison of the No-Action condition (described above) to the With-Action condition.

Project Site Population

As described in Attachment A, "Project Description," in the future with the Proposed Actions, it is estimated that a total net increment of 70 DUs would be introduced on the project site, which are expected to introduce a net 181 residents. Based on this incremental residential population growth, the study area's population would increase to a total of 90,678 residents in the 2020 With-Action condition.

Direct Effects Analysis

The Proposed Actions would not have a direct effect on any study area open space resources. Construction and operation of the proposed project would not cause the physical loss of public open space because of encroachment or displacement of the space; would not change the use of an open space so that it no longer serves the same user population; and would not limit public access to an open space resource.

Indirect Effects Analysis

As discussed above, the study area population would be approximately 90,678 in the 2020 With-Action condition, an increase of 0.19 percent from the No-Action condition. As a result, the total open space ratio

in the future with the Proposed Actions would be 0.091 acres per 1,000 residents, which would not change from the No-Action ratio (see Table D-6). The active open space ratio in the future with the Proposed Actions would be 0.075 acres per 1,000 residents, and the passive open space ratio would be 0.016 acres per 1,000 residents. This would result in a 0.20 percent decrease in the active open and passive space ratios when compared to the No-Action condition (See Table D-6). In the future with the Proposed Actions, the open space ratio would remain below the recommended planning goal of 2.5 acres of open space per 1,000 residents and the city-wide Community District median of 1.5 acres of open space per resident.

Table D-6: Adequacy of Open Space Resource in the Study Area – No-Action vs. With-Action Conditions

Study Area Residential Population		Open Space Acreage			Open Space Ratio per 1,000 people		
		Total	Active	Passive	Total	Active	Passive
Existing	88,957	8.26	6.82	1.44	0.093	0.077	0.016
No-Action	90,497	8.26	6.82	1.44	0.091	0.075	0.016
With-Action	90,678	8.26	6.82	1.44	0.091	0.075	0.016
% Change No-Action to With-Action	+0.19%	0%	0%	0%	-0.20%	-0.20%	-0.20%
DCP OPEN SPACE GUIDELINE					2.5	2.0	0.5

Impact Assessment

Impact determinations are based in part on how a proposed project would change the open space ratios in the study area. According to the *CEQR Technical Manual*, if a proposed project would result in a decrease in open space ratios compared with those in the future without the proposed project, the decrease is generally considered to be a substantial change if it would approach or exceed five percent. Or, if a study area exhibits a low open space ratio (e.g., below 1.5 acres per 1,000 residents), indicating a shortfall of open space, a decrease of one percent in that ratio as a result of the proposed project may constitute significant adverse impacts.

While the Proposed Actions would result in an incremental decrease (0.20 percent) in open space ratios in the future, the level of decrease anticipated would be well below the significant impact threshold (one percent). Furthermore, although the existing open space ratios in the study area would remain less than the DCP planning goals and the citywide Community District median both without and with the Proposed Actions, the deficiency of open space resources within the study area would be ameliorated by several factors. Overall, a majority of the open space resources in the study area were found to be in good or excellent condition. In addition, the study area contains an excellent mix of recreational facilities to serve the study area's significant youth population, with 83 percent dedicated to active uses and 17 percent dedicated to passive uses. As noted above, nearly 20 percent of the study area's residents are below the age of 20, indicating a need for playgrounds, court game facilities, little league fields, and ball fields. The study area includes 6.82 acres of active open space facilities.

As such, demand for open space generated by the Proposed Actions would not significantly exacerbate the No-Action deficiency, and the population added as a result of the Proposed Actions is not expected to noticeably affect utilization of the area's open spaces.

I. INTRODUCTION

According to the 2014 *CEQR Technical Manual*, an adverse shadows impact occurs when an incremental shadow from a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource, or threatens the viability of vegetation or other natural resources. Pursuant to CEQR guidelines, sunlight-sensitive resources of concern are those resources that depend on sunlight, or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity. Sunlight-sensitive resources can include publicly accessible open spaces, architectural resources, natural resources, and Greenstreets. In general, shadows on city streets, sidewalks, buildings, or project-generated open spaces are not considered significant under CEQR. In addition, shadows occurring within an hour and a half of sunrise or sunset generally are not considered significant under CEQR.

According to 2014 *CEQR Technical Manual* guidelines, a shadows assessment is required only if a proposed project would result in structures (or additions to existing structures) of 50 feet or more and/or be located adjacent to, or across the street from, a sunlight-sensitive resource. As discussed in Attachment A, "Project Description," the reasonable worst case development scenario (RWCDs) for the Proposed Actions would result in a new building greater than 50 feet in height over the No-Action condition. As such, a detailed shadows analysis was prepared to determine the potential for the Proposed Actions to result in significant adverse impacts on sunlight-sensitive resources.

II. PRINCIPAL CONCLUSIONS

The Proposed Actions would result in limited incremental shadows on one sunlight-sensitive resource: Manuel De Dios Unanue Triangle. As detailed below, project-generated shadows would be limited in duration and coverage on the resource, and would not affect the utilization or enjoyment of this open space. Additionally, vegetation would continue to receive adequate direct sunlight throughout the growing season. As such, the Proposed Actions would not result in significant adverse shadows impacts.

III. METHODOLOGY

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. For projects resulting in structures less than 50 feet tall, a shadow assessment is generally not necessary, unless the site is adjacent to a park, sunlight-sensitive historic resource, or important natural feature.

First, a preliminary screening assessment must be conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year. The 2014 *CEQR Technical Manual* defines sunlight-sensitive resources as those resources that depend on sunlight or for which direct

sunlight is necessary to maintain the resource's usability or architectural integrity. The following are considered to be sunlight-sensitive resources:

- *Public open space* (e.g., parks, playgrounds, plazas, schoolyards, greenways, and landscaped medians with seating). Planted areas within unused portions or roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources. The use of vegetation in an open space establishes its sensitivity to shadows. This sensitivity is assessed for both (1) warm-weather dependent features, like wading pools and sandboxes, or vegetation that could be affected by loss of sunlight during the growing season (i.e., March through October); and (2) features, such as benches, that could be affected by a loss of winter sunlight. Uses that rely on sunlight include: passive use, such as sitting or sunning; active use, such as playfields or paved courts; and such activities as gardening, or children's wading pools and sprinklers. Where lawns are actively used, the turf requires extensive sunlight. Vegetation requiring direct sunlight includes the tree canopy, flowering plants, and plots in community gardens. Generally, four to six hours a day of sunlight, particularly in the growing season, is a minimum requirement.
- *Features of historic architectural resources that depend on sunlight for their enjoyment by the public.* Only the sunlight-sensitive features are considered, as opposed to the entire architectural resource. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depends on the contrast between light and dark (e.g., deep recesses or voids, such as open galleries, arcades, recessed balconies, deep window reveals, and prominent rustication); elaborate, highly carved ornamentation; stained glass windows; exterior building materials and color that depend on direct sunlight for visual character (e.g., the polychromy [multicolored] features found on Victorian Gothic Revival or Art Deco facades); historic landscapes, such as scenic landmarks, including vegetation recognized as an historic feature of the landscape; and structural features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as a historic landmark.
- *Natural resources where the introduction of shadows could alter the resource's condition or microclimate.* Such resources could include surface waterbodies, wetlands, or designated resources, such as coastal fish and wildlife habitats.

The preliminary screening assessment consists of three tiers of analysis. The first tier determines a simple radius around the project site representing the longest shadow that could be cast by a proposed project. If there are sunlight-sensitive resources within the radius, the analysis proceeds to the second tier, which reduces the area that could be affected by project-generated shadows by accounting for a specific range of angles that can never receive shade in New York City due to the path of the sun in the northern hemisphere. If the second tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by new shadows by looking at specific representative days of the year and determining the maximum extent of shadow over the course of each representative day.

If the third tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow resulting from the project. In accordance with the 2014 *CEQR Technical Manual*, shadows on sunlight-sensitive resources of concern were modeled for four representative days of the year. For the New York City area, the months of interest for an open space resource encompass the growing season (i.e., March through October) and one month between November and February representing a cold-

weather month (usually December). Representative days for the growing season are generally the March 21 vernal equinox (or the September 21 autumnal equinox, which is approximately the same), the June 21 summer solstice, and a spring or summer day halfway between the summer solstice and equinoxes, such as May 6 or August 6 (which are approximately the same). For the cold-weather months, the December 21 winter solstice is included to demonstrate conditions when open space users rely most heavily on available sunlight warmth. As these months and days are representative of the full range of possible shadows, they are also used for assessing shadows on sunlight-sensitive historic and natural resources. The 2014 *CEQR Technical Manual* defines the temporal limits of a shadow analysis period to fall from 1.5 hours after sunrise to 1.5 hours before sunset.

The detailed analysis provides the data needed to assess the shadow impacts. The effects of the new shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The result of the analysis and assessment are documented with graphics, a table of incremental shadow durations, and narrative text. As described in the 2014 *CEQR Technical Manual*, an incremental shadow is generally not considered significant when its duration is no longer than 10 minutes at any time of year and the resource continues to receive substantial direct sunlight. A significant shadow impact generally occurs when an incremental shadow of 10 minutes or longer falls on a sunlight-sensitive resource and results in one of the following:

- *Vegetation*: a substantial reduction in sunlight available to sunlight-sensitive features of the resource to less than the minimum time necessary for its survival (when there would be sufficient sunlight in the future without the proposed project) or a reduction in direct sunlight exposure where the sensitive feature of the resource is already subject to substandard sunlight (i.e., less than the minimum time necessary for its survival).
- *Historic and cultural resources*: a substantial reduction in sunlight available for the enjoyment or appreciation of the sunlight-sensitive features of an historic or cultural resource.
- *Open space utilization*: a substantial reduction in the usability of open space as a result of increased shadow, including information regarding anticipated new users and the open space's utilization rates throughout the affected time periods.
- *For any sunlight-sensitive feature of a resource*: complete elimination of all direct sunlight on the sunlight-sensitive feature of the resource, when the complete elimination results in substantial effects on the survival, enjoyment, or, in the case of open space or natural resources, the use of the resource.

In general, a significant adverse shadows impact occurs when the incremental shadows added by a proposed project fall on a sunlight-sensitive resource and substantially reduce or completely eliminate direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other natural resources.

III. PRELIMINARY SCREENING

Tier 1 Screening Assessment

According to the 2014 *CEQR Technical Manual*, the longest shadow that a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. The maximum height of the proposed new structure on the project site (approximately 145-foot tall) was used to determine the longest shadow study area (Tier 1 Assessment). Within this longest shadow study area (an approximate 624-foot radius surrounding the proposed new structure) there are a number of open space sunlight-sensitive resources (refer to Figure E-1). As such, further screening was warranted in order to determine whether any of these sunlight-sensitive resources could be affected by project-generated shadows.

There is one historic resources within the shadow study area radius: the Jackson Heights Historic District. The Jackson Heights Historic District is located to the north of Roosevelt Avenue, approximately one block north of the proposed development site. The historic district, was designated by the New York Landmarks Preservation Commission (LPC) in 1993, and listed in the State and National Registers (S/NR) in 1999 (the S/NR-listed historic district encompasses a larger area than the LPC-designated historic district). The Jackson Heights historic district comprises the most cohesive part of an innovative residential development which was mostly built between the early 1910s and the early 1950s. This development reflects important changes in urban design and planning that took place in the first three decades of the twentieth century. Conceived, planned, built in part, and managed under the direction of a single real estate firm, the Queensboro Corporation, Jackson Heights was one of the earliest neighborhoods in New York to introduce two new building types, "garden apartments" and "garden homes." Commercial, institutional, recreational and transportation facilities were integrated with the residential buildings to create an alternative for middle-class residents to the then typical urban neighborhood.

While this historic resources is located within the shadow study area radius, it does not contain any sunlight sensitive features such as stained-glass, and therefore, would not be considered a sunlight-sensitive resource and further assessment is not warranted.

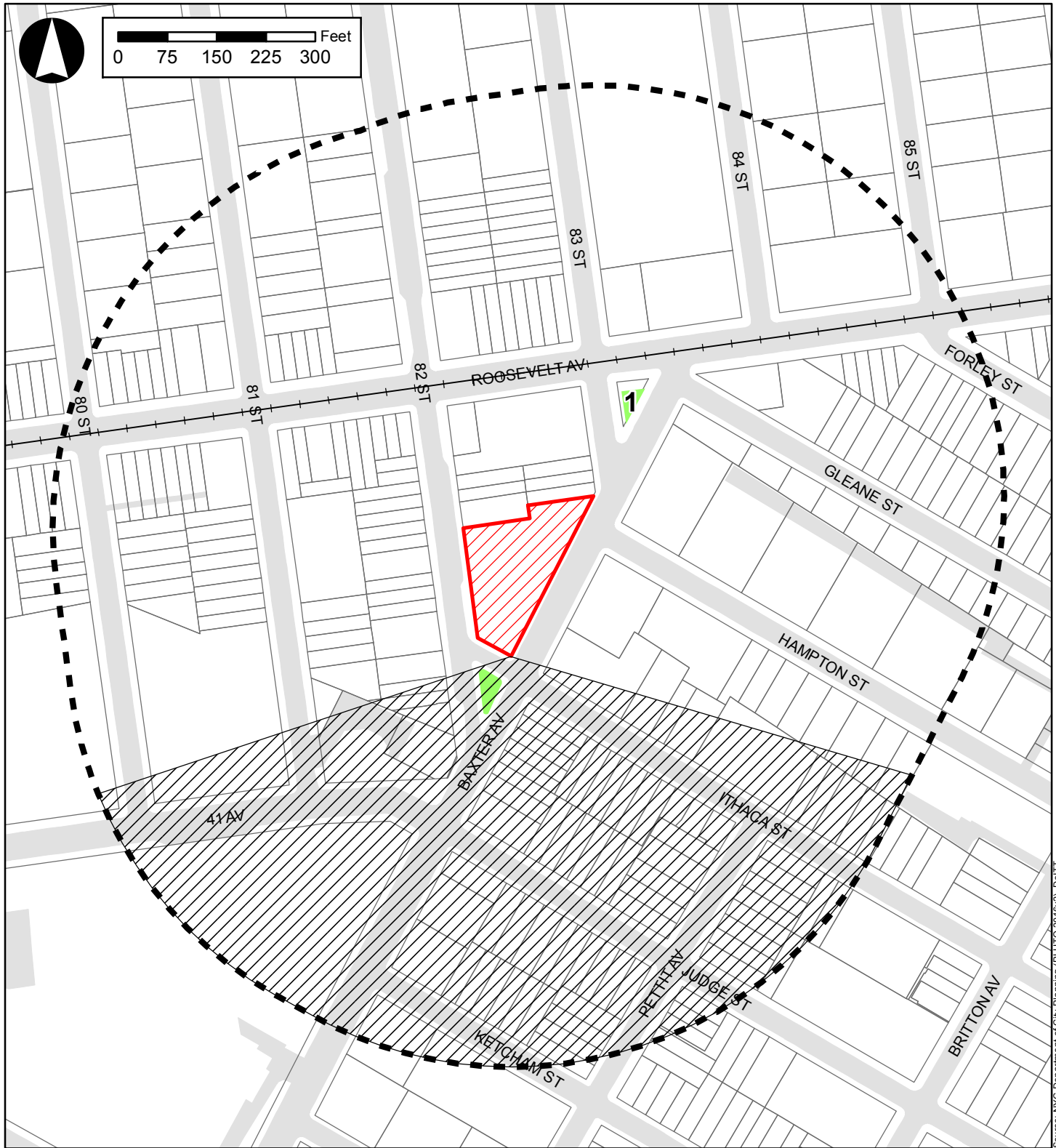
Tier 2 Screening Assessment

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 potentially sunlight-sensitive resources identified in the Tier 1 screening are located within portions of the longest shadows study area that cannot receive shade from the proposed new structure.

Figure E-1 provides a base map illustrating the results of the Tier 2 screening assessment (i.e., the portion of the longest shadow study area lying within -108 degrees from the true north and +108 degrees from true north as measured from southernmost portion of the project site). A total of one open space resource were identified as sunlight-sensitive resources that warranted further assessment: Manuel De Dios Unanue Triangle (see Figure E-1).





Tier 3 Screening Assessment

According to the 2014 *CEQR Technical Manual*, a Tier 3 screening assessment should be performed to determine if, in the absence of intervening buildings, shadows resulting from a proposed project can reach



Source: NYC Department of City Planning (PLUTO 2016v2), DoITT

Legend

-  Proposed Development Site
-  Tier II: Area That Cannot Be Shaded
-  Tier I: Longest Shadow Study
-  Open Space (Refer to Table E-1)

a sunlight-sensitive resource, thereby warranting a detailed shadows analysis. The Tier 3 screening assessment is used to determine if shadows resulting from a proposed project can reach a sunlight-sensitive resource at any time between 1.5 hours after sunrise and 1.5 hours before sunset on representative analysis dates.

As project-generated shadows could reach nearby sunlight-sensitive resources, a Tier 3 assessment was performed using three dimensional (3D) computer mapping software. The 3D model was used to calculate and display project-generated shadows on individual representative analysis dates. The model contained 3D representations of the elements in the base map used in the preceding assessments and a 3D model of the proposed project. At this stage of the assessment, surrounding buildings and structures within the study area were not included in the model so that it may be determined whether project-generated shadows would reach any sunlight-sensitive resources.

Figure E-2 illustrates the range of project-generated shadows that could occur in the absence of existing buildings on the four representative analysis days. The Tier 3 analysis shows that, in the absence of intervening buildings, Manuel De Dios Unanue Triangle could potentially receive project-generated shadows. Therefore, a detailed shadow analysis is required to determine the extent and duration of project-generated incremental shadows on this sunlight-sensitive resources.

IV. DETAILED ANALYSIS OF SHADOWS IMPACTS

Resources of Concern

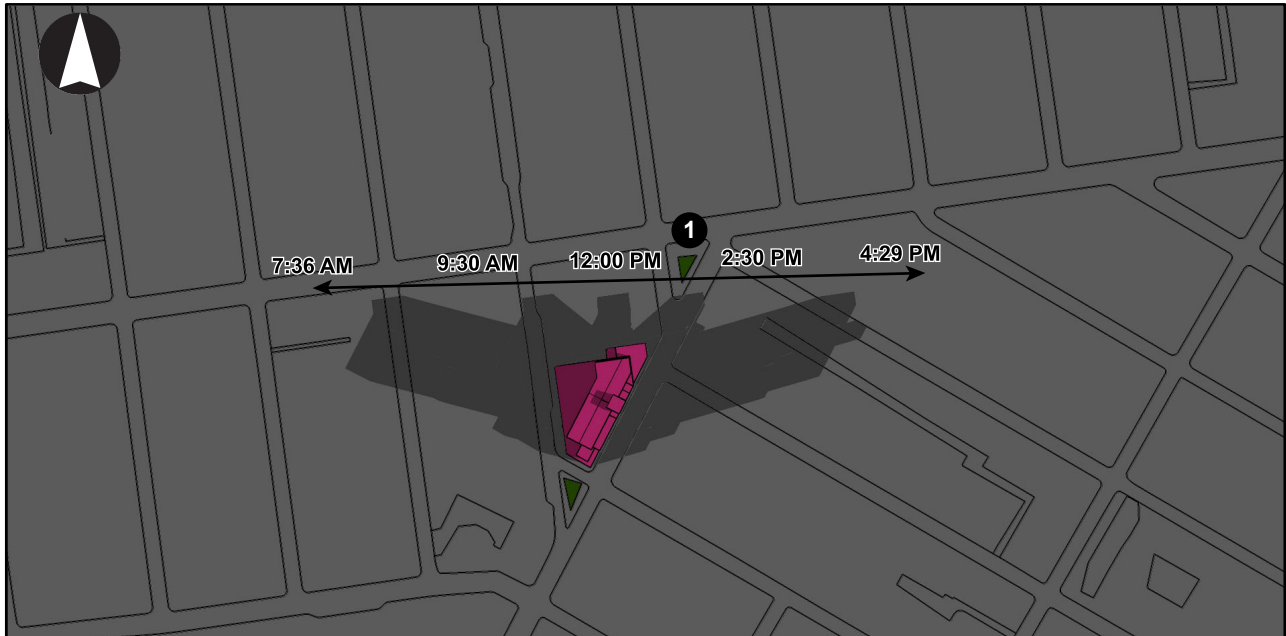
Manuel De Dios Unanue Triangle

Manuel De Dios Unanue Triangle is located along Roosevelt Avenue, Baxter Avenue, and 83rd Street. Manuel De Dios Unanue Triangle is owned by the New York City Department of Parks and contains a planting bed, trees, and pavement. No seating is provided within this triangle.

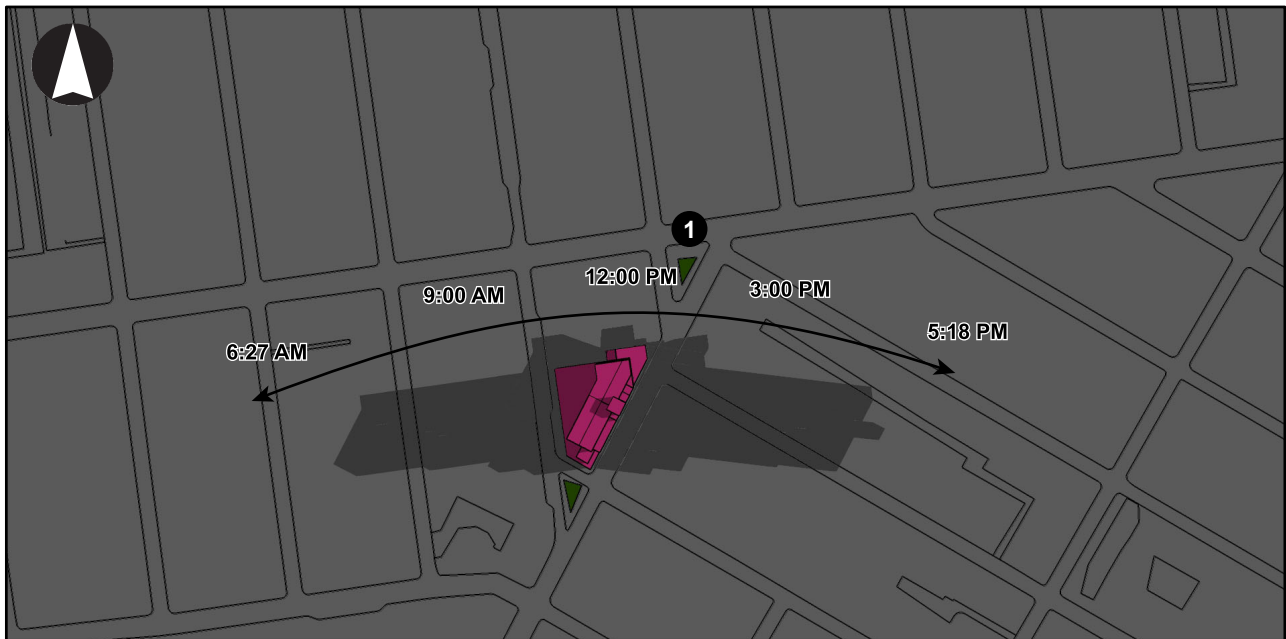
Shadows Analysis

Per CEQR guidelines, shadows analyses were performed for the four sunlight-sensitive resources identified above on four representative days of the year: March 21/September 21, the equinoxes; May 6, the midpoint between the summer solstice and the equinox (and equivalent to August 6); June 21, the summer solstice and the longest day of the year; and December 21, the winter solstice and shortest day of the year. These four representative days indicate the range of potential shadows over the course of the year. CEQR guidelines define the temporal limits of a shadow analysis period to fall from 1.5 hours after sunrise to 1.5 hours before sunset. As discussed above, the results of the detailed shadows analysis show the incremental difference in shadows between the No-Action and With-Action scenarios. Table E-2 below summarizes the entry and exit times and total duration of project-generated incremental shadows on sunlight-sensitive resources.

As shown in Table E-1, the proposed new structure would increase shadow coverage on Manuel De Dios Unanue Triangle on the December 21 analysis day.



MARCH 21/SEPTEMBER 21



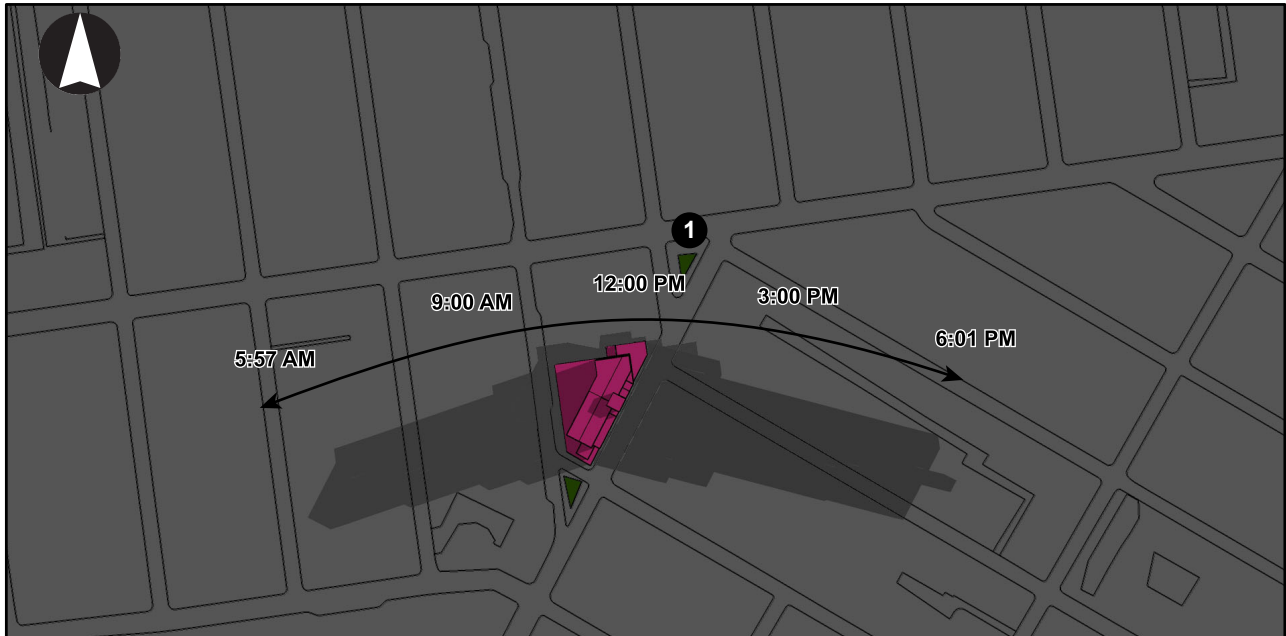
MAY 6/AUGUST 6

 Proposed Development

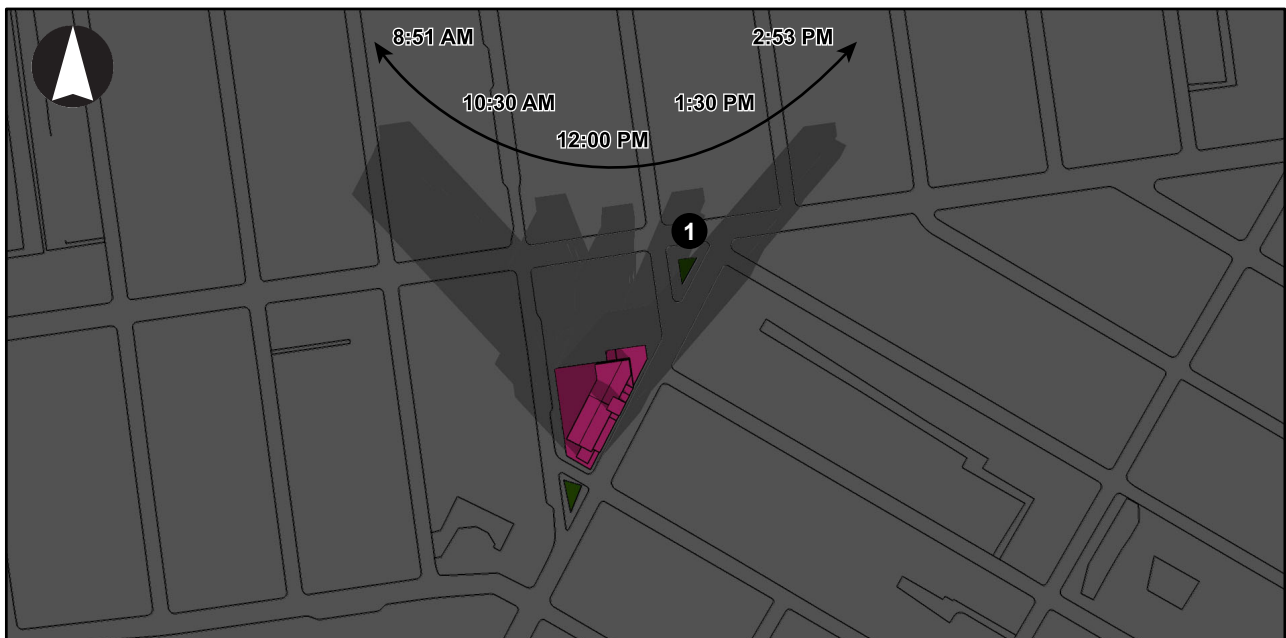
 Open Space

 Incremental Shadow

Note: Resources keyed to Table D-1



JUNE 21



DECEMBER 21

 Proposed Development

 Open Space

 Incremental Shadow

Note: Resources keyed to Table D-1

Figure E-3 show the extent of project-generated incremental shadows on Manuel De Dios Unanue Triangle. As shadows are in constant motion, these figures illustrate the extent of incremental shadows at particular moments in time, highlighted in red.

It should be noted that, per the 2014 *CEQR Technical Manual*, all times reported herein are Eastern Standard Time and do not reflect adjustments for daylight savings time that is in effect from mid-March to early November. As such, the times reported in this analysis for March 21/September 21, May 6/August 6, and June 21 need to have one hour added to reflect the Eastern Daylight Savings Time.

Table E-1
Duration of Incremental Shadows on Sunlight-Sensitive Resources

	Analysis Day	March 21/Sept. 21	May 6/August 6	June 21	December 21
		7:36 AM-4:29 PM	6:27 AM-5:18 PM	5:57 AM – 6:01 PM	8:51 AM – 2:53 PM
Manuel De Dios Unanue Triangle	Shadow Enter-Exit Time				1:16 PM-2:31 PM
	Incremental Shadow Duration				1 hour and 15 minutes

Note: All times are Eastern Standard Time; Daylight Savings Time was not accounted for per 2014 *CEQR Technical Manual* guidelines. Table indicates the entry and exit times and total duration of incremental shadows for each sunlight-sensitive resource.

December 21

On December 21 the time period for shadows analysis begins at 8:51 AM and continues until 2:53 PM.

The proposed project would cast incremental shadows on Manuel De Dios Unanue Triangle beginning at 1:16 PM and continuing until 2:31 PM, for a duration of 1 hour and 15 minutes. Before 1:16 PM the open space would not experience any incremental shadow coverage. As shown in Figure E-3, at 1:30 PM portions of the open space would still receive direct sunlight and incremental shadows would be limited to the western portion of the open space. As indicated in Figure E-3, incremental shadows would be limited to a northern portion of the open space at approximately 2:00.

Assessment

A shadows impact occurs when incremental shadows from a proposed structure fall on a sunlight-sensitive resource or feature and reduces direct sunlight exposure. Determining whether or not this impact is significant depends on the extent and duration of the incremental shadows and the specific context in which the impact occurs.

For open spaces, the uses and features of the space indicate its sensitivity to shadows. Shadows occurring during the cold-weather months of interest generally do not affect the growing season of outdoor vegetation; however, their effects on other uses and activities should be assessed. Therefore, this sensitivity is assessed for both (1) warm-weather-dependent features or vegetation that could be affected by a loss of sunlight during the growing season; and (2) features, such as benches, that could be affected by a loss of winter sunlight. Where lawns are actively used, the turf requires extensive sunlight. Vegetation requiring direct sunlight includes the tree canopy, flowering plants and plots in community gardens. Generally, four to six hours a day of sunlight, particularly in the growing season, is often a minimum requirement. Consequently, the assessment of an open space's sensitivity to increased shadow focuses



1:30 PM



2:00 PM

 Proposed Development  Open Space  Incremental Shadow

on identifying the existing conditions of its facilities, plantings, and uses, and the sunlight requirements for each.

The proposed new building would cast limited incremental shadows on Manuel De Dios Unanue Triangle on one of the four representative analysis days. Incremental shadow duration would be 1 hour and 15 minutes on December 21. As shadow coverage would generally be limited to small portions of the open space during the mid-afternoon (see Figure E-3), and the open space would continue to receive direct sunlight throughout the morning and early afternoon periods, incremental shadows are not expected to have a significant effect on the utilization or enjoyment of this open space resource. Furthermore, as the open space would continue to receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the 2014 *CEQR Technical Manual*), trees and plantings within the open space resource would not be affected. Therefore, the effects of shadow coverage on both users and vegetation would be essentially the same with or without the proposed project, and no significant adverse shadow impacts on Manuel De Dios Unanue Triangle are anticipated.

40-31 82nd Street Rezoning EAS
Attachment F: Urban Design and Visual Resources

I. INTRODUCTION

The *City Environmental Quality Review (CEQR) Technical Manual* states that the urban design components and visual resources determine the “look” of a neighborhood—its physical appearance, including the street pattern, the size and shape of buildings, their arrangement on blocks, streetscape features, natural resources, and noteworthy views that may give an area a distinctive character. Pursuant to CEQR methodology, actions that would allow a project to potentially obstruct view corridors, compete with icons in the skyline, or make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings may warrant a detailed urban design and visual resources analysis. The Proposed Actions include the rezoning of an R6/C1-3 district to a C4-5X district, which would result in a development that would differ from what is permitted as-of-right, and as such, an analysis of urban design and visual resources is appropriate.

The proposed zoning map amendment would replace the existing R6/C1-3 district within the proposed rezoning area with a C4-5X district. As discussed in Attachment A, “Project Description,” the applicant is proposing a 13-story (145-foot tall), approximately 203,830 gsf (140,328 zsf) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above (Scenario 1). The commercial component of the project would consist of approximately 76,375 gsf, located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf. Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable DUs pursuant to the MIH Program.¹ As part of the proposed development, a total of 128 accessory parking spaces would be provided on the sub-cellar level. Access to the sub-cellar parking level would be via Baxter Avenue.

As discussed in Attachment A, “Project Description,” the Proposed Actions would permit a 4.0 FAR for commercial use rather than the 2.0 FAR currently permitted under the existing R6/C1-3 zoning and would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant’s proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf)

¹ The proposed MIHA would be coterminous with the area being rezoned, and would therefore not cover the northeastern corner of Lot 15. However, the MIH area boundary would be extended pursuant to ZR 77-11 (the “25 Foot Rule”).

could be developed within the rezoning area (Scenario 2). It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to art related exhibition space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

As Scenario 1 would result in a larger development than Scenario 2, Scenario 1 is analyzed for potential urban design and visual resources impacts for conservative analysis purposes.

This attachment considers the potential for the Proposed Actions to affect the urban design characteristics and visual resources of the project area and the study area. As described in Attachment A, "Project Description," the proposed rezoning area encompasses a majority of Lot 15 on Block 1493 in the Jackson Heights/Elmhurst neighborhood of Queens Community District (CD) 4 (see Figures F-1 and F-2). The technical analysis presented below follows the guidelines of the *CEQR Technical Manual* and addresses each of the above-listed characteristics for existing conditions, the future without the Proposed Actions (the No-Action conditions), and the future with the Proposed Actions (the With-Action conditions) for a 2020 Build Year.

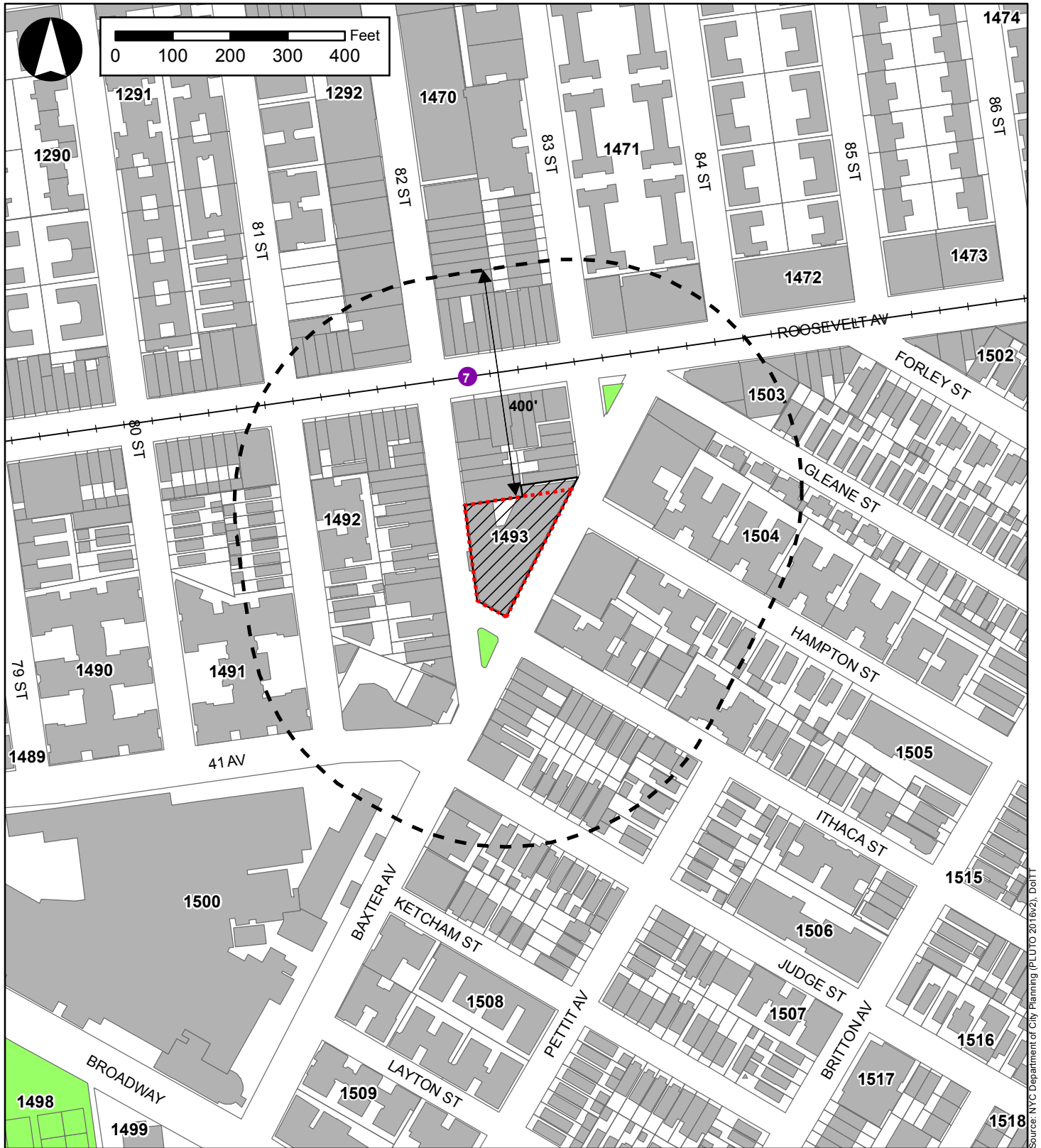
II. PRINCIPAL CONCLUSIONS

Urban Design

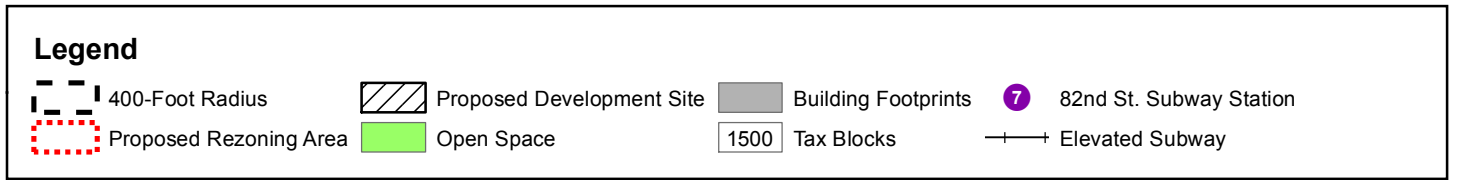
The proposed zoning map amendment would replace the existing R6/C1-3 district within the proposed rezoning area with a C4-5X district. Development facilitated by the Proposed Actions would not result in significant adverse impacts on urban design as defined by the guidelines for determining impact significance set forth in the *CEQR Technical Manual*. In the future with the Proposed Actions, the visual appearance on the development site would be enhanced and thus the pedestrian experience of the development site would change somewhat; however, this change would not meet the *CEQR Technical Manual* threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the development site such that the alteration would negatively affect a pedestrian's experience of the area.

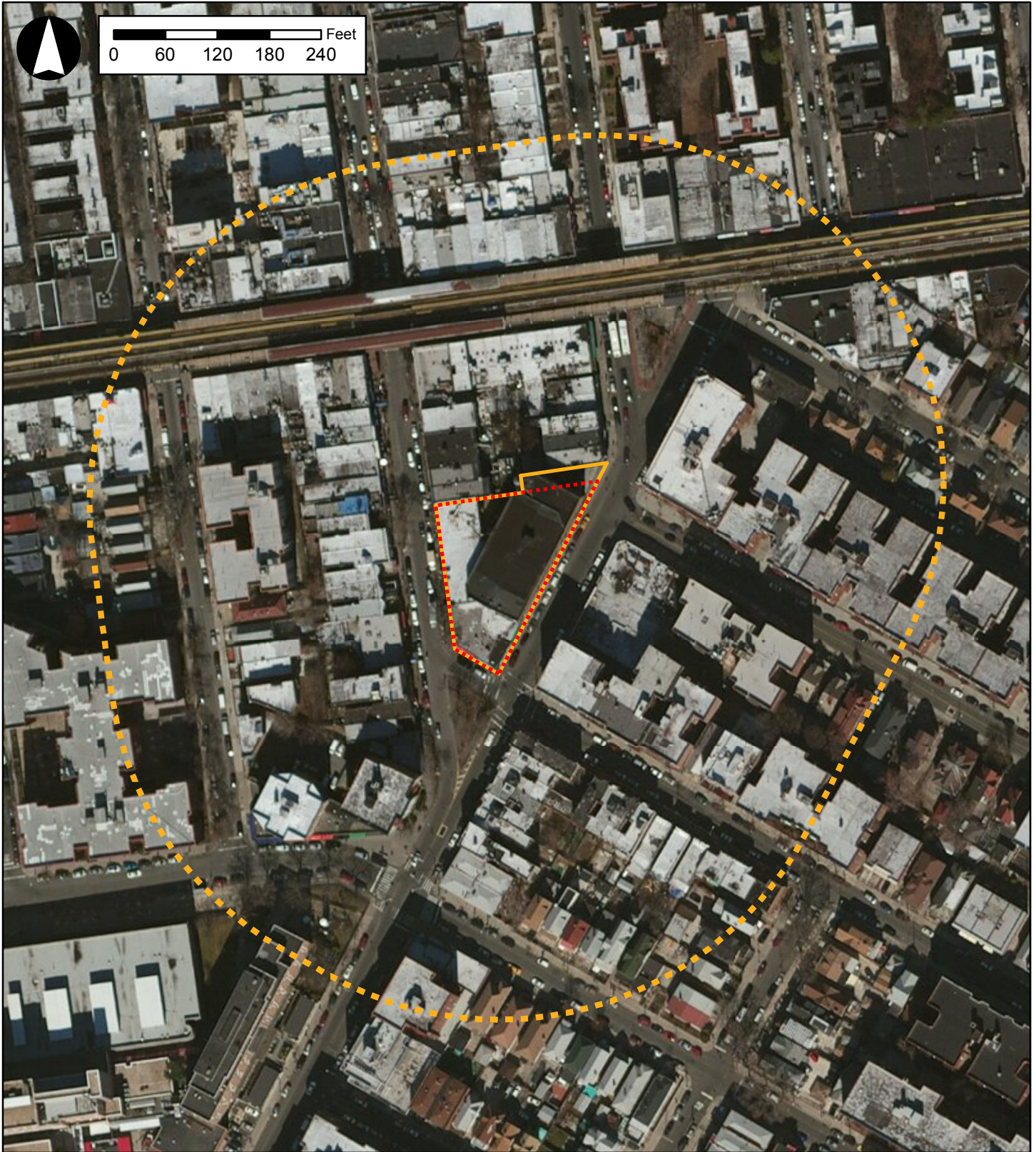
Visual Resources

There are no visual resources that can be seen from the proposed rezoning area. The development facilitated by the Proposed Actions would not obstruct or eliminate any public views nor affect any






Source: NYC Department of City Planning (PLUTO 2016v2), DoIT





Legend

-  400-Foot Radius
-  Proposed Rezoning Area
-  Proposed Development Site

existing view corridors or views to visual resources in the study area. As such, the Proposed Actions would not result in any significant adverse impacts to visual resources.

III. METHODOLOGY

In accordance with the *CEQR Technical Manual*, this analysis considers the effects of the proposed project on the following elements that collectively form an area's urban design:

- *Street Pattern and Streetscape*—the arrangement and orientation of streets define location, flow of activity, and street views and create blocks on which buildings and open spaces are arranged. Other elements including sidewalks, plantings, street lights, curb cuts, and street furniture also contribute to an area's streetscape.
- *Buildings*—building size, shape, pedestrian and vehicular entrances, lot coverage, and orientation to the street are important urban design components that define the appearance of the built environment.
- *Open Space*—open space includes public and private areas that do not include structures, including parks and other landscaped areas, cemeteries, and parking lots.
- *Natural features*—natural features include vegetation and geologic and aquatic features that are natural to the area.
- *View Corridors and Visual Resources*—visual resources include significant natural or built features, including important view corridors, public parks, landmark structures or districts, or otherwise distinct buildings.
- *Wind* – Channelized wind pressure from between tall buildings and downwashed wind pressure from parallel tall buildings may cause winds that may jeopardize pedestrian safety.

In general, an assessment of urban design is needed when a project may have effects on one or more of the elements that contribute to the pedestrian experience, described above. As the Proposed Actions could result in physical changes to the proposed development site beyond the bulk and form currently permitted as-of-right, it has the potential to result in development that could alter the arrangement, appearance, and functionality of the built environment and, therefore, change the experience of a pedestrian in the project area. The following urban design analysis follows the guidelines of the *CEQR Technical Manual*.

Per criteria of Section 230 of the 2014 *CEQR Technical Manual*, a wind condition analysis is not warranted for the Proposed Actions. The proposed rezoning area is not located in a high wind location, such as directly along the waterfront, nor is it in a location where wind conditions from the waterfront are not attenuated by buildings or natural features.

Study Area

The urban design study area consists of both a primary study area, where the urban design effects of the Proposed Actions are direct, and a secondary study area (refer to Figure F-1). For the purpose of this assessment, the primary study area consists of the proposed rezoning area. The secondary study area extends approximately 400-feet from the boundary of the proposed rezoning area and encompasses areas that have the potential to experience indirect impacts as a result of the Proposed Actions. It is

generally bounded by 81st Street to the west, 41st Avenue and Judge Street to the south, Roosevelt Avenue to the north, and the midblocks of Hampton and Ithaca Streets to the east. Both the primary and secondary study areas have been established in accordance with 2014 *CEQR Technical Manual* guidelines.

The analysis of urban design and visual resources is based on May 2017 field visits, photography, and computer imaging of the proposed development site and the surrounding 400-foot study area.

IV. PRELIMINARY ASSESSMENT

Pursuant to CEQR, a preliminary assessment of urban design is appropriate when there is the potential for a pedestrian to observe from the street level a physical alteration beyond that allowed by existing zoning. CEQR further stipulates a detailed analysis is warranted for projects that would result in substantial alterations to the streetscape of the neighborhood by noticeably changing the scale of buildings. According to the 2014 *CEQR Technical Manual*, detailed analyses are generally appropriate for area-wide rezonings that include an increase in permitted floor area or changes in height and setback requirements. The increased scale, both in terms of bulk and height, on the proposed development site would be a notable change from the pedestrian's perspective to the appearance and character of the proposed development site compared to the No-Action conditions. The visual appearance would be enhanced and thus the pedestrian experience of the development site would change somewhat; however, this change would not meet the *CEQR Technical Manual* threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the proposed development site such that the alteration would negatively affect a pedestrian's experience of the area. As such, the Proposed Actions would not result in a substantial alteration to the streetscape of the neighborhood, and therefore, a preliminary analysis of urban design has been conducted and is provided below.

Existing Conditions

Primary Study Area (Proposed Rezoning Area)

Urban Design

Buildings

The proposed development site comprises approximately 23,428 sf on one tax lot (Block 1493, Lot 15), which is owned by the Applicant and bounded by Baxter Avenue to the east, 82nd Street to the west, and Ithaca Street to the south. The proposed C4-5X district would be mapped on a portion of lot 15 (approximately 21,648 sf). Approximately 1,780 sf of the proposed development site would remain within the existing R6/C1-3 district.

Lot 15 had recently been occupied by a number of structures ranging in height from one to four stories. The structures on the site include a 3- to -4-story brick building that was formerly occupied by a vacant movie theater a single-story building fronting on Baxter Avenue that was formerly occupied by a dry cleaning facility, and two single- and two-story commercial structures fronting on Baxter and 82nd streets containing a number of retail and office uses (e.g., restaurant, wine and liquor store, produce vendors,

etc.). The buildings previously located on the site comprised a total of approximately 22,500 zsf for a total built FAR of approximately 0.96.

The Applicant has recently demolished the buildings on the project site per an application filed with the NYC Department of Buildings (DOB) in anticipation of constructing a mixed-use development (see discussion of “Future without the Proposed Actions” below). As shown in Figures F-3 and F-4, demolition of the existing buildings has recently occurred.

Table F-1: Previous Existing Uses within the Primary Study Area (Proposed Rezoning Area)

Block/Lot	Lot Area (sf)	Building Area (zsf)	FAR	Land Use
1493/ Lot 15	23,428	22,500	0.96	Commercial

Street Pattern and Streetscape

The proposed rezoning area is situated along Baxter Avenue, a one-way thoroughfare that runs north-south connecting Roosevelt Avenue and Broadway. Baxter Avenue, which carries northbound traffic, is classified as a ‘narrow’ street with 60 feet in width. The proposed rezoning area also contains frontage along 82nd Street, a one-way, ‘narrow’ (60’) street carrying southbound traffic, and Ithaca Street, a one-way, ‘narrow’ street (23’) carrying eastbound traffic. Under existing conditions, pedestrian and vehicular flow around the proposed rezoning area is heavy along Baxter Avenue and 82nd and Ithaca Streets, and there is a typical street grid pattern in the immediate vicinity of the proposed rezoning area. The proposed rezoning area adjoins the sidewalks along Baxter Avenue, 82nd Street, and Ithaca Street. Streetscape elements are common and varied and include standard street signs, cobra head lampposts, fire hydrants, parking payment kiosks, trash receptacles, circular bike racks, and benches (see Figures F-3 and F-4). In addition, there are several street trees located along 82nd Street and Ithaca Street.

Natural Features and Open Space

There are no natural features or open space resources located on the proposed development site or within the proposed rezoning area. The existing structures cover virtually all of the zoning lot.

View Corridors and Visual Resources

There are no view corridors within the proposed rezoning area, nor any visual resources that can be seen from the proposed rezoning area.

Secondary Study Area

Urban Design

Buildings

Table C-2 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 the table and in Figures F-5 through F-8, the secondary study area contains mixed density commercial and residential buildings. The central and northern portions of the study area (see Figures F-5 through F-7)



1. View from Baxter Avenue looking southwest towards proposed development site.



2. View from Baxter Avenue looking west towards proposed development site.



3. View from Baxter Avenue (just north of Ithaca Street) looking northwest towards proposed development site.



4. View from corner of Ithaca Street and Baxter Avenue looking northwest towards proposed development site.



5. View from corner of Ithaca and 82nd Streets looking north towards proposed development site.



6. View along sidewalk on 82nd Street (beneath scaffolding) looking north.



7. View from 82nd Street looking northeast towards proposed development site.



8. View from 82nd Street looking east. Proposed development site is on the right.



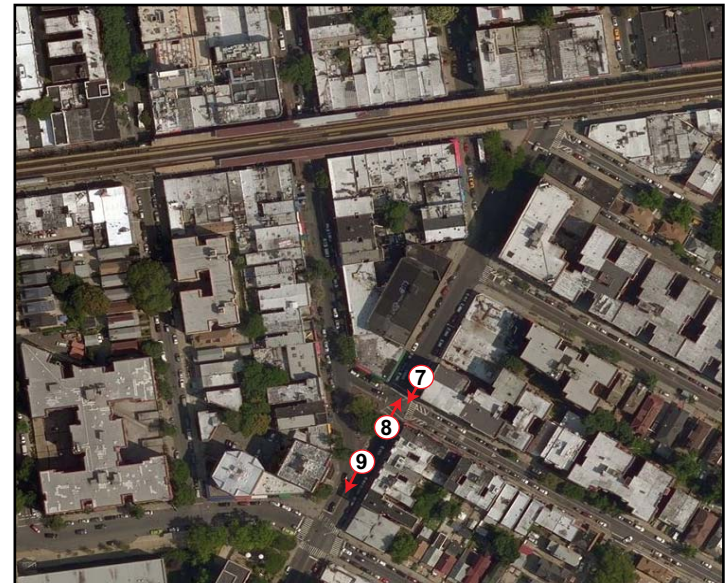
7. View looking south from intersection of Baxter Avenue and Ithaca Street.



8. View of looking north from intersection of Baxter Avenue and Ithaca Street.



9. View looking south along Baxter Avenue from Dunningham Triangle.





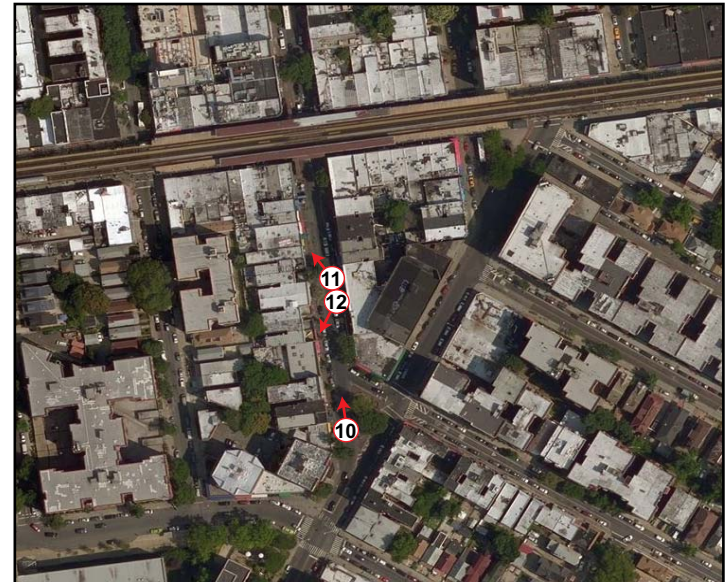
10. View looking north along 82nd Street (Dunningham Triangle is to the right).



11. View of commercial corridor looking northwest along 82nd Street.



12. View of commercial corridor looking southwest along 82nd Street.





13. View of 82nd Street elevated Subway Station entrance (No. 7 Train) looking northwest along 82nd Street.



14. View of elevated Subway tracks (No. 7 Train) looking east from intersection of 82nd Street and Roosevelt Avenue.



15. View looking south along 83rd Street from Manuel De Dios Unanue Triangle.

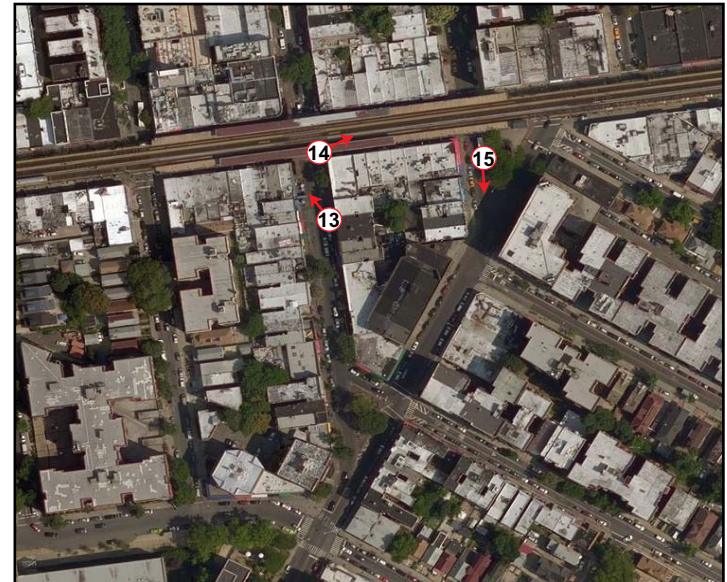


Figure F-7
Existing Conditions



16. View looking north from intersection of Hampton Street and Baxter Avenue.



17. View looking southeast along Hampton Street.



18. View of Elmhurst Hospital Center looking southwest along 41st Avenue.



contain primarily low density, one-and two-story commercial development featuring local retail uses. The commercial development is clustered around the 82nd Street Subway Station, which is located at the intersection of Roosevelt Avenue and 82nd Street in the northern portion of the study area. From this intersection, the commercial corridors extend east to west along Roosevelt Avenue and north to south along 82nd Street. Additionally, Baxter Avenue contains a number of commercial and mixed-use buildings. The eastern portion of the study area (see Figure F-8) is dominated by mixed density residential development, with multi-family elevator buildings clustered around Hampton and Ithaca Streets, and one- and two-family and multi-family walkup buildings clustered in the southern portion of the study area.

Street Pattern and Streetscape

The street pattern in the study area is composed of rectilinear blocks within a street grid system. Baxter Avenue is a two-way thoroughfare in the southern portion of the study area, however, the roadway transitions into a one-way (traffic flows head north) street at its intersection with 82nd Street. 82nd Street is a one-way street (traffic flows head south) that connects with Ithaca Street and Baxter Avenue south of the proposed rezoning area. Both Baxter Avenue and 82nd Street connect to Roosevelt Avenue in the northern portion of the secondary study area. Roosevelt Avenue is a major two-way, east to west thoroughfare connecting Sunnyside and Flushing. In addition to vehicular traffic, Roosevelt Avenue also features the elevated subway tracks of the No. 7 train, which connects Downtown Flushing to western Manhattan (see Figure F-7). A majority of the local streets within the secondary study area accommodate one-way traffic, however, Hampton Street, located in the eastern portion of the study area, is a two-way street.

Natural Features and Open Space

There are no natural features located within the secondary study area. However, there are two publicly accessible open space resources owned and operated by the New York City Department of Parks and Recreation (DPR) located within the study area. To the south of the proposed rezoning area, across Ithaca Street, is Dunningham Triangle, an approximately 1,479 sf plaza which contains plantings and a large tree. To the north of the proposed rezoning area, across Baxter Avenue, is Manuel De Dios Unanue Triangle, an approximately 1,740 sf plaza which contains trees and plantings.

View Corridors and Visual Resources

There are no view corridors within the secondary study area, nor any visual resources that can be seen from the proposed rezoning area.

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

Primary Study Area (Proposed Rezoning Area)

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area's R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project

would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to art related exhibition space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

Secondary Study Area

There are no known developments to be completed within the 400-foot secondary study area by the analysis year of 2020.

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

This section describes the effects of the Proposed Actions on the urban design and visual resource conditions in the area by 2020 and evaluates the potential for the Proposed Actions to result in significant adverse impacts. As discussed above, because the With-Action scenario would result in a larger development than the No-Action scenario, the With-Action scenario is analyzed for its potential to result in significant adverse urban design and visual resources impacts.

Primary Study Area (Proposed Rezoning Area)

Urban Design

Buildings

The Applicant is proposing a 13-story (145-foot tall), approximately 203,830 gsf (140,328 zsf) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gsf, located on the cellar, first, and second floors. Approximately 1,996 gsf of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf, with an estimated 120 DUs.

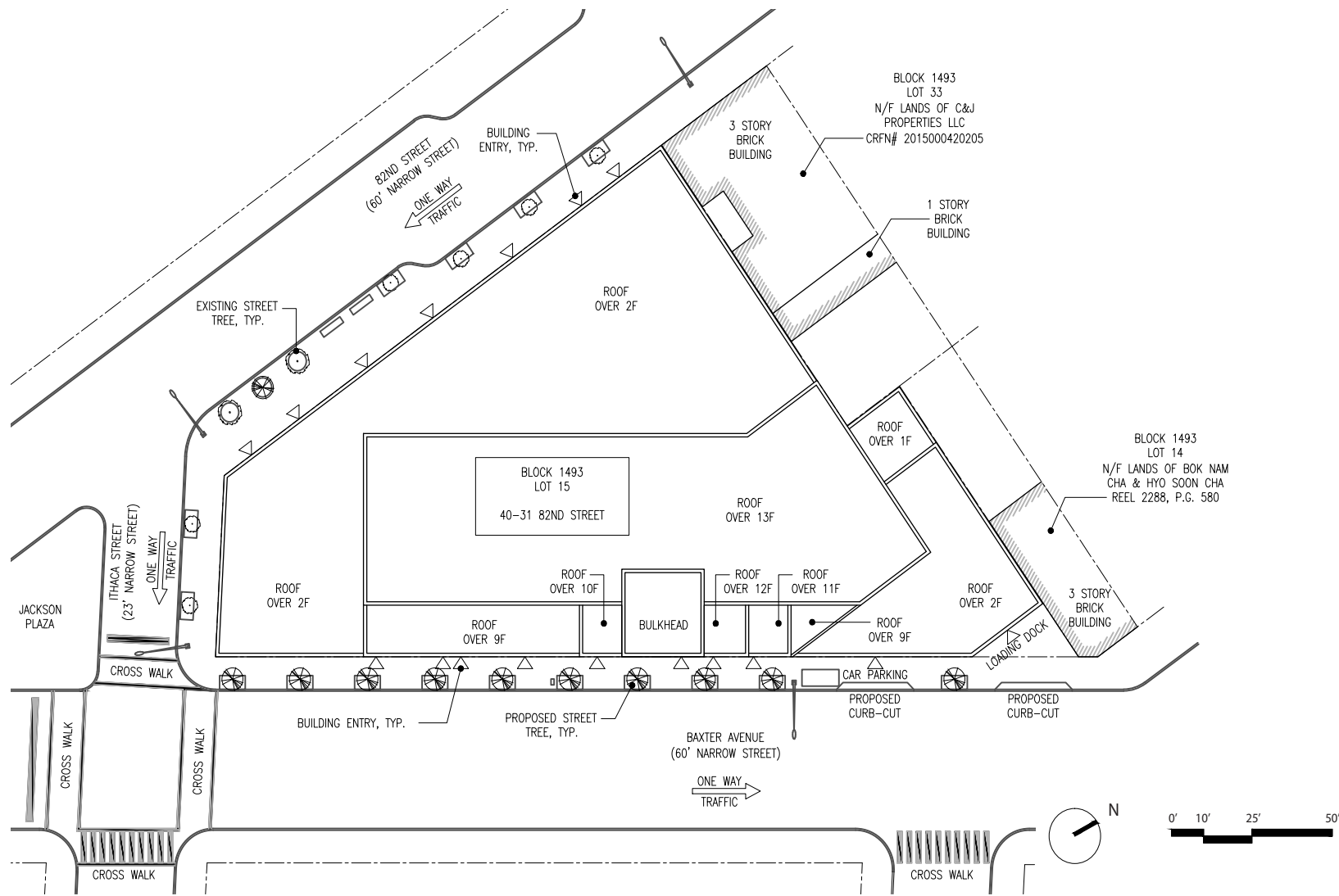
The proposed development would have a base height of 105' and a maximum height of 145'. As shown in Figure F-9, entrances to the proposed retail development would be located along both 82nd Street and Baxter Avenue while the residential and community facility entrances would be located along Baxter Avenue.

Street Pattern and Streetscape

The Proposed Actions would not result in changes to the streetscape or the arrangement or orientation of streets surrounding the proposed rezoning area (see Figure F-9).

Natural Features and Open Space

As discussed above, there are no natural features or open space resources located within the proposed rezoning area.



40-31 82nd Street Rezoning EAS

Figure F-9
With-Action Site Plan



Source: NYC Department of City Planning (PLUTO 2016v2), DoITT



Visual Resources and View Corridors

There are no visual resources, nor any view corridors that can be seen from the proposed rezoning area. As such, the Proposed Actions would not result in a significant adverse impact to visual resources and view corridors within the proposed rezoning area.

Assessment

As shown in Figures F-12 to F-13, which depict the proposed development under the With-Action scenario, the Proposed Actions would change the urban design character of the proposed rezoning area. The proposed development would introduce an approximately 203,830 gsf, 145-foot tall mixed-use building, the height and bulk of which would be larger than the existing commercial structures on the proposed development site. The increased scale, both in terms of bulk and height, would be a significant change from the pedestrian's perspective to the appearance and character of the proposed 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 would differ and thus the pedestrian experience of the proposed development site would change. However, the Proposed Actions would not meet the *CEQR Technical Manual* threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the proposed development site such that the alteration would negatively affect a pedestrian's experience of the area.

Secondary Study Area

Urban Design

Buildings

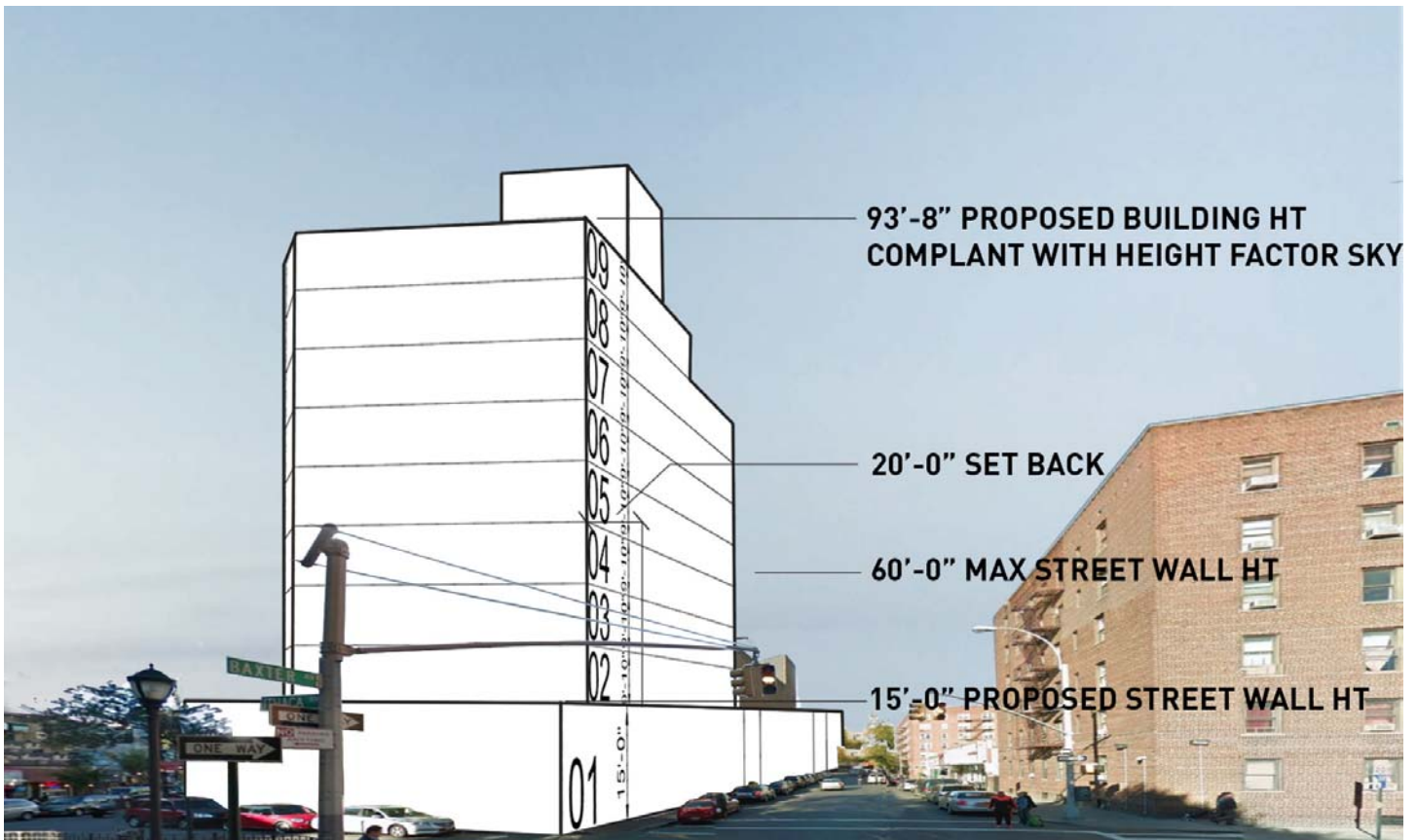
Within the study area, there is a range of existing building types and heights (see Figures F-10 and F-11). The northern, western, and southern portions of the study area are generally developed with low density commercial and mixed-use buildings, while higher density buildings exist in the eastern portion of the study area. As such, the Proposed Actions would not have significant adverse impacts on this urban design characteristic of the study area. The residential, commercial, and community facility uses that would be developed under the With-Action scenario would be in keeping with the existing character of the study area. In addition, there would be no change to building arrangement, bulk, use or type in the secondary study area as a result of the Proposed Actions.

Street Pattern and Streetscape

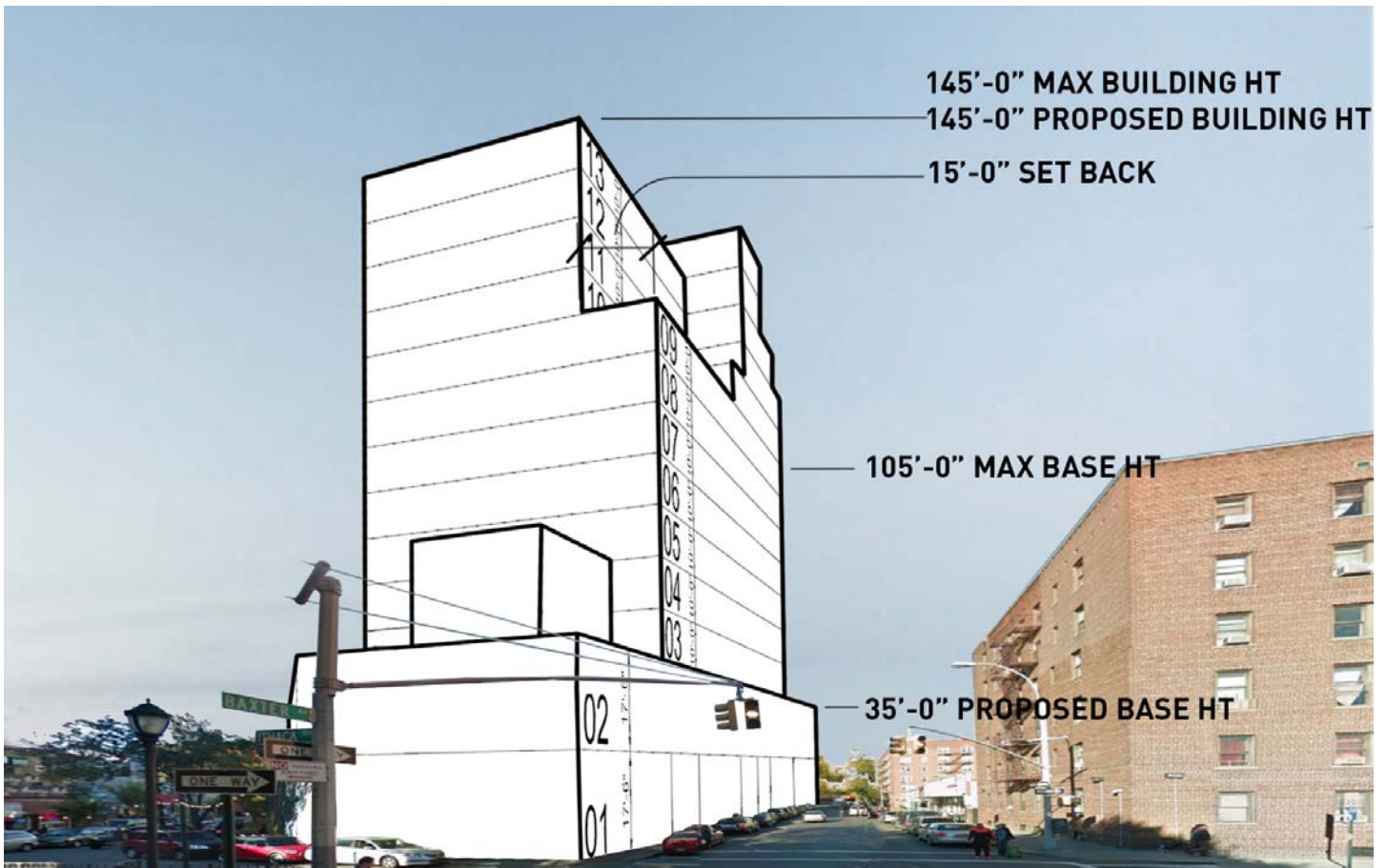
The proposed development under the With-Action scenario is expected to be consistent with the street pattern and streetscape found throughout the secondary study area.

Natural Features and Open Space

There are no natural features within the secondary study area. The Proposed Actions would not affect any public or private open space resources located within the secondary study area.



No-Action view of the project site on Baxter Ave looking toward Roosevelt Ave



With-Action view of the project site on Baxter Ave looking toward Roosevelt Ave



No-Action view of the project site on 82nd St looking toward Ithaca St



With-Action view of the project site on 82nd St looking toward Ithaca St

Visual Resources and View Corridors

There are no visual resources, nor any view corridors that can be seen from the secondary study area. As such, the Proposed Actions would not result in a significant adverse impact to visual resources and view corridors within the secondary study area.

Assessment

Overall, the Proposed Actions are expected to improve urban design conditions within the secondary study area. As such, the Proposed Actions would not result in a significant adverse impact to urban design in the secondary study area.

40-31 82nd Street Rezoning EAS
ATTACHMENT G: HAZARDOUS MATERIALS

I. INTRODUCTION

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, methane, polychlorinated biphenyls and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the 2014 *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.

A Phase I Environmental Site Assessment (ESA) was conducted for the Applicant's development site. This assessment was undertaken to determine whether additional investigations are necessary and whether an (E) designation should be placed on the development site (Block 1493, Lot 15) under the Proposed Actions to avoid the potential for impacts pertaining to hazardous materials.

II. PRINCIPAL CONCLUSIONS

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

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

III. METHODOLOGY

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

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

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

A Phase I ESA was conducted for the proposed development site using the following parameters:

- *Historical Land Use* – The land use history was evaluated using available historical Sanborn fire insurance maps. Sanborn Maps from the years 1890 through 2005 were obtained and reviewed for the proposed development site, as well as the adjacent and surrounding areas.
- *Regulatory Agency List Review* – A review of the federal and state hazardous materials databases, maintained by the United States Environmental Protection Agency (US EPA) and New York State Department of Environmental Conservation (NYSDEC), respectively, was performed. This review identified the sites where storage, handling, emission, and /or spill cleanup of hazardous or toxic materials have been performed in order to determine whether they may have impacted the proposed development site.

IV. EXISTING CONDITIONS

A Phase I ESA was prepared for the development site by Singer Environmental Group LTD in June 2015. The Phase I ESA identified several recognized environmental conditions (REC) based on the historic and current usage of the surrounding properties, the presence of asbestos containing materials, and the presence of fuel storage tanks. Based on the RECs disclosed in the Phase I ESA, more work is required to determine the nature and extent of the contamination so that the potential for significant adverse impacts can be fully disclosed and mitigation developed, as appropriate. A Phase II ESA (described in Section 330) should be performed to determine the nature and extent of any contamination.

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

In the future without the Proposed Actions, the proposed development site would not be rezoned and an (E) designation would not be assigned to the affected lots. The existing residential buildings would remain on the proposed development site.

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

In the future with the Proposed Actions, the rezoning would convert the area to a C4-5X commercial zoning district. The assessment above established that the proposed development site has some potential of hazardous material contamination. The New York City Department Office of Environmental Remediation (OER) is currently reviewing the Phase I ESA to determine whether further investigation will be required. If OER determines that further investigation is required, the Proposed Actions would include assigning a hazardous materials (E) designation on Lot 15 on Block 1493 (E-463). The (E) designation that would be assigned to these lots would require that further investigation be performed to determine the presence and nature of contaminants of concern and the proper remedial and/or health and safety measures that would be employed during construction.

OER will be notified at least one week prior to the start of investigative activities on the project site. Such obligations will be made binding through the Restrictive Declaration tied to the applicant's development site (which will outline the timing for all obligations).

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

The text of the hazardous materials (E) designations for the proposed development site (Block 1493, Lot 15) would be as follows:

Task 1: Sampling Protocol

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

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

Task 2: Remediation Determination and Protocol

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

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

An OER-approved construction-related health and safety plan (CHASP) would be implemented during excavation and construction activities to protect workers and the

community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

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

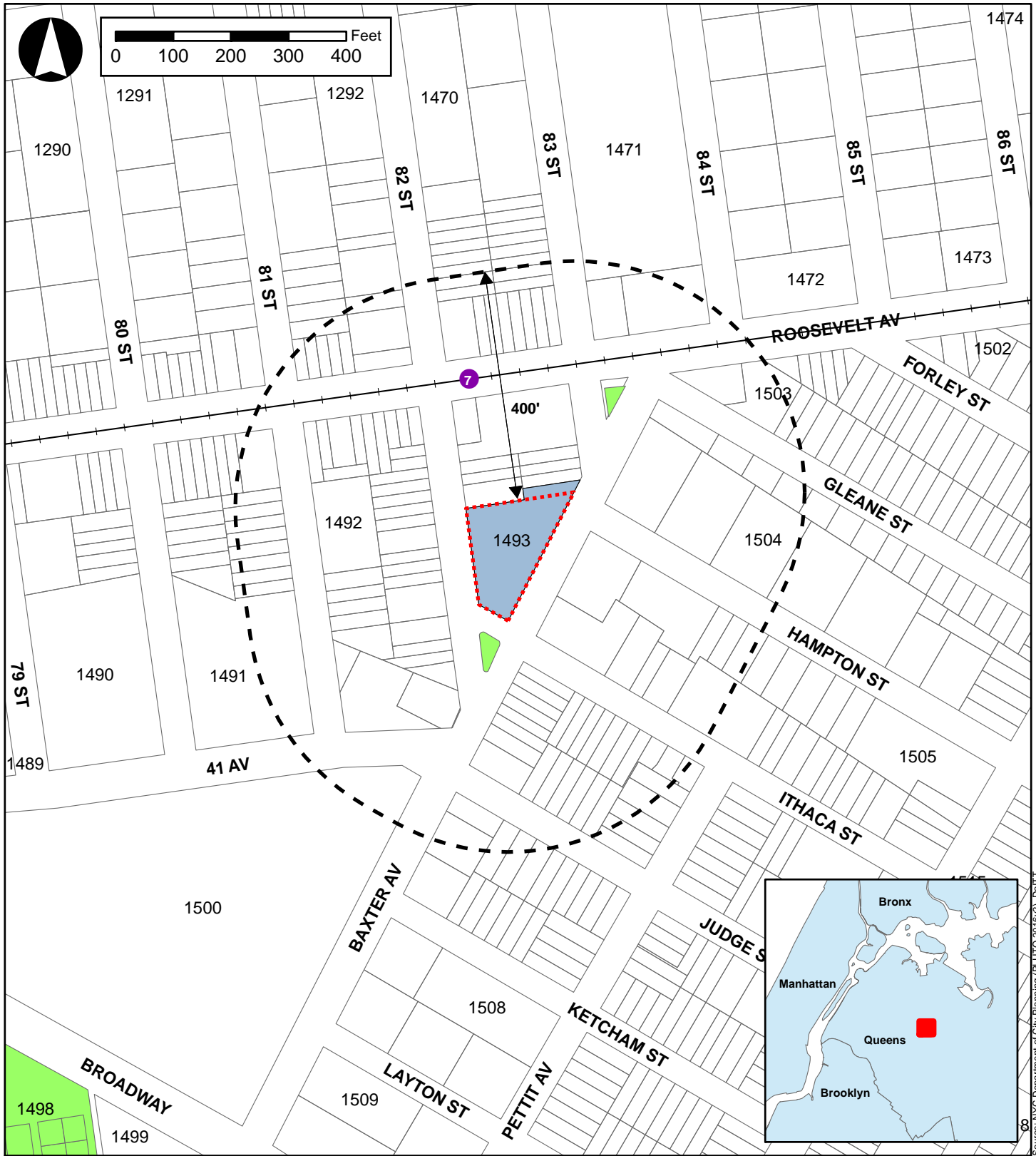
I. INTRODUCTION

This attachment presents the findings of the analyses of traffic, parking, transit, and pedestrian conditions for the Reasonable Worst Case Development Scenario (RWCDs). As discussed in Attachment A, “Project Description,” the applicant is seeking a zoning map and a zoning text amendment from the New York City Planning Commission (CPC) in order to facilitate the construction of a new 13-story (145-foot tall) mixed-use building (the proposed project) located at 40-31 82nd Street (Block 1493, Lot 15) in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4. The proposed project would rezone Block 1493, portion of Lot 15, from a R6/C1-3 to a C4-5X district, and would also include a zoning text amendment to designate the proposed rezoning area as a Mandatory Inclusionary Housing (MIH) Area. The project site is located on the block bounded by Roosevelt Avenue to the north, Baxter Avenue to the east, Ithaca Avenue to the south, and 82nd Street to the west (refer to Figure H-1).

Under the RWCDs, the project site would be developed with an approximately 203,831 gross square foot (gsf) building consisting of approximately 125,460 gsf of residential floor area with 147 dwelling units (DUs), approximately 76,375 gsf of commercial space, approximately 1,996 gsf of community facility space, and 128 accessory parking spaces. The proposed project is expected to be completed and operational in 2020. While the applicant intends to develop the proposed project described above (“Scenario 1”), because the Proposed Actions would result in C4-5X zoning district, an alternate commercial With-Action RWCDs option will be considered for conservative analysis purposes (“Scenario 2”). This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height, contain up to 182 rooms, and also include 130 accessory parking spaces located in the cellar level of the building.

As discussed in Attachment A, “Project Description,” in the absence of the proposed project, it is expected that an approximately 133,749 gsf as-of-right mixed-use development consisting of approximately 65,524 gsf of residential floor area with 77 DUs, 51,921 gsf of commercial space, approximately 1,996 gsf of community facility space, and 130 accessory parking spaces, would be constructed at the project site. The incremental development at the project site serves as the basis of the transportation impact analysis, which was conducted in accordance with the 2014 *CEQR Technical Manual*.

As discussed in detail below, Scenario 1 would not exceed the 2014 *CEQR Technical Manual* thresholds for a detailed traffic, parking, or transit analysis, and therefore is not anticipated to result in significant adverse traffic, parking, or transit impacts. Although, Scenario 1 would exceed the 2014 *CEQR Technical Manual* thresholds for detailed traffic and pedestrian analyses, as discussed in detail, Scenario 1 would not result in any significant traffic or pedestrian impacts. Similarly, as discussed below, Scenario 2 would not exceed the 2014 *CEQR Technical Manual* thresholds for a detailed traffic, parking, transit, or pedestrian analysis, and therefore, is not anticipated to result in significant adverse transportation impacts.



Source: NYC Department of City Planning (PLUTO 2016v2), DoIT

Legend

- 400-Foot Radius
- Proposed Rezoning Area
- Proposed Development Site
- 1507 Tax Blocks
- Elevated Subway
- 82nd St. Subway Station
- Open Space

II. PRINCIPAL CONCLUSIONS

Based on the following detailed analysis, the anticipated level of new transportation demand generated by Scenario 1 and Scenario 2 are not expected to result in any significant adverse impacts to traffic, parking, transit or pedestrian conditions in the vicinity of the project site. Under Scenario 2, detailed traffic, parking, transit (subway and bus), and pedestrian analyses were screened out. However, a total of four pedestrian elements, including one sidewalk and three corners, were analyzed under Scenario 1 as part of a detailed pedestrian analysis during the weekday midday peak hour period. This analysis determined that no impacts are anticipated as a result of the project-generated pedestrian trips. Additionally, the Level 1 screening threshold was exceeded during the weekday midday period under Scenario 1, and a Level 2 screening assessment was conducted. The Level 2 screening determined that no single intersection will experience an increase of greater than 50 vehicles during any peak period, and a detailed traffic assessment is not warranted.

Additionally, crash data for the traffic and pedestrian study area intersections were obtained from the New York City Department of Transportation (DOT) for the 3-year reporting period between January 1, 2012 and December 31, 2014. While no intersections were found to have experienced a total of 48 or more crashes in any one year during this period, the intersection of 82nd Street and Roosevelt Avenue fell at the minimum threshold used to identify high crash locations. In 2012, five pedestrian and bicycle injury crashes occurred at this intersection. Therefore, safety measures, such as the restriping of pavement markings, will be coordinated with NYCDOT.

III. PRELIMINARY ANALYSIS METHODOLOGY

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

IV. LEVEL 1 SCREENING ASSESSMENT

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

peak hour bus riders, and 200 peak hour pedestrian trips to determine if a Level 2 screening and/or quantified operational analyses may be warranted. The travel demand assumptions used for this assessment are discussed below and a detailed travel demand forecast is provided.

Table H-1 below provides a comparison of the 2020 No-Action, 2020 With-Action (Scenario 1) and 2020 Alternate With-Action (Scenario 2) conditions identified for analysis purposes. As shown, by 2020, the incremental (net) change that would result from Scenario 1 is the addition of approximately 70 DUs and 24,454 gsf of commercial uses (local retail), and a reduction of approximately 2 accessory parking spaces. Additionally, by 2020, the incremental change that would result from Scenario 2 is the addition of approximately 182 hotel rooms and 2 accessory parking spaces, and a reduction of approximately 77 residential units, approximately 51,921 gsf of commercial uses (local retail), and approximately 1,996 gsf of community facility (art related uses) space. These incremental differences serve as the basis for analysis. As both Scenario 1 and Scenario 2 would have the potential to exceed *City Environmental Quality Review (CEQR) Technical Manual* analysis thresholds, preliminary travel demand forecasts were prepared.

Table H-1

Comparison of 2020 No-Action, 2020 With-Action, and 2020 Alternate With-Action Conditions

Use	No-Action Scenario	Scenario 1	Increment	Scenario 2	Increment
Residential	77 units	147 units	+70 units	0 units	-77 units
Commercial – Local Retail	51,921 gsf	76,375 gsf	+24,454 gsf	0 gsf	-51,921 gsf
Community Facility – Art Related Uses	1,996 gsf	1,996 gsf	0 gsf	0 gsf	-1,996 gsf
Commercial - Hotel	0 rooms	0 rooms	0 rooms	182 rooms	+182 rooms
Parking - Accessory	130 spaces	128 spaces	-2 spaces	130 spaces	0 spaces

Scenario 1

Transportation Planning Factors

Table H-2 shows the transportation planning factors that were used to forecast the travel demand generated by the proposed uses in the weekday AM, midday, PM and Saturday midday peak hours, under Scenario 1. These include trip generation rates, temporal and directional distributions, mode choice factors, vehicle occupancies, and truck trip factors for the incremental differences between the No-Action and With-Action (Scenario 1) scenarios (refer to Table H-1). The factors in Table H-2 were based on data cited in the *CEQR Technical Manual*, the *Jamaica Plan Rezoning FEIS*, and 2011-2015 American Community Survey (ACS) Means of Transportation to Work data.

Travel Demand Forecast

Table H-3 summarizes the results of that travel demand forecast for Scenario 1 based on the factors shown in Table H-1 and discussed above. Table H-3 shows the weekday peak hour person trips, transit trips, walking trips, and vehicle trips that would be generated by each of the proposed uses in 2020 with the construction of the proposed project. As shown in Table H-3, the proposed development would generate an incremental increase of 186, 838, 488, and 554 person trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. During the weekday AM, midday, PM, and Saturday midday peak hours, the proposed development would generate an increase of 17, 64, 37, and 32 vehicle trips (auto, taxi, and truck combined). The proposed development would also generate an incremental increase of 47, 52, 62, and 76 subway trips in the weekday AM, midday, PM and Saturday midday peak hours, respectively. The proposed development would also generate an incremental increase of 7, 26, 15, and

22 bus trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. In addition, the proposed development would generate a total of 164, 744, 433, and 506 pedestrian trips (including walk-only, subway, and bus trips) in the weekday AM, midday, PM, and Saturday midday peak hours, respectively. Of these incremental pedestrian trips, 110, 666, 356, and 408 are walk-only trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively.

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

Scenario 2

Transportation Planning Factors

Table H-4 shows the transportation planning factors that were used to forecast the travel demand generated by the proposed uses in the weekday AM, midday, PM and Saturday midday peak hours. These include trip generation rates, temporal and directional distributions, mode choice factors, vehicle occupancies, and truck trip factors for the incremental differences between the No-Action and Alternate With-Action (Scenario 2) scenarios (refer to Table H-1). The factors in Table H-4 were based on data cited in the *CEQR Technical Manual*, the *Jamaica Plan Rezoning FEIS*, and 2011-2015 American Community Survey (ACS) Means of Transportation to Work data.

Travel Demand Forecast

Table H-5 summarizes the results of that travel demand forecast for Scenario 2 based on the factors shown in Table H-1 and discussed above. Table H-5 shows the weekday peak hour person trips, transit trips, walking trips, and vehicle trips that would be generated by each of the proposed uses in 2020 with the construction of the Scenario 2. As shown in Table H-5, the proposed development would generate an incremental increase of -224, -1,532, -786, and -982 person trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. During the weekday AM, midday, PM, and Saturday midday peak hours, the proposed development would generate an increase of 15, -50, 1, and -22 vehicle trips (auto, taxi, and truck combined). The proposed development would also generate an incremental increase of -8, 0, -7 and -61 subway trips in the weekday AM, midday, PM and Saturday midday peak hours, respectively. The proposed development would also generate an incremental increase of -13, -53, -32, and -46 bus trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. In addition, the proposed development would generate a total of -242, -1,447, -773, and -949 pedestrian trips (including walk-only, subway, and bus trips) in the weekday AM, midday, PM, and Saturday midday peak hours, respectively. Of these incremental pedestrian trips, -221, -1,394, -734, and -949 are walk-only trips during the weekday AM, midday, PM and Saturday midday peak hours, respectively. Therefore, Scenario 2 would generate significantly less than 50 vehicle trips, 200 transit trips, and 200 person trips during all peak hours and further analyses are not warranted.

**Table H-2
Transportation Planning Factors (Scenario 1)**

Land Use:	Local Retail		Residential	
Size/Units:	24,454 gsf		70 DU	
Trip Generation:	(1)		(1)	
Weekday	205		8,075	
Saturday	240		9,600	
	per 1,000 sf		per DU	
Temporal Distribution:	(1)		(1)	
AM	3.0%		10.0%	
MD	19.0%		5.0%	
PM	10.0%		11.0%	
SatMD	10.0%		8.0%	
	(4)		(4)	
Modal Splits:	AM/MD/PM	SAT MD	All Periods	
Auto	11.0%	8.0%	14.0%	
Taxi	0.0%	0.0%	0.0%	
Subway	4.0%	7.0%	72.0%	
Bus	3.0%	4.0%	5.0%	
Walk/Bike/Other	82.0%	81.0%	9.0%	
	100.0%	100.0%	100.0%	
	(2)		(2)	
In/Out Splits:	In	Out	In	Out
AM	50%	50%	20.0%	80.0%
MD	50%	50%	51.0%	49.0%
PM	50%	50%	65.0%	35.0%
Sat MD	50%	50%	50.0%	50.0%
Vehicle Occupancy:	(4)		(3)	
	AM/MD/PM	SAT MD	All Periods	
Auto	1.50	1.60	1.21	
Taxi	1.50	1.60	1.21	
Truck Trip Generation:	(1)		(1)	
	0.35		0.06	
	0.04		0.02	
	per 1,000 sf		per DU	
	(1)		(1)	
AM	8.0%		12.0%	
MD	11.0%		9.0%	
PM	2.0%		2.0%	
Sat MD	11.0%		9.0%	
	In	Out	In	Out
AM/MD/PM	50.0%	50.0%	50.0%	50.0%

Notes:

- (1) Based on data from *City Environmental Quality Review (CEQR) Technical Manual, 2014*.
- (2) Based on data from the *Jamaica Plan Rezoning FEIS, 2007*.
- (3) Based on 2011-2015 American Community Survey Means of Transportation to Work data for Queens Census Tracts 267, 269.01, 269.02, 271, 279, 281, and 283.
- (4) Provided by NYCDOT.

**Table H-3
Travel Demand Forecast (Scenario 1)**

Land Use:	Local Retail	Residential	Total			
Size/Units:	24,454 gsf	70 DU				
Peak Hour Trips:						
AM	128	58	186			
MD	810	28	838			
PM	426	62	488			
Sat MD	500	54	554			
Person Trips:						
AM	In	Out	In	Out	In	Out
Auto	7	7	2	6	9	13
Taxi	0	0	0	0	0	0
Subway	3	3	8	33	11	36
Bus	2	2	1	2	3	4
Walk/Other	52	52	2	4	54	56
Total	64	64	13	45	77	109
MD	In	Out	In	Out	In	Out
Auto	45	45	2	2	47	47
Taxi	0	0	0	0	0	0
Subway	16	16	10	10	26	26
Bus	12	12	1	1	13	13
Walk/Other	332	332	1	1	333	333
Total	405	405	14	14	419	419
PM	In	Out	In	Out	In	Out
Auto	23	23	6	3	29	26
Taxi	0	0	0	0	0	0
Subway	9	9	28	16	37	25
Bus	6	6	2	1	8	7
Walk/Other	175	175	4	2	179	177
Total	213	213	40	22	253	235
Sat MD	In	Out	In	Out	In	Out
Auto	20	20	4	4	24	24
Taxi	0	0	0	0	0	0
Subway	18	18	20	20	38	38
Bus	10	10	1	1	11	11
Walk/Other	202	202	2	2	204	204
Total	250	250	27	27	277	277
Vehicle Trips:						
AM	In	Out	In	Out	In	Out
Auto (Total)	5	5	2	5	7	10
Taxi	0	0	0	0	0	0
Taxi Balanced	0	0	0	0	0	0
Truck	0	0	0	0	0	0
Total	5	5	2	5	7	10
MD	In	Out	In	Out	In	Out
Auto (Total)	30	30	2	2	32	32
Taxi	0	0	0	0	0	0
Taxi Balanced	0	0	0	0	0	0
Truck	0	0	0	0	0	0
Total	30	30	2	2	32	32
PM	In	Out	In	Out	In	Out
Auto (Total)	15	15	5	2	20	17
Taxi	0	0	0	0	0	0
Taxi Balanced	0	0	0	0	0	0
Truck	0	0	0	0	0	0
Total	15	15	5	2	20	17
Sat MD	In	Out	In	Out	In	Out
Auto (Total)	13	13	3	3	16	16
Taxi	0	0	0	0	0	0
Taxi Balanced	0	0	0	0	0	0
Truck	0	0	0	0	0	0
Total	13	13	3	3	16	16

Note: 15% linked-trip credit applied to local retail use

**Table H-4
Transportation Planning Factors (Scenario 2)**

Land Use:	<u>Local Retail</u>		<u>Residential</u>		<u>Community Facility</u>		<u>Hotel</u>	
Size/Units:	-51,921 gsf		-77 DU		-1,996 gsf		182 Hotel Rooms	
Trip Generation:	(1)		(1)		(4)		(1)	
Weekday	205		8.075		103.4		9.40	
Saturday	240		9.600		62.1		9.4	
	per 1,000 sf		per DU		per 1,000 sf		per room	
Temporal Distribution:	(1)		(1)		(4)		(1)	
AM	3.0%		10.0%		13.0%		8.0%	
MD	19.0%		5.0%		9.0%		14.0%	
PM	10.0%		11.0%		16.0%		13.0%	
SatMD	10.0%		8.0%		12.0%		9.0%	
	(4)		(3)		(4)		(4)	
Modal Splits:	AM/MD/PM	SAT MD	All Periods		All Periods		AM/MD/PM	SAT MD
Auto	11.0%	8.0%	14.0%		30.0%		18.0%	14.0%
Taxi	0.0%	0.0%	0.0%		2.0%		30.0%	28.0%
Subway	4.0%	7.0%	72.0%		33.0%		41.0%	39.0%
Bus	3.0%	4.0%	5.0%		18.0%		2.0%	2.0%
Walk/Other	82.0%	81.0%	9.0%		17.0%		9.0%	17.0%
	100.0%	100.0%	100.0%		100.0%		100.0%	100.0%
	(2)		(2)		(4)		(2)	
In/Out Splits:	In	Out	In	Out	In	Out	In	Out
AM	50%	50%	20.0%	80.0%	89.0%	11.0%	41%	59.0%
MD	50%	50%	51.0%	49.0%	51.0%	49.0%	68%	32.0%
PM	50%	50%	65.0%	35.0%	48.0%	52.0%	59%	41.0%
Sat MD	50%	50%	50.0%	50.0%	41.0%	59.0%	56%	44.0%
Vehicle Occupancy:	(2)		(3)		(4,5)		(4)	
	AM/MD/PM	SAT MD	All Periods		Wkdy	Sat	AM/MD/PM	SAT MD
Auto	1.50	1.60	1.21		1.50	1.50	2.00	2.20
Taxi	1.50	1.60	1.21		1.50	1.50	2.20	2.70
Truck Trip Generation:	(1)		(1)		(2)		(2)	
	0.35		0.06		0.29		0.1	
	0.04		0.02		0.29		-	
	per 1,000 sf		per DU		per 1,000 sf		per 1,000 gsf	
	(1)		(1)		(2)		(2)	
AM	8.0%		12.0%		3.0%		12.2%	
MD	11.0%		9.0%		11.0%		8.7%	
PM	2.0%		2.0%		1.0%		0.0%	
Sat MD	11.0%		9.0%		0.0%		-	
	In	Out	In	Out	In	Out	In	Out
AM/MD/PM	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Notes:

- (1) Based on data from *City Environmental Quality Review (CEQR) Technical Manual, 2014*.
- (2) Based on data from the *Jamaica Plan Rezoning FEIS, 2007*.
- (3) Based on 2011-2015 American Community Survey Means of Transportation to Work data for Queens Census Tracts 267, 269.01, 269.02, 271, 279, 281, and 283.
- (4) Provided by NYCDOT.
- (5) Based on data from the *East New York Rezoning Proposal FEIS, 2015*.

**Table H-5
Travel Demand Forecast (Scenario 2)**

Land Use:	Local Retail	Residential	Community Facility	Hotel	Total					
Size/Units:	-51,921 gsf	-77 DU	-1,996 gsf	182 Hotel Rooms						
Peak Hour Trips:										
AM	-272	-62	-28	138	-224					
MD	-1,720	-32	-20	240	-1,532					
PM	-906	-68	-34	222	-786					
Sat MD	-1,060	-60	-16	154	-982					
Person Trips:										
AM	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-15	-15	-2	-7	-8	-1	10	15	-15	-8
Taxi	0	0	0	0	0	0	17	24	17	24
Subway	-5	-5	-9	-36	-8	-1	23	33	1	-9
Bus	-4	-4	-1	-2	-4	-1	1	2	-8	-5
Walk/Other	-112	-112	-1	-4	-4	-1	5	8	-112	-109
Total	-136	-136	-13	-49	-24	-4	56	82	-117	-107
MD	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-95	-95	-2	-2	-3	-3	29	14	-71	-86
Taxi	0	0	0	0	0	0	49	23	49	23
Subway	-34	-34	-13	-11	-3	-3	67	31	17	-17
Bus	-26	-26	-1	-1	-2	-2	3	2	-26	-27
Walk/Other	-705	-705	-1	-1	-2	-2	15	7	-693	-701
Total	-860	-860	-17	-15	-10	-10	163	77	-724	-808
PM	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-50	-50	-6	-3	-5	-5	24	16	-37	-42
Taxi	0	0	0	0	0	0	39	27	39	27
Subway	-18	-18	-32	-18	-6	-6	54	37	-2	-5
Bus	-14	-14	-2	-1	-3	-3	3	2	-16	-16
Walk/Other	-371	-371	-4	-2	-3	-3	12	8	-366	-368
Total	-453	-453	-44	-24	-17	-17	132	90	-382	-404
Sat MD	In	Out	In	Out	In	Out	In	Out	In	Out
Auto	-42	-42	-4	-4	-2	-3	12	9	-36	-40
Taxi	0	0	0	0	0	0	24	19	24	19
Subway	-37	-37	-21	-21	-2	-3	34	26	-26	-35
Bus	-21	-21	-2	-2	-1	-2	2	1	-22	-24
Walk/Other	-430	-430	-3	-3	-1	-2	15	12	-419	-423
Total	-530	-530	-30	-30	-6	-10	87	67	-479	-503
Vehicle Trips:										
AM	In	Out	In	Out	In	Out	In	Out	In	Out
Auto (Total)	-10	-10	-2	-6	-5	-1	5	8	-12	-9
Taxi	0	0	0	0	0	0	8	11	8	11
Taxi Balanced	0	0	0	0	0	0	19	19	19	19
Truck	-1	-1	0	0	0	0	0	0	-1	-1
Total	-11	-11	-2	-6	-5	-1	24	27	6	9
MD	In	Out	In	Out	In	Out	In	Out	In	Out
Auto (Total)	-63	-63	-2	-2	-2	-2	15	7	-52	-60
Taxi	0	0	0	0	0	0	22	10	22	10
Taxi Balanced	0	0	0	0	0	0	32	32	32	32
Truck	-1	-1	0	0	0	0	0	0	-1	-1
Total	-64	-64	-2	-2	-2	-2	47	39	-21	-29
PM	In	Out	In	Out	In	Out	In	Out	In	Out
Auto (Total)	-33	-33	-5	-2	-3	-3	12	8	-29	-30
Taxi	0	0	0	0	0	0	18	12	18	12
Taxi Balanced	0	0	0	0	0	0	30	30	30	30
Truck	0	0	0	0	0	0	0	0	0	0
Total	-33	-33	-5	-2	-3	-3	42	38	1	0
Sat MD	In	Out	In	Out	In	Out	In	Out	In	Out
Auto (Total)	-26	-26	-3	-3	-1	-2	5	4	-25	-27
Taxi	0	0	0	0	0	0	9	7	9	7
Taxi Balanced	0	0	0	0	0	0	16	16	16	16
Truck	-1	-1	0	0	0	0	0	0	-1	-1
Total	-27	-27	-3	-3	-1	-2	21	20	-10	-12

Note: 15% linked-trip credit applied to local retail use

V. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area's pedestrian elements, and street network, and the identification of specific locations where the incremental increase in demand may potentially exceed *CEQR Technical Manual* analysis thresholds and, therefore, require a quantitative analysis. As the incremental traffic and pedestrian trips generated by Scenario 1 exceed the *CEQR Technical Manual* thresholds, Level 2 screenings were conducted, and are discussed below.

Traffic

As shown above in Table H-3, Scenario 1 would generate a net total of 17, 64, 37, and 32 vehicle trips during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. As the *CEQR Technical Manual* Level 1 screening threshold of 50 vehicles is exceeded during the weekday midday peak hour, a Level 2 screening is required.

Under Scenario 1, the proposed development would have a vehicular entrance to the parking garage located on Baxter Avenue, a one-way northbound street. As shown in Figure H-2, vehicles traveling to the proposed development would access the site along Baxter Avenue, to the south of the garage entrance, while vehicles leaving the project site would travel along Baxter Avenue to the north of the garage. Therefore, no single intersection is expected to experience an increase of greater than 50 vehicles during any of the peak periods, and a detailed traffic analysis is not warranted as no significant adverse impacts are expected.

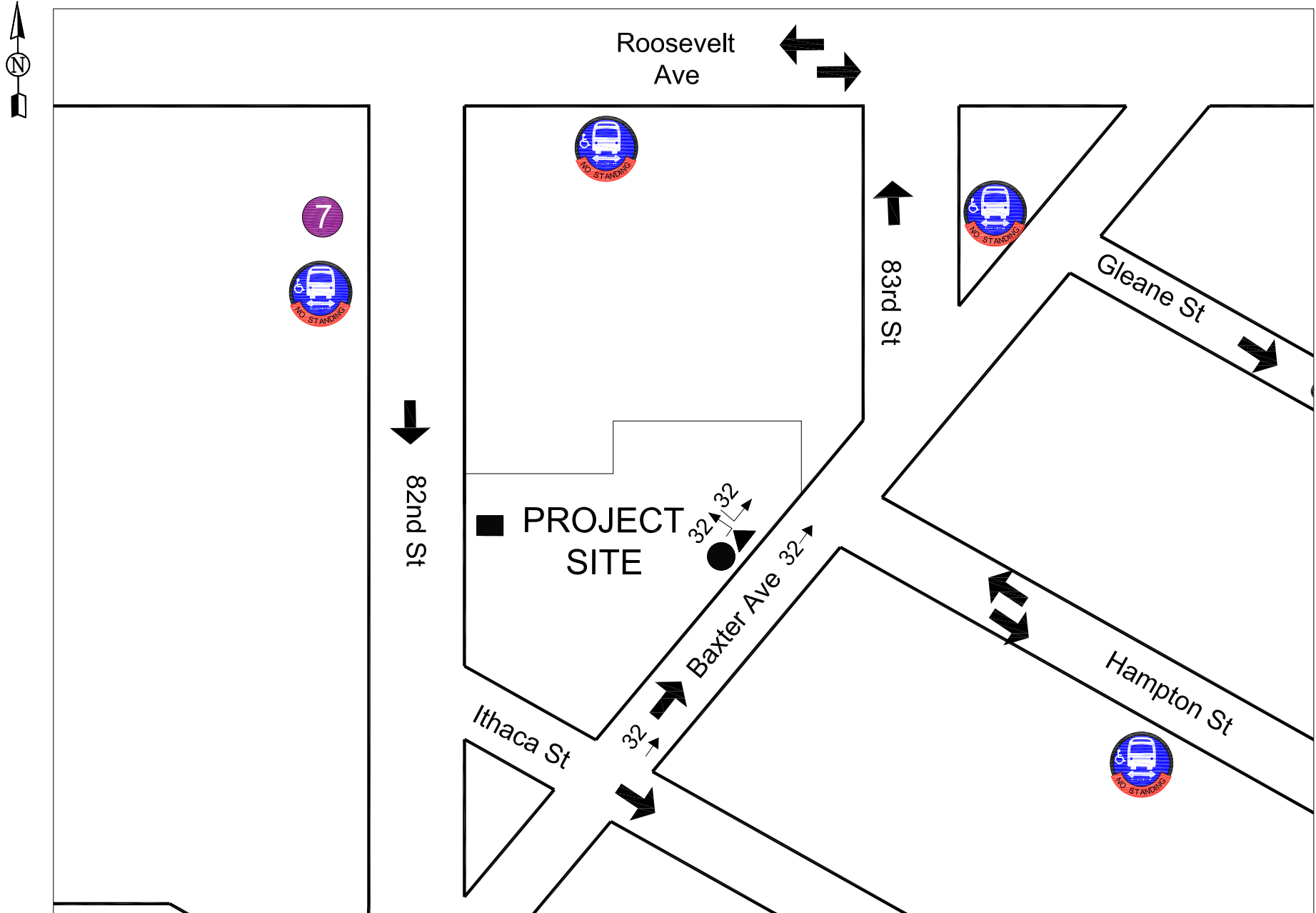
Pedestrians

Many project-generated trips would include a walk component using local sidewalks, street corners, and crosswalks, to access the project site. As shown above in Table H-3, Scenario 1 would generate a net total of 164, 744, 433, and 506 pedestrian trips (including walk-only trips and pedestrians en route to and from subway and bus stops) during the weekday AM, midday, PM, and Saturday midday peak hours, respectively. As the number of project generated pedestrian trips would exceed the 200-trip *CEQR Technical Manual* threshold during the weekday midday, PM, and Saturday midday peak hours, a Level 2 screening is required.

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

The proposed development would have entrances on Baxter Avenue and 82nd Street. The pedestrian entrance for the proposed residential uses would be located along Baxter Avenue, while the commercial component (local retail) would have pedestrian entrances located along both Baxter Avenue and 82nd Street. As shown in Figure H-3, a total of four pedestrian elements, including one sidewalk and three corners, exceed the 200-trip *CEQR Technical Manual* analysis threshold and have been selected for detailed analysis. All four pedestrian elements exceed the threshold during the weekday midday peak hour.

Weekday Midday Incremental Traffic Volumes

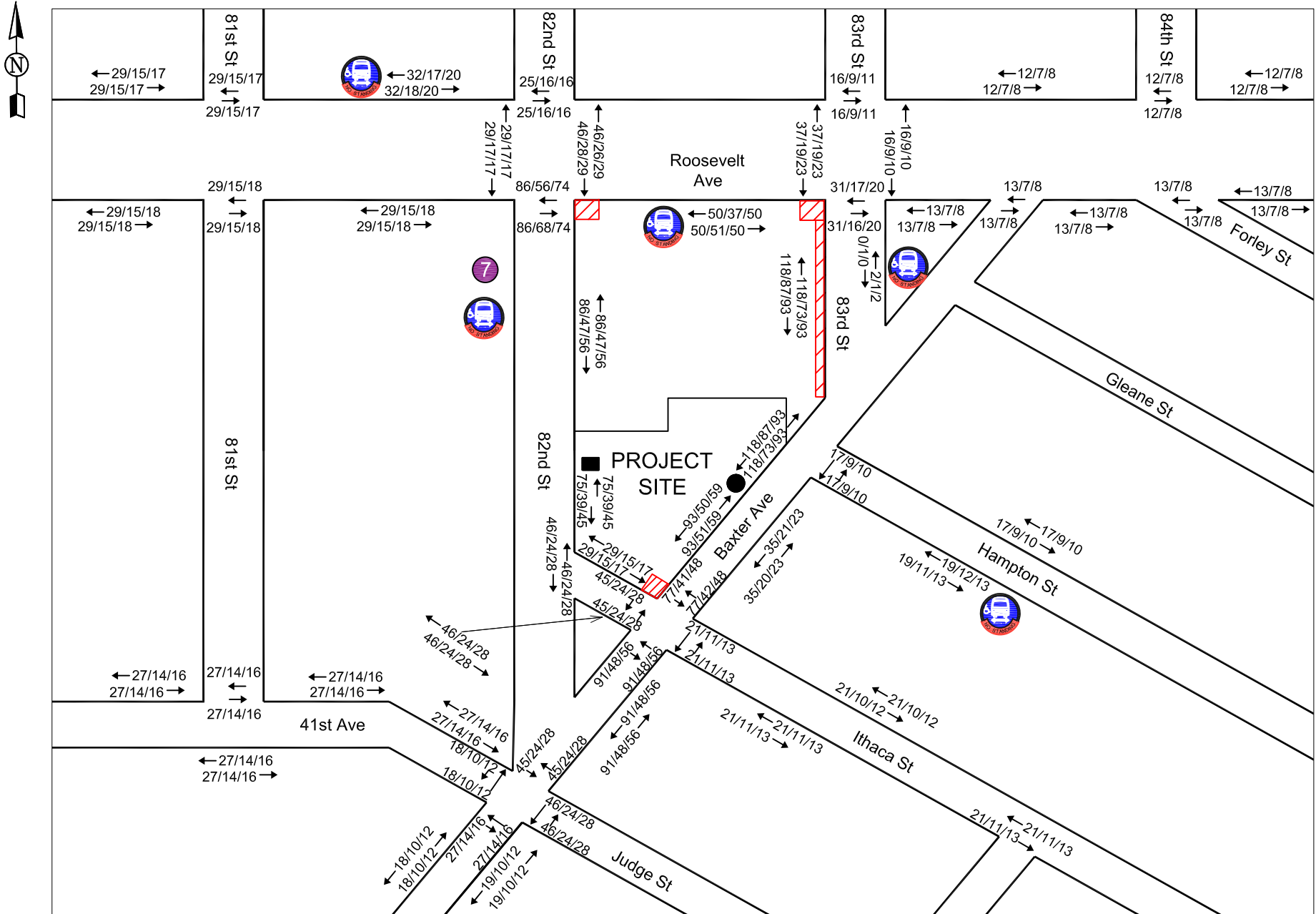


LEGEND:

-  MTA Bus Stop
-  MTA Subway Station
-  Street Direction
-  Proposed Retail Pedestrian Entrance
-  Proposed Residential/Community Facility/Retail Pedestrian Entrance
-  Proposed Vehicular Entrance

32 = Weekday Midday Incremental Traffic Volume

Project Increment Pedestrian Trip Assignment



23/12/14 = Weekday Midday/Weekday PM/Saturday Midday Pedestrian Volumes

LEGEND:

-  MTA Bus Stop
-  MTA Subway Station
-  Proposed Retail Entrance
-  Proposed Residential/Community Facility/Retail Entrance
-  Pedestrian Element Analysis Location

Pedestrian Analysis Locations

Sidewalks:

1. West Sidewalk on 83rd Street between Baxter Avenue and Roosevelt Avenue

Corners:

2. 82nd Street and Roosevelt Avenue – Southeast Corner
3. 83rd Avenue and Roosevelt Avenue – Southwest Corner
4. Ithaca Street and Baxter Avenue – Northwest Corner

VI. TRANSPORTATION ANALYSES METHODOLOGIES

Pedestrians

Analysis Methodology

Data on peak period pedestrian flow volumes was collected along the analyzed sidewalk and corner areas in the vicinity of the rezoning area in May 2017. Peak hours were determined by comparing rolling hourly averages, and the highest 15-minute volumes within the selected peak hours were used for analysis. Based on existing peak pedestrian volumes within the study area, the weekday 12:00 PM to 2:00 PM period was selected for analysis.

Peak 15-minute pedestrian flow conditions during the weekday midday period are analyzed using the *2000 Highway Capacity Manual* methodology and procedures outlined in the *CEQR Technical Manual*. Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a “time-space” analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. Table H-6 defines the LOS criteria for pedestrian crosswalk/corner area and a sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

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

Table H-6
Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions

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

Notes:

Based on average conditions for 15 minutes
 ft²/ped – square feet of area per pedestrian

Source: CEQR Technical Manual

Significant Impact Criteria

Sidewalks

The CEQR Technical Manual impact criteria for a non-CBD location are used to identify significant adverse impacts due to the proposed rezoning. These criteria define a significant adverse sidewalk impact to have occurred under platoon conditions if the average pedestrian space under the No-Action condition is greater than 44.3 square feet/pedestrian (ft²/ped), and the average pedestrian space under the With-Action condition is 40.0 ft²/ped or less (LOS D or worse). If the average pedestrian space under the With-Action condition is greater than 40.0 ft²/ped (LOS C or better), the impact should not be considered significant. If the No-Action pedestrian space is between 6.4 and 44.3 ft²/ped, a reduction in pedestrian space under the With-Action condition should be considered significant based on Table H-7, which shows a sliding-scale that identifies what decrease in pedestrian space is considered a significant impact for a given pedestrian space value in the No-Action condition. If the reduction in pedestrian space is less than the value in Table H-7, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 6.4 ft²/ped, then a reduction in pedestrian space greater than or equal to 0.3 ft²/ped, under the With-Action condition, should be considered significant.

Corner Areas and Crosswalks

For non-CBD areas, CEQR Technical Manual criteria define a significant adverse corner area or crosswalk impact to have occurred if the average pedestrian space under the No-Action condition is greater than 26.6 square feet per pedestrian (ft²/ped) and, under the With-Action condition, the average pedestrian space decreases to 24 ft²/ped or less (LOS D or worse). If the pedestrian space under the With-Action condition is greater than 24 ft²/ped (LOS C or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 26.6 ft²/ped, a decrease in pedestrian space under the With-Action condition should be considered significant based on Table H-8, which shows a sliding-scale that identifies what decrease in pedestrian space is considered a significant impact for a given amount of pedestrian space in the No-Action condition. If the decrease in pedestrian space is less than the value in Table H-8, the impact is not considered significant. If the average pedestrian

space under the No-Action condition is less than 5.1 ft²/ped, then a decrease in pedestrian space greater than or equal to 0.2 ft²/ped should be considered significant.

Table H-7
Impact Criteria for Sidewalks
With Platoon Flow in a Non-CBD Location

No-Action Condition Pedestrian Flow (ft ² /ped)	With-Action Conditions Pedestrian Space Reduction to be Considered a Significant Impact (ft ² /ped)
>44.3	With-Action Condition ≤ 40.0
43.5 to 44.3	Reduction ≥ 4.3
42.5 to 43.4	Reduction ≥ 4.2
41.6 to 42.4	Reduction ≥ 4.1
40.6 to 41.5	Reduction ≥ 4.0
39.7 to 40.5	Reduction ≥ 3.9
38.7 to 39.6	Reduction ≥ 3.8
37.8 to 38.6	Reduction ≥ 3.7
36.8 to 37.7	Reduction ≥ 3.6
35.9 to 36.7	Reduction ≥ 3.5
34.9 to 35.8	Reduction ≥ 3.4
34.0 to 34.8	Reduction ≥ 3.3
33.0 to 33.9	Reduction ≥ 3.2
32.1 to 32.9	Reduction ≥ 3.1
31.1 to 32.0	Reduction ≥ 3.0
30.2 to 31.0	Reduction ≥ 2.9
29.2 to 30.1	Reduction ≥ 2.8
28.3 to 29.1	Reduction ≥ 2.7
27.3 to 28.2	Reduction ≥ 2.6
26.4 to 27.2	Reduction ≥ 2.5
25.4 to 26.3	Reduction ≥ 2.4
24.5 to 25.3	Reduction ≥ 2.3
23.5 to 24.4	Reduction ≥ 2.2
22.6 to 23.4	Reduction ≥ 2.1
21.6 to 22.5	Reduction ≥ 2.0
20.7 to 21.5	Reduction ≥ 1.9
19.7 to 20.6	Reduction ≥ 1.8
18.8 to 19.6	Reduction ≥ 1.7
17.8 to 18.7	Reduction ≥ 1.6
16.9 to 17.7	Reduction ≥ 1.5
15.9 to 16.8	Reduction ≥ 1.4
15.0 to 15.8	Reduction ≥ 1.3
14.0 to 14.9	Reduction ≥ 1.2
13.1 to 13.9	Reduction ≥ 1.1
12.1 to 13.0	Reduction ≥ 1.0
11.2 to 12.0	Reduction ≥ 0.9
10.2 to 11.1	Reduction ≥ 0.8
9.3 to 10.1	Reduction ≥ 0.7
8.3 to 9.2	Reduction ≥ 0.6
7.4 to 8.2	Reduction ≥ 0.5
6.4 to 7.3	Reduction ≥ 0.4
<6.4	Reduction ≥ 0.3

Source: CEQR Technical Manual

Table H-8
Significant Impact Criteria for Corners and
Crosswalks in a Non-CBD Location

No-Action Condition Pedestrian Space (ft ² /ped)	With-Action Condition Pedestrian Space Reduction to be Considered a Significant Impact (ft ² /ped)
> 26.6	With-Action Condition ≤ 24.0
25.8 to 26.6	Reduction ≥ 2.6
24.9 to 25.7	Reduction ≥ 2.5
24.0 to 24.8	Reduction ≥ 2.4
23.1 to 23.9	Reduction ≥ 2.3
22.2 to 23.0	Reduction ≥ 2.2
21.3 to 22.1	Reduction ≥ 2.1
20.4 to 21.2	Reduction ≥ 2.0
19.5 to 20.3	Reduction ≥ 1.9
18.6 to 19.4	Reduction ≥ 1.8
17.7 to 18.5	Reduction ≥ 1.7
16.8 to 17.6	Reduction ≥ 1.6
15.9 to 16.7	Reduction ≥ 1.5
15.0 to 15.8	Reduction ≥ 1.4
14.1 to 14.9	Reduction ≥ 1.3
13.2 to 14.0	Reduction ≥ 1.2
12.3 to 13.1	Reduction ≥ 1.1
11.4 to 12.2	Reduction ≥ 1.0
10.5 to 11.3	Reduction ≥ 0.9
9.6 to 10.4	Reduction ≥ 0.8
8.7 to 9.5	Reduction ≥ 0.7
7.8 to 8.6	Reduction ≥ 0.6
6.9 to 7.7	Reduction ≥ 0.5
6.0 to 6.8	Reduction ≥ 0.4
5.1 to 5.9	Reduction ≥ 0.3
< 5.1	Reduction ≥ 0.2

Source: CEQR Technical Manual

Pedestrian and Vehicular Safety Evaluation

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

VII. PEDESTRIANS

Existing Conditions

As discussed previously in Section V “Level 2 Screening Assessment”, one sidewalk and three corners have been selected for analysis as they are locations where project-generated pedestrian trips are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold during the weekday midday peak hour. As shown previously in Figure H-3, these analyzed pedestrian elements are located along Roosevelt Avenue and Baxter Avenue in the vicinity of the 82nd Street (7) subway station and MTA bus stops. It should be noted that the existing corner area analysis at the northwest corner of Ithaca Street and Baxter Avenue takes into account the sidewalk and corner obstructions due to construction at the project site.

Tables H-9 and H10 show existing average pedestrian space (in square feet per pedestrian) and levels of service at analyzed sidewalk and corners, respectively, while Figure H-4 shows the weekday midday, existing pedestrian volumes. As shown in Tables H-9 and H-10, all analyzed pedestrian elements operate at LOS C or better in all peak hours.

**Table H-9
Sidewalk Analysis – Existing Conditions**

Location	Sidewalk	Total Width (feet)	Effective Width (feet)	Peak Hour Volumes (WK MD)	Pedestrian Space (SFP) (WK MD)	Platoon-Adjusted LOS (WK MD)
83 rd Street btwn Baxter and Roosevelt Avenues	West	10	3.5	340	144.7	B

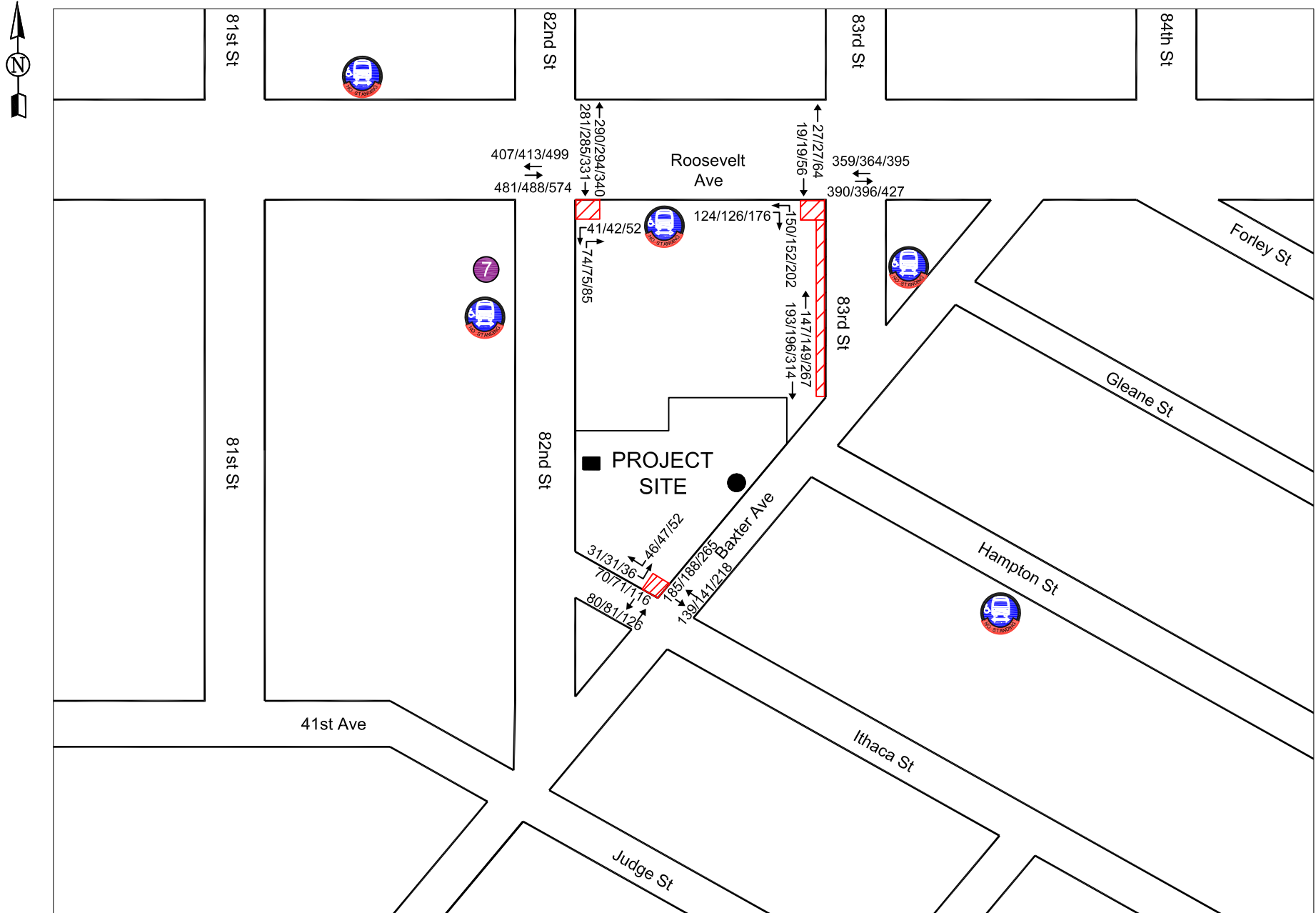
Notes: Methodology based on *CEQR Technical Manual* guidelines

SFP – Square feet per pedestrian.






LOS – Level of Service.

WK MD – Weekday Midday.

Existing/No-Action/ With-Action Pedestrian Volumes



LEGEND:

-  MTA Bus Stop
-  MTA Subway Station
-  Proposed Retail Entrance
-  Proposed Residential/Community Facility/Retail Entrance
-  Pedestrian Element Analysis Location

23/12/14 = Existing/ No-Action/ With-Action Pedestrian Volumes

Table H-10
Corner Area Analysis – Existing Conditions

Location	Corner	Pedestrian Space (SFP) (WK MD)	LOS (WK MD)
82 nd Street & Roosevelt Avenue	SE	136.4	A
83 rd Street & Roosevelt Avenue	SW	36.9	C
Ithaca Street & Baxter Avenue	NW	35.9	C

Notes: Methodology based on *CEQR Technical Manual* guidelines

SFP – Square feet per pedestrian.

LOS – Level of Service.

WK MD – Weekday MIDDAY.

The Future Without the Proposed Action (No-Action)

Increased pedestrian demand due to background growth was added to existing volumes to determine future volumes without the proposed project. An annual compounded background growth rate of 0.25 percent was applied to existing travel demand for the 2017 through 2020 period pursuant to *CEQR Technical Manual* criteria.

Tables H-11 and H-12 show the forecasted No-Action average pedestrian space and LOS along the analyzed sidewalk and corners during the weekday midday peak hour, while Figure H-4 also shows the weekday midday peak hour pedestrian volumes in the 2020 future No-Action conditions. As shown in Tables H-11 and H-12, under No-Action conditions, all analyzed pedestrian elements would continue to operate at LOS C or better. As discussed previously, there are currently obstructions due to construction at the northwest corner of Ithaca Street and Baxter Avenue. However, it was assumed that under the 2020 No-Action condition all obstructions would be removed, as all construction related activities at the project site would be complete.

Table H-11
Sidewalk Analysis – No-Action Condition

Location	Sidewalk	Total Width (feet)	Effective Width (feet)	Peak Hour Volumes (WK MD)	Pedestrian Space (SFP) (WK MD)	Platoon-Adjusted LOS (WK MD)
83 rd Street btwn Baxter and Roosevelt Avenues	West	10	3.5	345	142.6	B

Notes: Methodology based on *CEQR Technical Manual* guidelines

SFP – Square feet per pedestrian.

LOS – Level of Service.

WK MD – Weekday MIDDAY.

Table H-12
Corner Area Analysis – No-Action Conditions

Location	Corner	Pedestrian Space (SFP) (WK MD)	LOS (WK MD)
82 nd Street & Roosevelt Avenue	SE	134.3	A
83 rd Street & Roosevelt Avenue	SW	36.3	C
Ithaca Street & Baxter Avenue	NW	99.6	A

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

The Future With the Proposed Action (With-Action)

As discussed previously, the proposed project is expected to generate a net total of 744 pedestrian trips (including walk-only, subway, and public bus trips) during the weekday midday peak hour (refer to Table H-3). The assignment of these trips to the analyzed pedestrian elements is shown in Figure H-4. These pedestrian volumes were added to the projected No-Action volumes to generate the With-Action pedestrian volumes for analysis. Similar to the No-Action condition, it was assumed that all construction obstructions at the northwest corner of Ithaca Street and Baxter Avenue would be removed under the With-Action condition, as all construction related activities at the project site would be complete.

Tables H-13 and H-14 show the average pedestrian space and levels of service at the analyzed sidewalk and corner areas during the weekday midday peak hour.

Table H-13
Sidewalk Analysis – With-Action Condition

Location	Sidewalk	Total Width (feet)	Effective Width (feet)	Peak Hour Volumes (WK MD)	Pedestrian Space (SFP) (WK MD)	Platoon-Adjusted LOS (WK MD)
83 rd Street btwn Baxter and Roosevelt Avenues	West	10	3.5	581	84.3	C

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

Table H-14
Corner Area Analysis – With-Action Conditions

Location	Corner	Pedestrian Space (SFP) (WK MD)	LOS (WK MD)
82 nd Street & Roosevelt Avenue	SE	112.5	A
83 rd Street & Roosevelt Avenue	SW	27.9	C
Ithaca Street & Baxter Avenue	NW	65.5	A

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

As shown in Tables H-13 and H-14, under the With-Action conditions, all analyzed pedestrian elements would operate at an acceptable LOS C or better in all peak periods and would therefore not exceed *CEQR Technical Manual* thresholds for a significant impact.

VIII. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Study Area High Crash Locations

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

Table H-15 below shows summary crash data for the three-year reporting period between January 1, 2012 and December 31, 2014 that were obtained from DOT. This is the most recent three-year period for which data are available. The table shows the total number of crashes each year and the number of crashes each year involving pedestrians and cyclists at intersections in proximity to the project site where the majority of new vehicular and pedestrian trips would be concentrated.

As shown in Table H-15, no intersections were found to have experienced a total of 48 or more crashes in any one year nor were any intersections found to have experienced five or more pedestrian/bicyclist injury crashes in one year, except for the intersection of 82nd Street and Roosevelt Avenue. In 2012, this intersection experienced four reported pedestrian crashes and one reported bicycle crash. While this is a high crash location, one bicycle crash and no pedestrian crashes were reported in 2013, and one pedestrian crash and no bicycle crashes were reported in 2014. The intersection is signalized and is equipped with pedestrian signals. While this intersection is expected to experience little increase in vehicular traffic, it would experience increases in pedestrian volumes. Safety improvements that could be made to the intersection include augmenting each of the crosswalks with high visibility striping. The

applicant will coordinate with DOT to assess whether or not additional safety measures should be implemented.

Table H-15
Accident Data Summary 2012-2014

Intersection		Pedestrian Injury Accidents			Bicycle Injury Accidents			Total Pedestrian/Bicyclist Injury Accidents			Total Accidents (Reportable + Non-Reportable)		
Roadway 1	Roadway 2	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
82 Street	Ithaca Street	1	0	0	0	0	0	1	0	0	1	0	0
	Roosevelt Avenue	4	0	1	1	1	0	5	1	1	5	3	8
83rd Street	Roosevelt Avenue	1	2	2	1	2	0	2	4	2	3	5	6
	Baxter Avenue	0	0	0	0	0	0	0	0	0	1	0	0
Baxter Avenue	Ithaca Street	1	0	1	0	0	0	1	0	1	2	0	2

Source: NYS DMV/DOT

The *Vision Zero Queens Pedestrian Safety Action Plan*, released in 2015, identifies the study area as a “Priority Area”, Roosevelt Avenue and 82nd Street as “Priority Corridors”, and the intersection at 82nd Street and Roosevelt Avenue as a “Priority Intersection.” The City’s Vision Zero initiative seeks to eliminate all deaths from traffic crashes regardless of whether on foot, bicycle, or inside a motor vehicle. In an effort to drive these fatalities down, DOT and NYPD developed a set of five plans, each of which analyzes the unique conditions of one New York City borough and recommends actions to address the borough’s specific challenges to pedestrian safety. These plans pinpoint the conditions and characteristics of pedestrian fatalities and severe injuries; they also identify priority corridors, intersections and areas that disproportionately account for pedestrian fatalities and severe injuries, prioritizing them for safety interventions. The plans outline a series of recommended actions comprised of engineering, enforcement and education measures that intend to alter the physical and behavioral conditions on city streets that lead to pedestrian fatality and injury.

The *Vision Zero Queens Pedestrian Safety Action Plan* identifies a series of engineering/planning, enforcement, and education/awareness campaign strategies to enhance pedestrian safety along the borough’s Priority Corridors and Priority Intersections. These strategies, some of which have already been implemented, include measures such as reducing the speed limit to 25 miles per hour, expanding exclusive pedestrian crossing time, installing additional lighting around key transit stops, expanding the bicycle network, prioritizing targeted enforcement and deploying speed cameras, and targeting intensive street-level outreach. The Plan also calls for an expansion of exclusive pedestrian crossing time on all Queens Priority Corridors, the addition of exclusive pedestrian crossing time to all feasible Queens Priority Intersections, and the modification of signal timings to reduce off-peak speeding on all feasible Queens Priority Corridors by the end of 2017.

I. INTRODUCTION

This attachment assesses the potential for the Proposed Actions and associated reasonable worst-case development scenario (RWCDs) to result in significant adverse noise impacts. As described in Attachment A, "Project Description," the Proposed Actions are a zoning map and zoning text amendments that would rezone an area encompassing a majority of Block 1493, Lot 15 (the "proposed development site") in the Jackson Heights/Elmhurst neighborhood of Queens Community District 4, affecting approximately 21,648 square feet (sf) of lot area bounded by Baxter Avenue to the east, 82nd Street to the west, and Ithaca Street to the south. To the north, the proposed rezoning area would be bounded by a line parallel to Roosevelt Avenue, extending 180 feet to the south.

The RWCDs associated with the Proposed Actions would facilitate the development of an approximately 203,831 gross square foot (gsf) mixed-use building containing affordable housing, community facility and local retail uses, including up to approximately 147 dwelling units (DUs), approximately 76,375 gsf of local retail located on the first two floors, and approximately 1,996 gsf of community facility space. As part of the proposed development, the affordable housing program would be consistent with either Mandatory Inclusionary Housing (MIH) Option 1 or 2. Option 1 requires 25 percent of the residential floor area be designated as affordable housing units for residents with incomes averaging 60 percent of Area Median Income (AMI) (approximately 30 DUs). Option 2 requires 30 percent of the residential floor area be designated as affordable housing units for residents with incomes averaging 80 percent of AMI (approximately 36 DUs). The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

However, while the Applicant intends on developing the proposed project described above ("Scenario 1"), because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes ("Scenario 2"). The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant's proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms.

As the Proposed Actions would introduce sensitive receptors under both scenarios, a noise analysis was conducted, pursuant to the standards set forth in the 2014 *CEQR Technical Manual*, to determine ambient

noise levels and the level of building attenuation necessary to ensure that interior noise levels of the proposed development satisfy applicable interior noise criteria for the respective uses.

As discussed in Attachment B, "Supplemental Screening," the Proposed Actions would generate vehicular traffic and change traffic patterns and volumes in the general vicinity of the rezoning area. As local vehicular traffic is a major source of ambient noise in the area, this could lead to changes in the ambient noise levels. According to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, if existing noise passenger car equivalent (PCE) values are increased by 100 percent or more due to a proposed action (which is equivalent to an increase of 3.0 dBA or more) a detailed analysis is generally warranted. Conversely, if existing noise PCE values are not increased by 100 percent or more it is likely that the proposed actions would not cause a significant adverse vehicular noise impact, and therefore no further vehicular noise analysis is needed. Noise emissions from the elevated 7 train subway rail tracks immediately north of the rezoning area also have the potential to impact the residential, commercial, and community facility land uses of the With-Action development. Therefore, a train noise analysis was conducted to determine ambient noise levels along the elevated train tracks.

The noise analysis for the Proposed Actions was carried out in compliance with *CEQR Technical Manual* guidelines and consists of three parts:

- (1) A screening analysis to determine whether traffic generated by the Proposed Actions and would have the potential to result in significant noise impacts on existing sensitive receptors;
- (2) A train noise analysis to determine ambient noise levels along the elevated train tracks;
- (3) An analysis to determine the level of building attenuation necessary to ensure that the With-Action developments' interior noise levels satisfy applicable interior noise criteria. This attachment does not include an analysis of mechanical equipment because such mechanical equipment would be designed to meet all applicable noise regulations and, therefore, would not result in adverse noise impacts.

II. PRINCIPAL CONCLUSIONS

In the future with the Proposed Actions, the predicted peak period L₁₀ values at the receptor locations would range from a minimum of 71.3 dBA to a maximum of 76.2 dBA. When compared to the future without the Proposed Actions, the relative increases are well below 3.0 dBA at all receptor locations. Therefore, no significant adverse noise impacts due to action-generated vehicular traffic and existing and future train noise would occur.

To ensure acceptable interior noise levels for any future development at the proposed development site (Block 1493, Lot 15), the noise attenuation specifications would be mandated through the mapping of an (E) designation assigned to the tax lot that makes up this development site in the rezoning area. The requirements of the (E) designation resulting from the noise analysis, outlined in Section VIII of this attachment, state that the required noise attenuation ratings for residential, hotel, and/or community facility uses would be 33 dBA on the northern façade facing the elevated number 7 line, and 28 dBA of attenuation on all other façades. The minimum required composite window/wall attenuation for future

commercial uses would be 5 dBA lower than that of residential uses. In addition, in order to maintain a closed-window condition, an alternate means of ventilation must also be provided.

With the implementation of the attenuation requirements pursuant to the (E) designation on the proposed development site (Lot 15), the Proposed Actions would provide sufficient attenuation to achieve the *CEQR Technical Manual* interior noise level guidelines. Therefore, the Proposed Actions and associated RWCDs would not result in any significant adverse noise impacts related to building attenuation requirements.

II. NOISE FUNDAMENTALS

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

A-Weighted Sound Level (dBA)

In order to establish a uniform noise measurement that simulates people’s perception of loudness and annoyance, the decibel measurement is weighted to account for those frequencies most audible to the human hearing range. This is known as the A-weighted sound level, or “dBA,” and it is the descriptor of noise levels most often used for community noise. As shown in Table I-1, the threshold of human hearing is defined as 0 dBA; very quiet conditions (as in a rural area at night, for example) are approximately 30-40 dBA; levels between 50 dBA and 70 dBA define the range of noise levels generated by normal daily activity; levels above 70 dBA would be considered noisy, and then loud, intrusive, and deafening, as the scale approaches 120 dBA.

TABLE I-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

Note: A 10 dBA increase appears to double the loudness, and a 10 dBA decrease appears to halve the apparent loudness.

Source: *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.

Community Response to Changes in Noise Levels

Table I-2 shows the average ability of an individual to perceive changes in noise. It is important to note that the dBA scale is logarithmic, meaning that each increase of 10 dBA describes a doubling of perceived loudness. Thus, the noise on a platform with a passing subway train, at 100 dBA, is perceived as twice as loud as passing heavy trucks at 90 dBA. For most people to perceive an increase in noise, it must be at least 3 dBA. At 5 dBA, the change will be readily noticeable. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

TABLE I-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 $L_{eq(1)}$) 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 relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, L_{eq} will approximate L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50} . The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at both monitoring locations.

For the purposes of this analysis, the maximum 1-hour equivalent sound level (L_{eq}) has been selected as the noise descriptor to be used in the noise impact evaluation. L_{eq} is the noise descriptor used in the *CEQR Technical Manual* for noise impact evaluation, and is used to provide an indication of highest expected sound levels. L_{10} is the noise descriptor used in the *CEQR Technical Manual* for building attenuation.

The day-night sound level (L_{dn}) is the noise description used in the HUD Noise guidebook that sets exterior noise standards for housing construction projects receiving federal funds. Similar to L_{eq} , the L_{dn} refers to a 24-hour average noise level with a 10 dBA penalty applied to noise levels during the hours between 10:00 PM and 7:00 AM to reflect the greater intrusiveness of noise experienced during these hours. Pursuant to the Federal Transit Authority (FTA) noise impact analysis methodology, the L_{dn} is adopted to assess noise generated by trains.¹ However, because the L_{dn} descriptor tends to average out high hourly values over 24 hours, the *CEQR Technical Manual* recommends that the L_{eq} descriptor be used for purposes of impact analysis.

Applicable Noise Codes and Impact Criteria

CEQR Technical Manual Noise Standards

The NYC Department of Environmental Protection (DEP) has set external noise exposure standards based on L_{10} noise levels. These standards are shown on the following page in Table I-3. Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable.

TABLE I-3: Noise Exposure Guidelines for Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable General External Exposure	Airport ³ Exposure $L_{dn} \leq 60$ dBA	Marginally Acceptable General External Exposure	Airport ³ Exposure $60 < L_{dn} \leq 65$ dBA	Marginally Unacceptable General External Exposure	Airport ³ Exposure $(1) 65 < L_{dn} \leq 70$ dBA, (II) $70 \leq L_{dn}$	Clearly Unacceptable General External Exposure	Airport ³ Exposure $L_{dn} \leq 75$ dBA
1. Outdoor area requiring serenity and quiet ²		$L_{10} \leq 55$ dBA							
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 65$ dBA		$65 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
3. Residence, residential hotel or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		$65 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only ⁴	Note 4	Note 4		Note 4		Note 4		Note 4	

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 amphitheatres, 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 Source: Report "Transit Noise and Vibration Impact Assessment", 2006, Federal Transportation Authority, Office of Planning and Environment.

⁴ External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).
Source: New York City Department of Environmental Protection (adopted policy 1983).

The *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise level. Recommended noise attenuation values for building façades are designed to maintain interior noise levels of 45 dBA or lower for residential uses and 50 dBA or lower for commercial uses, and are determined based on exterior L₁₀ noise levels. The standards shown are based on maintaining an interior noise level for the worst-case hour L₁₀ of 45 dBA or lower. Attenuation requirements are shown in Table I-4.

TABLE I-4: Required Attenuation Values to Achieve Acceptable Interior Noise Levels

Noise level with Proposed Actions	Marginally Unacceptable				Clearly Unacceptable
	70<L ₁₀ ≤73	73<L ₁₀ ≤76	76<L ₁₀ ≤78	78<L ₁₀ ≤80	80<L ₁₀
Attenuation ^A	(I) 28 dB(A)	(II) 31 dB(A)	(III) 33 dB(A)	(IV) 35 dB(A)	36 + (L ₁₀ - 80) ^B dB(A)

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 L₁₀ values greater than 80 dBA.

Source: NYC Department of Environmental Protection, *CEQR Technical Manual*

III. NOISE PREDICTION METHODOLOGY

Proportional Modeling

Proportional modeling was used to determine No-Action and With-Action noise levels at the receptor locations, which are 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, which are counted during the noise recording, are converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

$$FNA\ NL = 10 \log (NA\ PCE/E\ PCE) + E\ NL$$

where:

FNA NL = Future No-Action Noise Level

NA PCE = No-Action PCEs

E PCE = Existing PCEs

E NL = Existing Noise Level

Sound levels are measured in decibels and therefore increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE and if the future traffic volume were increased by 50 PCE to a total of 150 PCE, the noise level would increase

by 1.8 dBA. Similarly, if the future traffic were to increase by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

Analyses for the Proposed Actions and associated RWCDs were conducted for three typical time periods: the weekday AM peak hour (8 AM to 9 AM), the midday peak hour (12 PM to 1 PM), and the weekday PM peak hour (5 PM to 6 PM). These time periods are the hours when the maximum traffic generation is expected and, therefore, the hours when future conditions with the Proposed Actions are most likely to result in maximum noise impacts for the receptor locations.

For the purpose of this analysis, during the noise recording, vehicles were counted and classified. To calculate the No-Action PCE values, an annual background growth rate of 0.5 percent for 2017-2020 was applied to the existing PCE noise values based on counted vehicles². In order to obtain the future With-Action noise PCE values to calculate the With-Action noise levels, a trip generation forecast was created based on the With-Action development of the rezoning area, and existing modal split data for the census tract within which the rezoning area is located.³ For conservative purposes, all of the action-generated trips were assigned to both 82nd Street and Baxter Avenue, exclusive of one another.

Train Noise Modeling

As the rezoning area is located in close proximity to elevated rail tracks, namely the number 7 line of the New York City Subway, noise emissions from train operations have the potential to impact the proposed land uses analyzed in the RWCDs. Pursuant to the guidelines of the *CEQR Technical Manual* Section 332.3 "Train Noise," noise from train operations are calculated using the detailed noise analysis methodology contained in the Federal Transit Administration (FTA) guidance manual, *Transit Noise and Vibration Impact Assessment* (May 2006). Using this methodology, L_{eq} values may be calculated as a function of a number of factors, including the distance between the track and receptor, number of trains, average number of cars per train, train speed, track conditions, whether the track is on grade or on structure. Values calculated using the FTA methodology may either be used directly or, based upon measurements, adjustment factors may be developed to account for site-specific differences between measured and model-predicted values.

The principle sources of rail system noise are the interaction between wheels and rails, the propulsion system of the railcars, breaks, and auxiliary equipment (ventilation and horns). The dominant cause of railcar noise over most of the typical speed range is interaction between the wheels and rails. Generally, noise levels increase with increases in train speed and length. Noise levels are also dependent upon the railway configuration (i.e., whether the track is at-grade, welded rail, joined track, embedded track on grade, or aerial structures with slab track) and whether there are any noise barriers or berms in place. When railcars travel on tight curves, the dominant noise emitted may be a high pitched squeal or screech. This is usually caused by metal wheels sliding on the rail and scraping metal on metal when the train negotiates a curve. The FTA analysis starts with predicting the source noise levels, expressed in terms of Sound Exposure Level (SEL) at a reference distance and a reference speed. These are given in Table 5-1 of the FTA guidance manual, and are reproduced in Table I-5.

² Calculation according to Table 16-4 in the *CEQR Technical Manual*.

³ Based on: Jamaica Plan Rezoning FEIS, 2007; T128. Means of Transportation to Work, Queens Census Tracts 267, 269.01, 269.02, 271, 279, 281, 2813, 2011-15 5-Year ACS.

TABLE I-5: Reference SEL's at 50 feet from Track and 50 mph

Source/ Type		Reference Conditions	Reference SEL (SEL _{ref}), dBA
Commuter Rail, At-Grade	Locomotives	Diesel-electric, 3000 hp, throttle 5	92
		Electric	90
	Diesel Multiple Unit (DMU)	Diesel-powered, 1200 hp	85
	Horns	Within ¼ mile of grade crossing	110
	Cars	Ballast, welded rail	82
Rail Transit		At-grade, ballast, welded rail	82
Transit whistles/ warning devices		Within ¼ mile of grade crossing	93
AGT	Steel wheel	Aerial, concrete, welded rail	80
	Rubber tire	Aerial, concrete guideway	78
Monorail		Aerial straddle beam	82
Maglev		Aerial, open guideway	72

TABLE I-6: Computation of Noise Exposure at 50 feet for Fixed-Guideway General Assessment

LOCOMOTIVES¹ Hourly L _{eq} at 50 ft:	$L_{eq}(h) = SEL_{ref} + 10 \log(N_{loc}) + K \log\left(\frac{S}{50}\right) + 10 \log(V) - 35.6$ <p>Where K = -10 for passenger diesel; = 0 for DMU; = +10 for electric</p>
LOCOMOTIVE WARNING HORNS¹¹ Hourly L _{eq} at 50 ft:	$L_{eq}(h) = SEL_{ref} + 10 \log(V) - 35.6$
RAIL VEHICLES¹¹ Hourly L _{eq} at 50 ft:	$L_{eq}(h) = SEL_{ref} + 10 \log(N_{cars}) + 20 \log\left(\frac{S}{50}\right) + 10 \log(V) - 35.6$ <p>use the following adjustments as applicable:</p> <ul style="list-style-type: none"> + 5 → JOINTED TRACK + 3 → EMBEDDED TRACK ON GRADE + 4 → AERIAL STRUCTURE WITH SLAB TRACK (except AGT & monorail) - 5 → if a NOISE BARRIER blocks the line of sight
TRANSIT WARNING HORNS¹¹ Hourly L _{eq} at 50 ft:	$L_{eq}(h) = SEL_{ref} - 10 \log\left(\frac{S}{50}\right) + 10 \log(V) - 35.6$
COMBINED Hourly L _{eq} at 50 ft:	$L_{eq}(h) = 10 \log \left[10^{\left(\frac{L_{eq}}{10}\right)} + 10^{\left(\frac{L_{eq}}{10}\right)} \right]$
Daytime L _{eq} at 50 ft:	$L_{eq}(\text{day}) = L_{eq}(h) \quad v = v_d$
Nighttime L _{eq} at 50 ft:	$L_{eq}(\text{night}) = L_{eq}(h) \quad v = v_n$
L _{dn} at 50 ft:	$L_{dn} = 10 \log \left[(15) \times 10^{\left(\frac{L_{eq}(\text{day})}{10}\right)} + (9) \times 10^{\left(\frac{L_{eq}(\text{night})}{10}\right)} \right] - 13.8$
N _{loc} = average number of locomotives per train N _{cars} = average number of cars per train S = train speed, in miles per hour V = average hourly volume of train traffic, in trains per hour V _d = average hourly daytime volume of train traffic, in trains per hour = $\frac{\text{number of trains } 7 \text{ am to } 10 \text{ pm}}{15}$ V _n = average hourly nighttime volumes of train traffic, in trains per hour = $\frac{\text{number of trains } 10 \text{ pm to } 7 \text{ am}}{9}$	
¹ Assumes a passenger diesel locomotive power rating at approximately 3000 hp ¹¹ Includes all commuter rail cars, transit cars, AGT and monorail ¹¹¹ Based on FRA's horn noise model (www.fra.dot.gov/downloads/RRDev/hornmodel.xls)	

The reference SEL's are used in the equations of Table 5-2 of the FTA guidance manual (reproduced in Table I-6) to predict the noise exposure at 50 feet. Also shown in Table I-6 are rough estimates of the noise reduction available from wayside noise barriers, the most common noise mitigation measure. After determining the reference levels for each of the noise sources, the next step is to determine the noise exposure at 50 feet expressed in terms of $L_{eq(h)}$ and L_{dn} . The additional data needed include: number of train passbys during the day (defined as 7 AM to 10 PM) and night (defined as 10 PM to 7 AM); peak hour train volume; number of vehicles per train; maximum speed; guideway configuration; noise barrier location; location of highway and street grade crossings, if any. These data are used in the equations in Table I-6 on the following page to obtain adjustment factors to calculate $L_{eq(h)}$ and L_{dn} at 50 feet. Once the $L_{eq(h)}$ at 50 feet from both the northbound and southbound tracks located to the north of the project site were determined, the values were adjusted based on the distance between each track and the project site using the noise exposure vs. distance formulas presented in Section 6.3.1 of the FTA guidance manual. The applicable distance corrections for the tracks, based on their locations between 180 and 230 feet from the project site's northern facade ranged from 5.56 dBA (for the track located closest to the project site) to 6.63 dBA (for the track located furthest from the site). Lastly, the resultant $L_{eq(h)}$ for both the northbound and southbound tracks were added logarithmically to the monitored background value to determine the combined $L_{eq(h)}$ along the project site's northern facade.

IV. EXISTING CONDITIONS

The existing buildings on the site have recently been demolished. The structures that previously occupied the site included a 3- to -4-story brick building that was formerly occupied by a vacant movie theater, a single-story building fronting on Baxter Avenue that contains a dry cleaning facility, and two single- and two-story commercial structures fronting on Baxter and 82nd streets containing a number of retail and office uses (e.g., restaurant, wine and liquor store, produce vendors, etc.). Land uses in the surrounding area include a mix of residential, commercial, and institutional uses. Residential uses in the area are characterized by one- and two-family residences and multi-family elevator buildings. Commercial uses are concentrated along Roosevelt Avenue, to the north of the project site, and 82nd Street, to the west of the project site. Institutional uses in the surrounding area include Elmhurst Hospital, which is located approximately one block to the southwest of the proposed development site. Open space in the surrounding area includes the Manuel De Disos Unanue Triangle to the northeast and Dunningham Triangle to the south.

The development site is located approximately 370 feet southeast of the 82nd Street Station (serving the 7 subway line), and 0.4 miles east of the Roosevelt Avenue-Jackson Heights Station (serving subway lines E, F, M and R). The surrounding area is also served by several New York City Transit (NYCT) local bus routes, including the Q32 providing local service between Jackson Heights, Queens and Penn Station, Manhattan, and the Q33 providing local service between East Elmhurst and Jackson Heights. Additionally, the Q47 bus route provides local service between Marine Air Terminal (LaGuardia Airport – Terminal A) and Glendale, and the Q53 bus route provides local service between Woodside and Rockaway Park.

The portion of the number 7 subway line that runs along Roosevelt Avenue near the development site is an elevated three-track rail line used by subway trains operating between the 34th Street-Hudson Yards station in midtown Manhattan and the Flushing-Main Street station in the northern Queens. This rail line operates with 11-car R188 and R62A trainsets. According to the Metropolitan Transit Authority's (MTA's) Subway Timetable for the number 7 line, effective as of June 25, 2017, between 7 AM and 10 PM on weekdays, it operates approximately 276 northbound (to Flushing-Main Street) and approximately 238

southbound (to 34th Street-Hudson Yards) trains and between 10 PM and 7 AM on weekdays, it operates approximately 60 northbound and approximately 62 southbound trains. Fewer trains are operated on Saturdays, Sundays, and major holidays. In addition, there are several buildings located between the proposed development site and the elevated 7 line tracks, all of which range from two to three stories in height.

Selection of Noise Monitoring/Receptor Locations

In order to collect existing baseline volumes at the rezoning area, existing noise levels were measured at three locations. Due to the proximity of the elevated 7 subway line to the proposed development site, Receptor 1 was located on the northbound platform of the 82nd Street-Jackson Heights Station closest to the proposed development site's northern facade, to measure noise levels of the trains on the elevated track. Receptor 2 was located on the eastern side of 82nd Street along the western boundary of the proposed development site, to measure noise resulting from traffic along 82nd Street. Receptor 3 was located on the western side of Baxter Avenue along the eastern boundary of the proposed development site, to measure noise resulting from traffic along Baxter Avenue. Measurements performed at these three receptor locations were conducted as part of the impact identification and building attenuation analyses. For reference, the noise monitoring receptor locations are identified in Figure I-1 and explained further below:

Receptor Location 1 – Proximate to future northern frontage of the proposed development site (elevated 7 line, along Roosevelt Avenue); approximate midpoint of frontage (approximately 100 feet west of 83rd Street).

Receptor Location 2 – Future western frontage of the proposed development site (82nd Street); approximate midpoint of frontage (approximately 260 feet south of Roosevelt Avenue).

Receptor Location 3 – Future eastern frontage of the proposed development site (Baxter Avenue); approximate midpoint of frontage (approximately 130 feet north of Ithaca Street).

The placement of Receptor 1 was in a location that would be along the northern façades of the proposed development site. This location is expected to experience the maximum impacts from train traffic as this façade would have frontage along the elevated tracks.

Noise emitted from LaGuardia Airport-bound overhead flights was captured during the noise monitoring at both receptor locations for all peak hour analysis periods.

Noise Monitoring

At Receptor 1, as the main source of noise was train-related, pursuant to CEQR guidelines, 1-hour measurements of existing noise levels were performed to establish existing noise levels for three analysis time periods, including: weekday AM peak hour (8AM to 9AM), midday (MD) peak hour (12PM to 1PM), and weekday PM peak hour (5PM to 6PM). At Receptors 2 and 3, as the main source of noise was local traffic, pursuant to CEQR guidelines, 20-minute measurements of existing noise levels were performed during the same three analysis time periods as at Receptor 1. Noise monitoring at Receptor 1 was performed on Tuesday, April 18th, 2017, with a follow-up monitoring at Receptors 2 and 3 on Thursday, June 1st, 2017. On April 18th, 2017, the weather was partly cloudy with temperatures in the high-50s and



Source: NYC Department of City Planning (PLUTO 2016v2), DoITT


Legend



Proposed Development Site



Noise Monitoring Locations

 Elevated 7 Subway Line

 Existing Buildings

an average wind speed of 11 mph. On June 1st, 2017, the weather was partly cloudy with temperatures in the low-70s and an average wind speed of 9 mph.

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 6 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 levels being measured at the receptor locations along 82nd Street, Baxter Avenue, and the 7 line's 82nd Street-Jackson Heights northbound platform. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq} , L_1 , L_{10} , L_{50} , and L_{90} . A windscreen was used during all sound measurements except for calibration. Traffic, elevated track-related, and aircraft flyover noise was captured; noise from other sources (e.g., emergency sirens 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 Monitoring Locations

The noise monitoring results are shown in Table I-6 below. Passing trains were the dominant source of noise at Receptor 1, which was located on the elevated train platform at the 82nd Street-Jackson Heights station. Automobile traffic was the dominant source of noise at Receptors 2 and 3, as they were both positioned on the street level. Overhead flights were moderate sources of noise at each of the receptors, as they are not continuous.

TABLE I-6: Existing Noise Levels (dBA) at Rezoning Area

#1	Noise Receptor Location	Time	L_{max}	L_{min}	L_{eq}	L_1	L_{10}^2	L_{50}	L_{90}	CEQR Noise Exposure Category
1	7 Line 82 nd Street-Jackson Heights Station; elevated northbound platform	AM	95.9	54.1	78.2	89.2	82.9³	66.6	56.0	Clearly Unacceptable
		MD	100.3	55.8	75.7	86.6	79.1 ³	65.8	57.5	
		PM	100.4	56.7	77.9	90.6	81.1 ³	65.2	59.2	
2	East side of 82 nd Street between Roosevelt Avenue and Ithaca Street; street level	AM	81.6	53.5	67.7	76.8	70.8	65.0	59.9	Marginally Unacceptable (I)
		MD	89.3	54.5	69.2	81.7	71.0	63.1	58.6	
		PM	81.5	58.3	66.1	74.2	69.1	64.0	61.1	
3	West side of Baxter Avenue, between Ithaca Street and Hampton Street; street level	AM	89.3	54.4	69.1	81.7	69.8	64.2	60.4	Marginally Unacceptable (I)
		MD	87.0	56.3	68.7	80.1	71.2	63.3	59.3	
		PM	92.1	56.1	66.8	74.3	68.6	63.7	60.2	

Notes: Field measurements were performed by Philip Habib & Associates on April 18, 2017, and June 1, 2017.

¹ Refer to Figure I-1 for receptor locations.

² Highest L₁₀ at each receptor is shown in **bold**.

³ Does not represent adjusted L₁₀ noise level values based on FTA methodology and distance corrections.

As shown in Table 1-6, the highest overall L₁₀ value (82.9 dBA) was measured in the AM peak period at Receptor 1, located approximately 200 feet north of the proposed development site along Roosevelt Avenue. Pursuant to *CEQR Technical Manual* guidelines, this L₁₀ value places Receptor 1 in the “Clearly Unacceptable” CEQR Noise Exposure category, as the noise levels exceed 80.0 dBA under Existing conditions. The highest L₁₀ for Receptor 2 was in the midday peak period (71.0 dBA), placing it in the Marginally Unacceptable (I) Noise Exposure category under the Existing conditions. The highest L₁₀ for Receptor 3 was in the midday peak period as well (71.2 dBA), also placing it in the Marginally Unacceptable (I) Noise Exposure category under Existing conditions.

Using the FTA methodology previously described, existing noise levels emitted from the elevated tracks were calculated for the weekday Daytime (7AM to 10PM) and Nighttime (10PM to 7AM) periods according to the current MTA subway timetable for the number 7 line. This included calculating the L_{eq} SEL values at 50 feet and comparing these to the monitored noise levels at Receptor 1. The forecasted L_{eq} and L₁₀ values for the proposed development site’s northern frontage was 79.4 dBA and 84.0 dBA, respectively, which is slightly above the maximum L_{eq} and L₁₀ based on the monitored value at Receptor 1 (78.2 dBA and 82.9, respectively). Therefore, the train noise modeling methodology forecasted value will be used for further analysis at Receptor 1, while the monitored L_{eq} and L₁₀ noise levels at Receptor 1 will be used as the background variable for the formula used in the FTA methodology.

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

In the future without the Proposed Actions (the No-Action scenario), the proposed rezoning area’s R6/C1-3 zoning would remain in place. The existing zoning permits a maximum 4.8 FAR for community facility use, 2.0 FAR for commercial use, and up to 2.43 FAR for residential use (based on height factor regulations). This could permit as-of-right development of a 9-story, 93'-8" building with approximately 133,749 gsf and no affordable housing. The building would consist of a one-story commercial and community facility base, and 8 residential floors above. The commercial component of the project would consist of approximately 51,921 gsf, located on the cellar and first floor. Approximately 1,996 gsf of community facility space (assumed to art related exhibition space) would be located on the first floor of the proposed development. The residential component would consist of approximately 65,524 gsf, with an estimated 77 DUs. The as-of-right development would also include approximately 130 accessory parking spaces on the sub-cellar level.

As there are no additional anticipated developments expected to generate a significant number of vehicle trips by 2020 within a 400-foot radius of the rezoning area, estimates of peak hour noise levels for the No-Action condition were developed by projecting the trips generated by the RWCDs No-Action development on Lot 15, and by applying an annual background growth rate of 0.5 percent from 2017 to 2020 to the existing traffic levels at Receptors 2 and 3 (refer to Table I-7).

As there are no known significant planned changes in train frequency anticipated by the 2020 Build Year, noise resulting from train traffic on the elevated track in the No-Action condition is expected to remain similar to that in the Existing condition. As in the previous section, the highest predicted No-Action L_{eq} and L₁₀ noise levels for Receptor 1 (78.2 dBA and 82.9 dBA, respectively) from Table I-7 were used as the

background variables for the formula used in the FTA methodology. Therefore, the FTA-forecasted L₁₀ values at Receptor 1 in the No-Action condition would increase to 84.0 dBA.

In the future without the Proposed Actions, noise levels at the rezoning area would be similar to existing conditions, apart from a slight increase associated with increased traffic along 82nd Street and Baxter Avenue. As indicated in Table I-7, noise levels at both receptor locations would remain in their respective CEQR Noise Exposure categories; with noise levels at Receptor 1 (with adjusted L₁₀ noise levels at 84.0 dBA) remaining in the Clearly Unacceptable category, noise levels at Receptor 2 remaining in the Marginally Unacceptable (I) category, and noise levels at Receptor 3 remaining in the Marginally Unacceptable (I) category.

TABLE I-7: 2020 No-Action Noise Levels (dBA) at Rezoning Area

#	Time	Existing PCEs	No-Action PCEs	Existing L _{eq}	No-Action L _{eq}	Change ¹	No-Action L ₁₀	CEQR Noise Exposure Category
1	AM	-	-	78.2	78.2	0.0	82.9 ³	Clearly Unacceptable
	MD	-	-	75.7	75.7	0.0	79.1 ³	
	PM	-	-	77.9	77.9	0.0	81.1 ³	
2	AM	513.0	520.7	67.7	67.7	0.1	70.8	Marginally Unacceptable (I)
	MD	537.0	545.1	69.2	69.2	0.1	71.0	
	PM	387.0	392.8	66.1	66.2	0.1	69.2	
3	AM	702.0	712.6	69.1	69.2	0.1	69.9	Marginally Unacceptable (I)
	MD	375.0	380.7	68.7	68.8	0.1	71.3	
	PM	501.0	508.6	66.8	66.8	0.1	68.7	

Notes: All PCE and noise values are shown for a weekday.

¹ No-Action L_{eq} – Existing L_{eq}.

² Highest L₁₀ at each receptor is shown in **bold**.

³ Does not represent adjusted L₁₀ noise level values based on FTA methodology and distance corrections.

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

Following *CEQR Technical Manual* guidelines, noise levels in the future with the Proposed Actions were calculated for the weekday AM, MD, and PM peak periods in the 2020 analysis year. These calculations account for the additional traffic that would be added as a consequence of the Proposed Actions. As shown in Table I-8, the analysis indicates that the highest L₁₀ noise levels at Receptor 1 will be 82.9 dBA, and it will remain in the Clearly Unacceptable Noise Exposure category; the highest L₁₀ noise levels at Receptor 2 will be 71.3 dBA and it will remain in the Marginally Unacceptable (I) Noise Exposure category; and the highest L₁₀ noise levels at Receptor 3 will be 71.6 dBA and it will remain in the Marginally Unacceptable (I) Noise Exposure category.

As there are no known significant planned changes in train frequency anticipated by the 2020 Build Year, noise resulting from train traffic on the elevated track in the With-Action condition is expected to remain similar to that in the Existing condition. However, to account for the increase in background noise near the elevated tracks in the With-Action condition, the highest predicted With-Action L_{eq} and L₁₀ noise levels for Receptor 1 (78.2 dBA and 82.9 dBA, respectively) from Table I-8 were used as the background variables for the formula used in the FTA methodology. Therefore, the FTA-forecasted L₁₀ value along the elevated 7 line in the With-Action condition would increase to 84.0 dBA for Receptor 1.

In the future with the Proposed Actions, noise levels at the rezoning area would be similar to No-Action conditions, apart from a slight increase associated with increased traffic along 82nd Street and Baxter Avenue. As indicated in Table I-8, noise levels at each receptor location would remain in their respective CEQR Noise Exposure categories; with noise levels at Receptor 1 (L_{10} noise levels at 84.0 dBA) remaining in the Clearly Unacceptable category, noise levels at Receptor 2 remaining in the Marginally Unacceptable (I) category, and noise levels at Receptor 3 remaining in the Marginally Unacceptable (II) category. However, as noted above in Section III, the FTA methodology forecasted value will be used for further analysis along the northern frontage of the rezoning area facing the elevated 7 line, while the monitored L_{eq} and L_{10} noise levels at Receptor 1 will be used as the background variable for the formula used in the train noise modeling methodology. As such, after calculating the increase in background noise near the elevated tracks and applying the distance corrections in the With-Action condition, the highest predicted With-Action L_{10} noise levels at the proposed development site's northern frontage (Receptor 1) will be 76.2 dBA, thus resulting in noise levels at Receptor 1 now falling in the Marginally Unacceptable (III) Noise Exposure category.

TABLE I-8: 2020 With-Action Noise Levels (dBA) at Rezoning Area

#	Time	Existing PCEs	No-Action PCEs	No-Action L_{eq}	With-Action L_{eq}	Change ¹	With-Action L_{10} ²	With-Action L_{10} + Train Noise Level Projections and Distance Corrections ³	CEQR Noise Exposure Category
1	AM	-	-	78.2	78.2	0.0	82.9	76.2	Marginally Unacceptable (III) ⁴
	MD	-	-	75.7	75.7	0.0	79.1	73.0	
	PM	-	-	77.9	77.9	0.0	81.1	72.8	
2	AM	513.0	520.7	67.7	67.8	0.1	70.9	-	Marginally Unacceptable (I)
	MD	537.0	545.1	69.2	69.5	0.2	71.3	-	
	PM	387.0	392.8	66.2	66.4	0.2	69.4	-	
3	AM	702.0	712.6	69.2	69.3	0.1	69.9	-	Marginally Unacceptable (I)
	MD	375.0	380.7	68.8	69.1	0.4	71.6	-	
	PM	501.0	508.6	66.8	67.0	0.2	68.9	-	

Notes: All PCE and noise values are shown for a weekday.

¹ With-Action L_{eq} – No-Action L_{eq} .

² Highest L_{10} at each receptor is shown in **bold**.

³ Highest L_{10} with train noise modeling calculations and distance corrections is shown in **bold**.

⁴ For Receptor 1, CEQR Noise Exposure categories based on highest With-Action L_{10} noise level with train noise modeling calculations and distance corrections

Comparing the future With-Action noise levels with No-Action noise levels, noise levels at Receptor 1 would experience no change; increases in noise levels at Receptor 2 would range from 0.1 dBA to 0.2 dBA; and increases in noise levels at Receptor 3 would range from 0.1 dBA to 0.4 dBA. According to the *CEQR Technical Manual*, increases of these magnitudes would not be perceptible. As these increases are less than the CEQR impact criteria threshold (3.0 dBA), the overall changes to noise levels at the rezoning area as a result of the Proposed Actions would not result in any significant adverse noise impacts.

However, given that Receptors 1, 2, and 3 are anticipated to experience With-Action L_{10} noise levels that exceed 70.0 dBA, a set of required composite window/wall attenuation ratings must be determined for the rezoning area's street frontages. These attenuation requirements will be determined for the residential, community facility, and commercial uses of the RWCDs. The RWCDs development on both projected development sites would have to provide sufficient attenuation in order to achieve the *CEQR*

Technical Manual interior noise level guidelines of 45 dBA or lower for residential/community facility uses and 50 dBA or lower for commercial uses.

VII. WINDOW/ WALL ATTENUATION RATINGS

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Typically, a building façade is composed of the wall, windows, and any vents or louvers for HVAC systems in various ratios of area. Since the proposed buildings would most likely be of masonry construction, which typically provides a high level of sound attenuation, the attenuation requirements for CEQR purposes apply primarily to the windows, but may also represent a composite window/wall attenuation value.

Composite window/wall attenuation can be described in terms of sound transmission class (STC), transmission loss (TL), and outdoor-indoor transmission class (OITC). Although these terms are sometimes used interchangeably, they are unique from each other. Transmission loss refers to how many decibels of sound a façade (wall) or façade accessory (window or door) can stop at a given frequency. The TL for a given construction material varies with the individual frequencies of the noise.

To simplify the noise attenuation properties of a wall, the STC rating was developed. It is a single number that describes the sound isolation performance of a given material for the range of test frequencies between 125 and 4,000 Hz. These frequencies sufficiently cover the range of human speech. Higher STC values reflect greater efficiencies to block airborne sound. HUD uses the STC when identifying the required sound attenuation for a façade.

The OITC is similar to the STC, except that it is weighted more towards the lower frequencies associated with aircraft, rail, and truck traffic. The OITC classification is defined by the American Society of Testing and Materials (ASTM E1332-90 (Reapproved 2003)) and provides a single-number rating that is used for designing a building façade including walls, doors, glazing, and combinations thereof. The OITC rating is designed to evaluate building elements by their ability to reduce the overall loudness of ground and air transportation noise. NYCDEP uses the OITC when identifying the required attenuation for a façade.

VIII. ATTENUATION REQUIREMENTS

As shown earlier in Table I-4, the *CEQR Technical Manual* has set noise attenuation requirements for buildings based on L_{10} noise levels. Recommended composite window/wall attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for residential, community facility uses, and/or hotel uses and 50 dBA or lower for commercial uses, and are determined based on L_{10} noise levels.

All facades that would experience an L_{10} of 70.0 dBA or greater must provide an alternate means of ventilation (AMV) permitting a closed window condition during warm weather. This can be achieved by installing double-glazed windows on a heavy frame for masonry structures or windows consisting of laminated glass, along with AMV such as central air conditioning, through-wall sleeve-fitted air conditioners, packaged terminal air conditioning (PTAC) units, trickle vents integrated into window frames, or other approved means. Where the required window/wall attenuation is above 40 dBA, special design features may be necessary that go beyond the normal double-glazed window and air conditioning.

These may include specially designed windows (e.g., windows with small sizes, windows with air gaps, windows with thicker glazing, etc.) and additional building insulation.

As detailed above and presented in Table I-8, the maximum predicted L₁₀ noise levels are expected to be 76.2 dBA along the rezoning areas northern frontage (facing the elevated 7 line), 71.3 dBA along the rezoning areas western frontage (82nd Street), and 71.6 dBA along the rezoning areas eastern frontage (Baxter Avenue). As shown in Figure I-2, to ensure acceptable interior noise levels for the proposed development on Lot 15 of Block 1493, a minimum of 33 dBA and 28 dBA of attenuation is needed.

The noise attenuation specifications for the rezoning area would be mandated through the assignment of an (E) designation on Lot 15 on Block 1493 (E-463).

The (E) designation text related to noise would be as follows:

Block 1493, Lot 15: To ensure an acceptable interior noise environment, future residential, community facility uses, and/or hotel uses on Block 1493, Lot 15 must provide a closed window condition with a minimum 33 dBA window/wall attenuation on all façades facing the elevated 7 subway line on Roosevelt Avenue and 28 dBA of attenuation on all other facades to maintain an interior noise level of 45 dBA. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning. The minimum required composite building façade attenuation for future commercial uses would be 5 dBA lower than that for residential, hotel and community facility uses.

With the implementation of the attenuation levels outlined above, the Proposed Actions and associated RWCDs 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 noise impacts related to building attenuation requirements.

TABLE I-9: Attenuation Requirements (dBA) for Future Developments Within the Rezoning Area

Site	Façade ¹	Corresponding Receptor	Location	Max. L ₁₀ (dBA)	Required Attenuation ²
Proposed Development Site (Block 1493, Lot 15)	Northern	1	Facing Block 1493, Lots 14 and 33, and elevated number 7 line tracks	76.2	33
	Southern	2	Facing Ithaca Street	71.3	28
	Eastern	3	Facing Baxter Avenue	71.6	28
	Western	2	Facing 82 nd Street	71.3	28

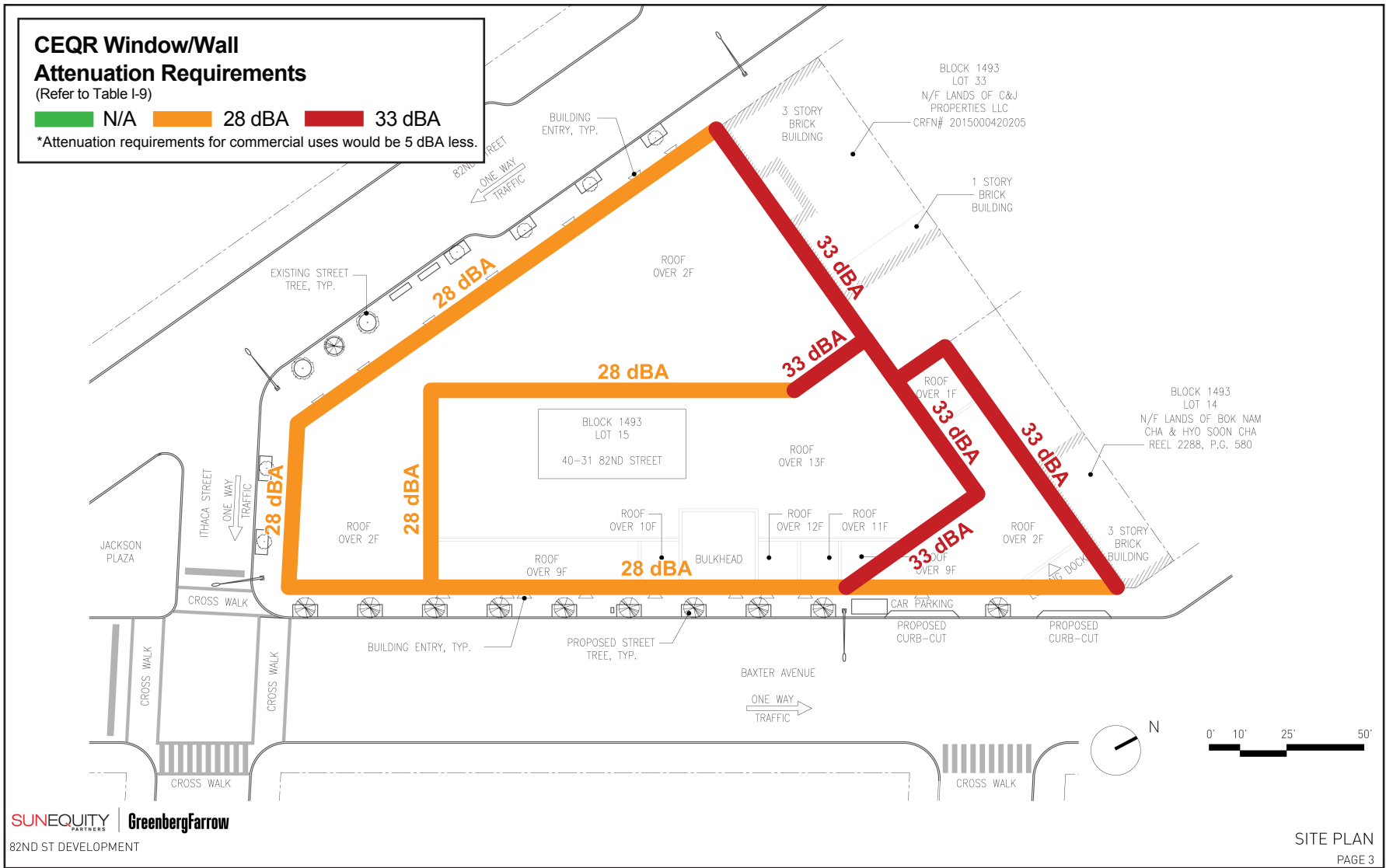
Notes: ¹ Refer to Figure I-2.

² Attenuation values are shown for residential uses; commercial uses would be 5 dBA less.

VIII. 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 would be designed to meet all applicable noise regulations and requirements, and would be designed to produce noise levels which would not result in any significant increases in ambient noise levels.



For Illustrative Purposes Only

Aircraft Noise

The *CEQR Technical Manual* states that an aircraft assessment is warranted if a project contains a receptor within 1 mile of an existing flight path and causes an aircraft to fly through existing or new flight paths over or within 1 mile (horizontal distance parallel to the ground) of a receptor. As the rezoning area is located within close proximity of LaGuardia Airport (approximately 1.5 miles north of the site), the impacts from aircraft noise were considered. While noise resulting from overhead inbound flights into LaGuardia Airport is evident from the rezoning area, the site does not fall within a marginally unacceptable Federal Aviation Administration (FAA) noise exposure contour, as it is outside the DNL 65 dBA (Day-Night Average Sound Level) contour of LaGuardia Airport.⁴ The *CEQR Technical Manual* states that if the rezoning area is located outside an L_{dn} 65 contour or greater, it is not likely that the Proposed Actions would result in a significant adverse noise impact and therefore, no further analysis is necessary.

⁴ Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL 65 dBA is the Federal significance threshold for aircraft noise exposure. FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, Appendix A, paragraph 14.3, page A-61, and paragraph 14.6, pages A-65 and A-66.

I. INTRODUCTION

As discussed in Attachment A, “Project Description,” in the future with the Proposed Actions, the Applicant proposes to construct a new 13-story (145-foot tall) mixed-use building, with a two-story predominantly commercial base and 11 residential floors above. The commercial component of the project would consist of approximately 76,375 gross square feet (gsf) (39,282 zoning square feet (zsf)), located on the cellar, first, and second floors. Approximately 1,996 gsf (1,967 zsf) of community facility space would also be located on the ground floor of the proposed development. The residential component would consist of approximately 125,460 gsf (99,079 zsf), with an estimated 120 dwelling units (DUs). Twenty-five to thirty percent of the residential floor area (equivalent to 30-36 DUs) would be affordable units pursuant to the MIH Program. The proposed development would also include approximately 128 accessory parking spaces on the sub-cellar level.

However, while the Applicant intends on developing the proposed project described above (“Scenario 1”), because the Proposed Actions would result in C4-5X zoning district, an alternate reasonable worst-case development scenario (RWCDs) will be considered for conservative analysis purposes (“Scenario 2”). The proposed C4-5X zoning district would permit certain additional commercial Use Groups currently not permitted. While the existing C1-3 zoning district permits Use Groups 1-6, there are some limitations (e.g. hotels, which are considered Use Group 5, are not permitted in C1-3 districts but are permitted in C4-5X districts). The uses permitted in C4-5X districts that are not permitted in the existing C1-3 zoning district include, in addition to Use Group 5 hotel as noted above, Use Groups 8-10 and 12. This includes, for example, car rental establishments (UG 8), banquet/catering halls (UG 9), movie/TV studios (UG 10) and indoor recreation centers (UG 12). As the Proposed Actions would permit a greater commercial FAR and additional commercial uses than the existing zoning permits, an alternate commercial With-Action RWCDs option will be considered for conservative environmental analysis purposes in addition to the Applicant’s proposed mixed-use development described above. This alternate With-Action scenario assumes that a Use Group 5 hotel containing 93,712 zsf square feet or 4.0 FAR of commercial floor area (98,397 gsf) could be developed within the rezoning area. It is assumed that the hotel would be 120 feet in height and contain up to 182 rooms. The hotel would also include 130 accessory parking spaces located in the cellar level of the building.

According to the guidelines provided in the 2014 New York *City Environmental Quality Review Technical Manual (CEQR Technical Manual)*, air quality analyses are conducted in order to assess the effect of an action on ambient air quality (i.e., the quality of the surrounding air), or effects on the project because of ambient air quality. Air quality can be affected by “mobile sources,” pollutants produced by motor vehicles, and by pollutants produced by fixed facilities, i.e., “stationary sources.” In accordance with the *CEQR Technical Manual* guidance, if a significant and/or major combustion emission source is located within 1,000 feet of a proposed development site, an analysis should be conducted to determine whether the emissions from the source would significantly impact the proposed development.

A land use review using New York City Open Accessible Space Information System (NYC OASIS) interactive mapping software and Google aerial images found that one major combustion emission source is located within 1,000 feet of the proposed development site -- the Elmhurst Hospital Center in Queens, which has

New York State Title V permit, which defines it as major combustion emission source. Emissions from Elmhurst Hospital could potentially impact the proposed development. As such, an analysis was conducted to estimate whether the potential impacts of these emissions would be significant and is provided below.

As the Proposed Actions would result in a development that would include a heating, ventilation, and air conditioning (“HVAC”) system, a HVAC air quality screening analysis is provided below.

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, further analysis of air quality mobile sources from action-generated vehicle trips has been screened out in accordance with 2014 *CEQR Technical Manual* assessment screening thresholds.

II. PRINCIPAL CONCLUSIONS

The proposed development could be affected by emissions released from nearby Elmhurst Hospital. As such, analyses were conducted to determine whether the potential impacts of the pollutants emitted from this facility would significantly impact air quality levels at the proposed development site. In addition, a HVAC screening analysis was conducted to determine whether the proposed project would have the potential to result in significant impacts from HVAC emissions. As discussed below, the Proposed Action would not result in significant adverse air quality impacts.

III. HVAC SCREENING

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 HVAC systems, that can affect surrounding uses. Impacts from boiler emissions associated with a development are a function of fuel type, stack height, minimum distance of the stack on the source building to the closest building of similar or greater height, building use, and the square footage size of the source building. In addition, stationary source impacts can occur when new uses are added near existing or planned emissions stacks, or when new structures are added near such stacks and those structures change the dispersion of emissions from the stacks so that they affect surrounding uses.

The proposed development is Scenario 1, which would be 13-stories (145 feet) tall and 12-stories (120 feet) in Scenario 2. A review of existing land uses within 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 buildings being 11-stories tall (see Figure J-1).

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 nomographic 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 proposed building. The nomographic 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 thirty 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, a distance of 400 feet is used.

Based on Figure 17-3 of the *CEQR Technical Manual*, the HVAC systems for Scenario 1 and Scenario 2 would not result in any air quality impacts to existing sensitive receptors. Emissions from proposed buildings would fall below the applicable curve and would therefore not result in any adverse air quality impacts. As such, no further analysis of emissions from the proposed project on surrounding uses is warranted.

Although no significant adverse impacts from HVAC emissions would result from the Proposed Action, an (E) designation will be assigned to the proposed development site (E-463). The text of the air quality (E) designation for the proposed development site (Block 1493, Lot 15) would be as follows:

Block 1493, Lot 15: Any new development or enlargement on the above-referenced property must ensure that the HVAC stack is located at the height highest tier or at least 120 feet above the grade to avoid any potential significant adverse air quality impacts.

IV. CRITERIA POLLUTANT ANALYSIS OF ELMHURST HOSPITAL EMISSIONS

Emissions

The Elmhurst Hospital Center has a New York State Department of Environmental Conservation (NYSDEC) Title V permit (Permit # 2-6301-00065/0002), which is effective through November 14, 2017. The permit has been modified twice – in 2012 and then in 2015. In 2015, the Hospital replaced existing boilers, installed four new Cleaver Brooks boilers with a design capacity of 35.8 million Btus per hour (MMBtu/hr) each and a total capacity exceeding 140 MMBtu/hr and switched from using fuel oil #6 to less polluting natural gas and fuel oil #2. Emissions from Elmhurst Hospital are released from 162-foot tall 7-foot diameter stack. Exhaust stack has defined coordinates in UTM projection system (594082E and 4511048N).

The Elmhurst Hospital, which contains nine eleven-story tiered buildings, is located at 79-01 Broadway, Elmhurst (Block 1500, Lot 2), approximately 300 feet from the proposed development and 800 feet from actual emission source. The hospital's heating plant is Elmhurst Hospital is a dual-fuel facility that uses natural gas as a primary fuel and fuel oil #2 (with sulfur content of 15 ppm) as a back-up.

The Title V permit regulates two (2) pollutants – oxides of nitrogen (NO_x) (CAS #NY210-00-0) and particulates (CAS #NY075-00-0). Based on federal Reasonably Available Control Technology (RACT), emission limits were established for the hospital for NO_x (for both natural gas and fuel #2 at 0.08 lb/MMBtu) and particulates (at 0.1 lb/MMBtu).

The current Title V permit contains no annual emission rates for nitrogen oxides, particulates, and sulfur dioxide. Therefore, annual emission rates for all pollutants were calculated based on pollutant emission factors, the facility's heat input, and the assumption that facility would operate continuously over an entire year (8,760 hours).

Relevant Criteria Pollutants

The EPA has identified several pollutants, which are known as criteria pollutants, as being of concern nationwide. Applicable to this analysis, the four criteria pollutants associated with natural gas and fuel oil #2 combustion – nitrogen dioxide (NO₂), particulate matter smaller than 10 micron (PM₁₀) and 2.5 microns (PM_{2.5}), and SO₂ were considered.

Applicable Air Quality Standards and Significant Impact Criteria

As required by the Clean Air Act, 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 1-hour and annual NO₂ 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 (NYCDEP) 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 incremental impact criteria.

The current standards and *CEQR* significant impact criteria that were applied to this analysis, together with their health-related averaging periods, are provided in Table J-1.

Table J-1: Applicable National Ambient Air Quality Standards and CEQR Threshold Values

Pollutant	Averaging Period	NAAQS	CEQR Thresholds
NO ₂	1 Hour	0.10 ppm (188 µg/m ³)	--
	Annual	.053 ppm (100 µg/m ³)	--
PM _{2.5}	24 Hour	35 µg/m ³	7.65
	Annual	12 µg/m ³	0.3
PM ₁₀	24 Hour	150 µg/m ³	--
SO ₂	1 Hour	0.75 ppb (196 µg/m ³)	--

NO₂ NAAQS

Nitrogen oxide (NO_x) emissions from gas combustion consist predominantly of nitric oxide (NO) at the source. The NO_x in these emissions are then gradually converted to NO₂, which is the pollutant of concern, in the atmosphere (in the presence of ozone and sunlight as these emissions travel downwind of a source).

The 1-hour NO₂ NAAQS standard of 0.100 ppm (188 ug/m³) is the 3-year average of the 98th percentile of daily maximum 1-hour average concentrations in a year. For determining compliance with this standard, the EPA has developed a modeling approach for estimating 1-hour NO₂ concentrations that is comprised of 3 tiers: Tier 1, the most conservative approach, assumes a full (100%) conversion of NO_x to NO₂; Tier 2 applies a conservative ambient NO_x/NO₂ ratio of 80% to the NO_x 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 NO₂ within the source plume using hourly ozone background concentrations. When Tier 3 is utilized, AERMOD generates 8th highest daily maximum 1-hour NO₂ concentrations or total 1-hour NO₂ concentrations if hourly NO₂ background concentrations are added within the model, and averages these values over the numbers of the years modeled. Total estimated concentrations are generated in the statistical form of the 1-hour NO₂ NAAQS format and can be directly compared with the 1-hour NO₂ NAAQS standard.

Based on New York City Department of Planning (NYCDPC) guidance, Tier 1, as the most conservative 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 1-hour NO₂ NAAQS were estimated, the less conservative Tier 3 approach was applied.

The annual NO₂ standard is 0.053 parts per million (ppm or 100 ug/m³). In order to conservatively estimate annual NO₂ impacts, a NO₂ to NO_x ratio of 0.75 percent, which is recommended by the NYCDEP for an annual NO₂ 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 19.7 ug/m³ was obtained from Queens College 2 monitoring station as the average of the 98th percentile for the latest 3 years of monitoring data collected by the NYSDEC for 2014-2016. As the applicable background value is 19.7 ug/m³, half of the difference between the 24-hour PM_{2.5} NAAQS and this background value is 7.65 ug/m³. As such, a significant impact criterion of 7.65 ug/m³ was used for determining whether the potential 24-hour PM_{2.5} impacts of the proposed development 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 ug/m³ 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.

Dispersion Analysis

A dispersion modeling analysis was conducted to estimate impacts from Elmhurst Hospital Center emissions using the latest version of EPA's AERMOD dispersion model 8.0.0.24 (EPA version 16216r). In accordance with *CEQR* guidance, this analysis was conducted assuming stack tip downwash, urban dispersion surface roughness length, and elimination of calms. AERMOD's Plume Volume Molar Ratio Method (PVMRM) module was utilized for 1-hour NO₂ analysis -- to account for NO_x to NO₂ conversion. Analyses were conducted with and without the effects of wind flow around the proposed building (i.e., with and without downwash) utilizing AERMOD Building Profile Input Program (BPIP) algorithm and both results are reported.

Site Geometry

A digital base map was developed for the AERMOD modeling based on the NYCDPC PLUTO shape file, where tax lot shape closely reflected the proposed building's irregular configuration. For developing

Elmhurst Hospital Center geometry, which includes several buildings, building footprints were obtained from the OASIS map and incorporated into the shape file (Figure J-1).

Meteorological Data

All analyses were conducted using the latest five consecutive years of meteorological data (2012-2016). Surface data was obtained from La Guardia 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 5-year period.

Five years of meteorological data were combined into a single multiyear file to conduct 24-hour PM_{2.5} and 1-hour NO₂ modeling. The PM_{2.5} special procedure which 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 5-year averaged highest values.

Figure J-1: Elmhurst Hospital Center and Exhaust Stack in Relation to the Proposed Development



Background Concentrations

In order to conduct the 1-hour NO₂ Tier 3 analysis, hourly ozone and NO₂ background concentrations were developed from available monitoring data collected at the Queens College 2 station for the 5 consecutive years (2012-2016), and compiled into AERMOD's required hourly emission (NO₂) and concentration (ozone) data format.

The maximum 1-hour NO₂ background concentration from Queens College 2 monitoring station is 64.3 ppb or 121.3 ug/m³, which is the 3-year average of the 98th percentile of daily maximum 1-hour concentrations, and the annual NO₂ background concentration of 16.6 ppb or 31.3 ug/m³ is the maximum annual average for 2014 through 2016.

The 1-hour SO₂ background concentration from Queens College 2 monitoring station is 9.47 ppb or 24.7 ug/m³, which is the 99th percentile of daily maximum 1-hour concentration averaged over the most recent 3 years (2014-2016). The maximum 24-hour PM₁₀ background concentration is 44 ug/m³ and the maximum annual PM_{2.5} background concentration from Queens College 2 monitoring station is 7.5 ug/m³.

Receptor Locations

As the proposed building under Scenario 1 would be taller than the building under Scenario 2, Scenario 1 was analyzed for conservative analysis purposes. The proposed building has an irregular shape and would be setback from the street. However, it was conservatively assumed that building will occupy the entire lot with no setbacks, and receptors were placed around all faces of building in 10-foot increments on all floor levels starting at 10 feet above the ground and extending up to the upper windows level of 140 feet (which were assumed to be 5 feet below roof level). More than 1,200 receptors on the proposed development were considered for the analysis to ensure that the maximum impacts are estimated.

Emission Rates

As mentioned above, emission factors (defined as emissions limits for NO_x and PM₁₀) were obtained from the Title V permit. Because emission factors for PM_{2.5} and SO₂ are not available from the permit, they were obtained from EPA AP-42 "Compilation of Air Pollutant Emission Factors" for commercial boilers with less than 100 MMBtu/hr heat input. Because emission factors for firing fuel oil are higher than those for natural gas combustion in boilers, emission factors for fuel oil #2 were used in the analysis. These emission factors are as follows:

Fuel Oil #2

1. PM_{2.5} – combined emission factor for fuel oil firing in small boilers is 1.52E-02 lb/MMBtu (2.13 lb/10³ gal) which includes 9.2E-03 lb/MMBtu (1.3 lb/10³ gal) emission factor for condensable particles less than 1 micron in diameter (Condensable Particulate Matter for Fuel Oil Combustion, AP-42, Table 1.3-2) and 5.9E-03 lb/MMBtu (0.83 lb/10³ gal) for particles with a size of 2.5 microns from "Cumulative Particle Size Distribution and Size-Specific Emission Factors for Uncontrolled Commercial Boilers Burning Residual or Distillate Oil, AP-42, Table 1.3-7); and
2. SO₂ - emission factor for fuel oil #2 firing in small boilers is 1.52E-02 lb/MMBtu (0.213 lb/10³ gal) being estimated from equation SO₂=142S, where S = sulfur content in fuel oil (0.0015%), "Criteria Pollutant Emission Factors for Fuel Oil Combustion AP-42, Table 1.3-1".

Estimated short-term and annual emission rates for all pollutants based on these emission factors are provided in Table J-2.

Table J-2: Estimated Pollutant Emission Rates with Fuel Oil No. 2 for Title V Permit #2-6301-00065

lb/MMBtu	Boiler Combined Heat Input		Peak Short-term Emission Rates		Annual Emission Rates	
	MMBtu/hr		lb/hr	g/sec	lb/year	g/sec
Permit # 2-6301-00065 1.52E-02 143.2			PM _{2.5} Emission Rates			
			lb/hr	g/sec	lb/year	g/sec
			2.16E+00	2.72E-01	18,942	2.72E-01
Permit # 2-6301-00065 1.0E-01 143.2			PM ₁₀ Emission Rates			
			lb/hr	g/sec	lb/year	g/sec
			1.43E+01	1.80E+00	125,443	1.80E+00
Permit # 2-6301-00065 8.0E-02 143.2			NO _x Emission Rates			
			lb/hr	g/sec	lb/year	g/sec
			1.15E+01	1.44E+00	100,355	1.44E+00
Permit # 2-6301-00065 1.52E-03 143.2			SO ₂ Emission Rates			
			lb/hr	g/sec	lb/year	g/sec
			2.18E-01	2.75E-02	1,909	2.75E-02

Heat input is the combined heat input from four boilers at 35.8 MMBtu/hr each

As stated above, the hospital's exhaust stack height and diameter were obtained from the permit. The stack exit velocity, which is not listed in the permit, was estimated based on values obtained from NYCDEP "CA Permit" database for the corresponding boiler sizes (i.e., rated heat input in million BTUs per hour). Stack exit temperature was assumed to be 300°F (423°K), which is appropriate for boilers. Stack parameters data used in this analysis are provided in Table J-3.

Table J-3: Stack Parameters

Title V Permit	Total Boiler Capacity	Stack Height		Diameter		Temp.	Velocity
	MMBtu/hr	feet	meters	feet	meters	deg K	m/sec
#2-6301-00065	143.2	162	49.38	7	2.134	423	6.4

Modeling parameters used in the analysis are provided in Table J-4.

Table J-4: Modeling Parameters for Analysis

Model	AERMOD (EPA Version 16216r)
Source Type	Point Source
Number of emission points (stacks) considered	One
Surface Characteristic	Urban Area Option
Urban Surface Roughness Length	1
Downwash effect	BPIP Program
Meteorological Data	Preprocessed by the AERMET meteorological preprocessor program by Trinity Consultants, Inc. Yearly meteorological data for 2012-2016 concatenated into single multiyear file for PM _{2.5} modeling, as EPA recommended
Surface Meteorological Data	LaGuardia 2012-2016

Profile Meteorological Data	Brookhaven Station 2012-2016
Pollutant Background Concentrations	Queens College 2 monitoring stations data for 2012-2016
PM _{2.5} 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

Results of the Criteria Pollutant Analysis

Potential impacts of the PM_{2.5}, PM₁₀, NO₂, and SO₂, emissions from the Elmhurst Hospital Center on the proposed development were estimated and compared with the 24-hour/annual PM_{2.5} CEQR significant impact criteria, the 1-hour/annual NO₂, 1-hour SO₂, and 24-hour PM₁₀ NAAQS.

Results of the dispersion analysis are that all impacts are less than both applicable standards and CEQR significant threshold values for 24-hour/annual PM_{2.5}. This is likely due to comparatively sizeable difference between exhaust's plume height (from 162-foot tall stack plus plume rise) and the upper level (windows) receptors on the proposed development (140 feet), where the highest impacts are likely to occur, along with relatively large distance from the emission source to the receptors. These factors are appeared to be sufficient to reduce potential impact -- with and without downwash. The estimated 24-hour/annual PM_{2.5} potential impacts with and without downwash are 2.37 ug/m³ and 1.54 ug/m³, and 0.28 ug/m³ and 0.1 ug/m³, respectively, which are all less than the 7.65 ug/m³ and 0.3 ug/m³ CEQR significant impact criteria. As shown, the annual PM_{2.5} impact with downwash effect is only marginally lower than the CEQR annual significant impact value of 0.3 ug/m³.

The downwash effects from the hospital buildings play a role in the both the maximum estimated concentrations and the point of maximum concentration, with the highest impacts with downwash occurring near ground level and the maximum impacts without downwash occurring at the upper window level of the proposed development.

PM_{2.5}

The results of the PM_{2.5} analysis are that the maximum 24-hour impact is estimated to be 2.37 ug/m³ with downwash and 1.54 ug/m³ without downwash. The maximum annual average impact is estimated to be 0.28 ug/m³ with downwash and 0.1 ug/m³ without downwash. These values are less than the CEQR significant impact criteria of 7.65 ug/m³ and 0.3 ug/m³, respectively. Therefore, PM_{2.5} emissions from the hospital center would not cause a significant air quality impact on the proposed development.

1-Hour NO₂

The Tier 1 NO₂ analysis was sufficient to demonstrate compliance with the 1-hour NO₂ NAAQS. With Tier 1, the NO₂ average background concentration is added to the modeled concentration, and the resulting total 1-hr NO₂ concentration is compared to the 1-hour NO₂ NAAQS. The result of the 1-hour NO₂ analysis is that the 8th highest daily 1-hour NO₂ concentration (with added background hourly concentrations) is 140.6 ug/m³ with downwash and 138.9 ug/m³ without downwash. The maximum average annual NO₂ total concentration is estimated to be 32.4 ug/m³ (with a maximum impact of 1.1 ug/m³ and a background value of 31.3 ug/m³). Both the 1-hour and annual NO₂ concentrations are less than the 1-hour and annual NO₂ NAAQS of 188 ug/m³ and 100 ug/m³, respectively. Therefore, 1-hour and annual NO₂ emissions from the Elmhurst Hospital Center would not significantly impact the proposed development.

1-hour SO₂

The results of the 1-hour SO₂ analysis are that the maximum 1-hour SO₂ impact is estimated to be 0.37 ug/m³ and the total 4th highest daily 1-hour SO₂ averaged concentration, including a background value of 24.7 ug/m³, is estimated to be 25.1 ug/m³, which is less than the 1-hour SO₂ NAAQS of 196 ug/m³. Therefore, 1-hour SO₂ emissions from the Elmhurst Hospital Center would not cause a significant air quality impact on the proposed development.

24-hour PM₁₀

The result of the 24-hour PM₁₀ analysis is that the maximum 24-hour PM₁₀ impact is 15.7 ug/m³. The maximum total 24-hour PM₁₀ concentration, including a background value of 44 ug/m³, is estimated to be 59.7 ug/m³, which is less than the 24-hour PM₁₀ NAAQS of 150 ug/m³. Therefore, the 24-hour PM₁₀ emissions from the Elmhurst Hospital Center would not cause a significant air quality impact on proposed development.

A summary of the results for all averaging time periods, with and without downwash effect, are presented in Table J-5.

Table J-5: Summary of Results of Elmhurst Hospital Center Emissions Analysis

Pollutant	Time Period	Modeled Concentration ⁽¹⁾	Background Conc.	Total Conc.	Evaluation Criteria
		ug/m ³	ug/m ³	ug/m ³	ug/m ³
PM_{2.5}					
PM _{2.5}	24-hr	2.37/1.54		2.37	7.65 (CEQR Criteria)
	Annual	0.28/0.1		0.28	0.3 (CEQR Criteria)
NO₂					
NO ₂	1-hr ⁽²⁾	19.3/17.6	121.3	140.6	188 (NAQQS)
	Annual	1.1/0.41	31.3	32.4	100 (NAAQS)
SO₂					
SO ₂	1-hr	0.37/0.36	24.7	25.1	196 (NAQQS)
PM₁₀					
PM ₁₀	24-hr	15.7/10.2	44	59.7	150 (NAQQS)

Notes:

⁽¹⁾ Modeled concentrations with/without downwash effects.

⁽²⁾ Results with Tier1 analysis

Conclusion of Criteria Pollutant Analysis

The results of the air quality analysis are that there would be no exceedances of the CEQR significant impact criteria or the applicable national air quality standards at the proposed development. As such, the potential air quality impacts of the emissions from the Elmhurst Hospital Center on the proposed development would not be significant.

IV. AIR TOXICS ANALYSIS OF ELMHURST HOSPITAL EMISSIONS

Emissions

In addition to the criteria pollutants (NO₂, SO₂, and PM₁₀/PM_{2.5}) released from the Elmhurst Hospital stack, the 2015 Permit Review Report for the hospital (Permit ID 2-6301-00065/00002 Modification Number 1, dated 05/19/2015) contains a list of hazardous air pollutants (HAPs) that are identified in section 112(b) of the Clean Air Act Amendments of 1990. In the HAPs designations presented under Facility Emissions Summary, each individual hazardous air pollutant is listed under its own specific CAS Number with a corresponding annual emission rate in pounds per year, which is defined as PTE emissions. PTE refers to the Potential to Emit, which is defined as the maximum capacity of facility to emit air contaminant under its physical and operational design. PTE quantity represents the facility-wide emission cap or limitation for each contaminant. The 2015 permit for the hospital, which is based on burning number 6 fuel oil 8,760 hours per year at full load, contains the following annual emission rates for HAPs:

1. Acetaldehyde (CAS No. 000075-07-0) -- 10.96 lb/year
2. Acrolein (CAS No. 000107-02-8) -- 1,322 lb/year
3. Arsenic (CAS No. 007440-38-2) – 101.4 lb/year
4. Benzene (CAS No. 000071-43-2) – 13.34 lb/year
5. Ethylene oxide (CAS No. 000075-21-8) – 40 lb/year
6. Formaldehyde (CAS No. 000050-00-0) – 16.88 lb/year
7. Lead (CAS No. 007439-92-1) – 172.6 lb/year
8. Manganese (CAS No. 007439-96-5) – 65.8 lb/year
9. Mercury (CAS No. 007439-97-6) – 28.4 lb/year
10. Nickel metal and insoluble compounds (CAS No. 007440-02-0) – 2,080 lb/year
11. Polycyclic aromatic hydrocarbons (CAS No. 130498-29-2) – 2.4 lb/year
12. Propylene (CAS No. 000115-07-1) – 36.8 lb/year
13. Toluene (CAS No. 000108-88-3) – 5.84 lb/year
14. VOCs (CAS No. NY998-00-0) – 8,000 lb/year
15. Xylene (CAS No. 001330-20-7) – 4.08 lb/year.

PM₁₀ emissions were omitted from this list because they were already considered in the previous (criteria pollutant) analysis.

Based on this information, an analysis of the HAPs emissions that have the potential to be released from hospital was conducted following the methodologies and procedures prescribed in the *CEQR Technical Manual* and NYSDEC DAR-1 guidance, “Controlling Sources of Toxic Air Pollutants”.

Analysis of Toxic Air Emissions

Toxic air pollutants can be grouped into two categories: carcinogenic air pollutants, and non-carcinogenic air pollutants. These include hundreds of pollutants, ranging from high to low toxicity. While no federal standards have been promulgated for toxic air pollutants, the Division of Air Recourses (DAR) of the New York State Department of Environmental Conservation (NYSDEC) have issued guidance (DAR-1) that outlines the procedure for evaluating the emissions of the toxic pollutants from process operations in the New York State. DAR-1 has established acceptable ambient levels for these pollutants based on human exposure criteria.

In order to evaluate short-term and annual impacts of non-carcinogenic toxic air pollutants, the DAR-1 has established short-term guideline concentrations (SGCs) and annual guideline concentrations (AGCs) for exposure limits. These are maximum allowable 1-hour and annual guideline concentrations, respectively, that are considered acceptable concentrations below which there should be no adverse health effects. Based on SGCs and AGCs, NYSDEC has developed methodologies that can be used to estimate the potential impacts of air toxic pollutants from single or multiple emission sources. If the concentration of any pollutant exceeds its applicable guideline value (either SGC or AGC), a more detailed analysis would be required. Otherwise, no further analysis is warranted.

Of the fifteen HAPs contaminants, six are carcinogenic pollutants – acetaldehyde, arsenic, benzene, ethylene oxide, formaldehyde, and nickel compounds. The highest toxicity contaminants among all listed in the hospital's report are arsenic and nickel compounds, which have the lowest AGC in the DAR-1 database.

Polycyclic Aromatic Hydrocarbons (PAH), No. 11 on the list, is a group of various carcinogenic and non-carcinogenic compounds. However, it has an established AGC value and can be treated as an individual contaminant. VOCs (No. 14 on the list), on the other hand, cannot be considered as an individual contaminant but rather mixture of different chemicals that have no established guideline values. Therefore, this group was substituted by a representative compound (benzene), one of the highly toxic pollutants in the group of VOCs.

Emission Rates under the 2015 Permit

Considering the relatively large quantity of high toxicity HAPs on this list, particularly arsenic (101.4 lb/year) and nickel compounds (2,080 lb/year), it should be emphasized that the potential to emit (PTE) limits for these compounds were established in 2015 -- when the hospital utilized residual oil No.6, which emits larger amounts of air toxic contaminants. For example, the permit has an upper emission limit for NO₂ of 0.3 lb/MMBtu. According to the permit, this limit was valid only until 2014. If 0.3 lb/MMBtu is used as a NO_x limit and if it is assumed that all four boilers of the facility would operate at the maximum capacity of 143.2 MMBtu/hour for entire year (8,760 hours), the maximum NO_x annual emission rate would be 376,330 pounds per year or 188 tons per year. However, with the new NO_x emission limit of 0.08 lb/MMBtu for natural gas and fuel oil #2, which was established for the facility with the installation of the new Cleaver Brooks boilers and the switch from #6 to #2 fuel oil (natural gas will continue to remain primary fuel), the estimated annual NO_x emission rate would be significantly lower at about 100,355 lb/year or 50 tons a year. This is about 3.8 times lower than for fuel oil number 6. Therefore, it is likely that, starting in 2017, the facility emitted less HAPs emissions than the PTE values listed in the 2015 permit. As stated in the DAR-1, if modeled concentrations do not meet the SGC and AGC based on allowable emission rates, the analysis may be performed using the actual emission rates based on the highest of the previous five years of operating data. However, the actual facility operating conditions are not currently known and emission rates for HAPs under the modified permit could not be estimated. Therefore, the following analyses were conducted using the very conservative HAP emission rates that have been previously determined using number 6 fuel oil.

Screening Analysis

For estimating potential impacts from an industrial emission sources of toxic air pollutants, *CEQR* recommends using a screening procedure as a first step in an analysis. This procedure is based on using pre-tabulated pollutant concentration values based on a generic emission rate of 1 gram per second from Table 17-3, "Industrial Source Screen," of the *CEQR Technical Manual* for the applicable averaging time periods. This approach, which can be used to estimate maximum short-term and annual average

concentration values at various distances (from 30 to 400 feet) from an emission source, was initially utilized to assess the potential impacts of the HAP emissions from the hospital.

The distance from the Elmhurst Hospital Center stack to the proposed development is approximately 800 feet, which is beyond the 400 feet maximum distance provided in Table 17-3. It is apparent that at 800 feet distance, the maximum predicted concentration would be significantly lower. However, the maximum distance of 400 feet was used in this analysis as it is the furthest distance that can be considered in this screening analysis. At this distance, based on a 1 gram per second emission rate, the maximum annual concentration is 54 ug/m³.

The annual value obtained using Table 17-3 for an emission rate of 1 gram per second was then multiplied by the actual (conservative) annual emission rate of each HAP to estimate actual individual HAP concentrations. The actual HAP concentrations were then compared to their respective DAR-1 AGC values. These values are provided in Tables J-6 and J-7.

**Table J-6: HAPs Emission Rates and Actual Concentrations
(Based on CEQR Table 17-3)**

No.	Estimated Pollutant Emission Rates				Conc. for 1g/sec Annual ug/m3	Actual Annual Conc. ug/m3
	HAPs	CAS No.	Annual			
			lb/year	g/s	ug/m3	ug/m3
1	Acetaldehyde	75-07-0	10.96	0.00016	54	0.00851
2	Acrolein	107-02-8	1,322	0.01901		1.02679
3	Arsenic	7440-38-2	101.4	0.00146		0.07876
4	Benzene	71-43-2	13.34	0.00019		0.01036
5	Ethylene Oxide	75-21-8	40.00	0.00058		0.03107
6	Formaldehyde	50-00-0	16.88	0.00024		0.01311
7	Lead	7439-92-1	172.6	0.00248		0.13406
8	Manganese	7439-96-5	65.80	0.00095		0.05111
9	Mercury	7439-96-6	28.40	0.00041		0.02206
10	Nickel compounds	7440-02-0	2,080	0.02992		1.61553
11	PAH	130498-29-2	2.40	0.00003		0.00186
12	Propylene	115-07-1	36.80	0.00053		0.02858
13	Toluene	108-88-3	5.84	0.00008		0.00454
14	VOC	NY998-00-0	8,000	0.11507		6.21356
15	Xylene	1330-20-7	4.08	0.00006		0.00317

**Table J-7: Comparison of Estimated HAPs Annual Concentrations to DAR-1 AGC values
(Based on Screening Analysis using CEQR Table 17-3)**

No.		CAS No.	Max Estimated Annual Conc.	NYS DAR-1 AGC	Ratio of Conc./AGC
			ug/m ³	ug/m ³	
1	Acetaldehyde	75-07-0	0.00851	4.50E-01	1.89E-02
2	Acrolein	107-02-8	1.02679	3.50E-01	2.93E+00
3	Arsenic	7440-38-2	0.07876	2.30E-04	3.42E+02
4	Benzene	71-43-2	0.01036	1.30E-01	7.97E-02
5	Ethylene Oxide	75-21-8	0.03107	1.90E-02	1.64E+00
6	Formaldehyde	50-00-0	0.01311	6.00E-02	2.19E-01
7	Lead	7439-92-1	0.13406	3.80E-02	3.53E+00
8	Manganese	7439-96-5	0.05111	5.00E-02	1.02E+00
9	Mercury	7439-96-6	0.02206	3.00E-01	7.35E-02
10	Nickel compounds	7440-02-0	1.61553	4.20E-03	3.85E+02
13	PAH	130498-29-2	0.00186	2.00E-02	9.32E-02
14	Propylene	115-07-1	0.02858	3.00E+03	9.53E-06
15	Toluene	108-88-3	0.00454	5.00E+03	9.07E-07
16	VOC (benzene)	NY998-00-0	6.21356	1.30E-01	4.78E+01
17	Xylene	1330-20-7	0.00317	1.00E+02	3.17E-05

Red shows a potential exceedance of the AGC values, indicating that a detailed analysis is required.

Approach for Estimating Cancer Risk

The highest HAP impacts would likely be associated with the group of carcinogenic HAPs. For assessing carcinogenic pollutants, unit risk factors (based on the toxicity of each pollutant) are used. In the DAR-1, cancer AGCs are defined as chemical concentrations in air that are associated with an estimated excess lifetime human cancer risk of 10-in-a-million (1×10^{-6}). Under the 1990 Clean Air Act, the acceptable cancer risk used by the EPA to make regulatory decisions regarding the need for further air pollution reductions from sources or to identify significant concerns from ambient monitoring data. The acceptable cancer risk used by the DEC's Division of Air Resources (DAR) to make regulatory permitting decisions ranges from 1-in-a-million to 10-in-a-million (1×10^{-5}) level, which is 10 times the cancer AGC. NYSDEC guidance interprets impacts of less than 10 times the AGC for carcinogenic compounds that have a risk-based threshold as allowable, as long as best available control technology is in place. As the hospital has a recently approved valid Title V permit with the required control technology, the threshold of 10-in-a-million is used for this analysis.

Because DAR-1 annual guideline values for carcinogenic pollutants are compiled on ten-per-million base, the unit risk factors are already incorporated in these values and annual concentrations compared directly to the AGC values.

Results of Screening Analysis

The results of CEQR screening analysis, using PTE-based emission rates for number 6 fuel oil and a source-receptor distance of 400 feet, are that of the fifteen HAPs considered, the annual concentrations for arsenic and nickel are greater than their respective AGC values (i.e., the emissions from the hospital of these contaminants have the potential to significantly impact the proposed development). Therefore, a detailed analysis was conducted.

Detailed Analysis with AERMOD

A detailed HAPs analysis using the EPA AERMOD dispersion model was conducted using actual stack locations and distances to the proposed project (i.e., 800 feet), and the same stack parameters, building dimensions, modeling options and meteorological data as those used in the HVAC analysis. AERMOD was run using a generic emission rate of 1 gram per second, and the predicted annual concentration for 1 gram per second emission rate was then multiplied by the actual emission rate of each HAP to arrive at the actual concentration for each HAP.

Results of Detailed Analysis

Results of the detailed analysis are provided in Tables J-8 and J-9.

**Table J-8: Estimated HAPs Actual Concentrations
(Based on Detailed Modeling using the AERMOD Model)**

No.	HAPs	CAS No.	Annual	Annual	Conc. for 1g/sec Annual	Actual Annual Conc.
			lb/year	g/s		ug/m3
1	Acetaldehyde	75-07-0	10.96	0.00016	0.38	0.00006
2	Acrolein	107-02-8	1,322	0.01901		0.00723
3	Arsenic	7440-38-2	101.4	0.00146		0.00055
4	Benzene	71-43-2	13.34	0.00019		0.00007
5	Ethylene Oxide	75-21-8	40.0	0.00058		0.00022
6	Formaldehyde	50-00-0	16.88	0.00024		0.00009
7	Lead	7439-92-1	172.6	0.00248		0.00094
8	Manganese	7439-96-5	65.8	0.00095		0.00036
9	Mercury	7439-96-6	28.4	0.00041		0.00016
10	Nickel compounds	7440-02-0	2,080	0.02992		0.01137
11	PAH	130498-29-2	2.4	0.00003		0.00001
12	Propylene	115-07-1	36.8	0.00053		0.00020
13	Toluene	108-88-3	5.84	0.00008		0.00003
14	VOC	NY998-00-0	8,000	0.11507		0.04373
15	Xylene	1330-20-7	4.08	0.00006		0.00002

**Table J-9: Comparison of Estimated Annual HAPs Concentration to DAR-1 AGC values
(Based on Detailed Modeling using the AERMOD Model)**

No.	HAPs	CAS	Max Estimated Annual	NYS DAR-1	Ratio of
			Conc.	AGC	Conc./AGC
			ug/m ³	ug/m ³	
1	Acetaldehyde	75-07-0	0.00006	4.50E-01	1.33E-04
2	Acrolein	107-02-8	0.00723	3.50E-01	2.06E-02
3	Arsenic	7440-38-2	0.00055	2.30E-04	2.41E+00
4	Benzene	71-43-2	0.00007	1.30E-01	5.61E-04
5	Ethylene Oxide	75-21-8	0.00022	1.90E-02	1.15E-02
6	Formaldehyde	50-00-0	0.00009	6.00E-02	1.54E-03
7	Lead	7439-92-1	0.00094	3.80E-02	2.48E-02
8	Manganese	7439-96-5	0.00036	5.00E-02	7.19E-03
9	Mercury	7439-96-6	0.00016	3.00E-01	5.17E-04
10	Nickel compounds	7440-02-0	0.01137	4.20E-03	2.71E+00
11	PAH	130498-29-2	0.00001	2.00E-02	6.56E-04
12	Propylene	115-07-1	0.00020	3.00E+03	6.70E-08
13	Toluene	108-88-3	0.00003	5.00E+03	6.38E-09
14	VOC (benzene)	NY998-00-0	0.04373	1.30E-01	3.36E-01
15	Xylene	1330-20-7	0.00002	1.00E+02	2.23E-07

The result of the detailed analysis is that the estimated annual concentrations of all HAPs are less than 10 in a million, indicating that there is no potential for a significant impact. In addition, these values are conservative in that they are based on the assumption that the hospital's boilers are operating at full load 8,760 hours per year and burning number 6 fuel oil.

As previously discussed, switching from number 6 fuel oil to natural gas as the primary fuel on an annual basis, as the hospital did in 2017, substantially reduced all HAP emissions -- particularly the arsenic and nickel emission rates. Based on EPA's AP-42, emission factors for arsenic and nickel are more than orders of magnitude lower for natural gas combustion than for fuel oil number 6 combustion. As such, the annual concentrations for arsenic and nickel under current (post 2017) operating conditions would therefore be much less than the values estimated. Therefore, no significant impacts are anticipated from HAPs emissions released from Elmhurst Hospital.

V. CONCLUSION

Based on results of the dispersion analyses, HAPs emissions which have the potential to be released from the Elmhurst Hospital stack would not have the significant impact on the proposed development. As such the potential air quality impacts of the Proposed Action are not significant.

APPENDIX A
NEW YORK CITY LANDMARKS PRESERVATION COMMISSION
ENVIRONMENTAL REVIEW LETTER

ENVIRONMENTAL REVIEW

Project number: DEPARTMENT OF CITY PLANNING / 18DCP045Q

Project:

Address: 40-31 82 STREET, **BBL:** 4014930015

Date Received: 10/26/2017

No architectural significance

No archaeological significance

in radius Designated New York City Landmark or Within Designated Historic District

in radius Listed on National Register of Historic Places

in radius Appears to be eligible for National Register Listing

May be archaeologically significant; requesting additional materials

Comments:

Within the study area: Jackson Heights HD, LPC and S/NR listed; Primary School 89, 85-28 Britton Ave., S/NR eligible.

Gina Santucci

10/27/2017

SIGNATURE

Gina Santucci, Environmental Review Coordinator

DATE

File Name: 32309_FSO_GS_10272017.doc