101 Fleet Environmental Assessment Statement

CEQR # 19DCP069K



Lead Agency:
New York City Planning Commission (CPC)

Prepared for:
Fleet Center, Inc.

Prepared by:
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June 13, 2019

101 Fleet

Environmental Assessment Statement

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EAS FORM

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

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

Part I: GENERAL INFORMATION

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

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

2. *Project Name* 101 Fleet Place

3. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency)	BSA REFERENCE NUMBER (if applicable)
19DCP069K	
ULURP REFERENCE NUMBER (if applicable)	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA)
180524ZMK 180525ZRK	

4a. *Lead Agency Information*			**4b. *Applicant Information***		
NAME OF LEAD AGENCY New York City Department of City Planning (DCP)			NAME OF APPLICANT Fleet Center Inc.		
NAME OF LEAD AGENCY CONTACT PERSON Olga Abinader, Acting Director, EARD			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON Benny Beaiker		
ADDRESS 120 Broadway, 31st Floor			ADDRESS c/o The Leser Group Ltd., 1491 47th Street		
CITY New York	STATE NY	ZIP 10271	CITY Brooklyn	STATE NY	ZIP 11219
TELEPHONE 212-720-3493	EMAIL oabinad@planning.nyc.gov		TELEPHONE 718-705-6111	EMAIL benny@thelesergroup.com	

5. *Project Description*

The applicant, Fleet Center Inc., is seeking a series of discretionary actions from the New York City Planning Commission (CPC) to faciliate the development of Brooklyn Block 2061, Lot 100 with a commercial office development (the "Proposed Project"). Specifically, the applicant is requesting the following:

(1) A zoning map amendment, which would rezone the rezoning area (comprising the applicant-owned Lot 100 in addition to portions of adjacent Lots 80 and 110) from an R6 district to a C6-4 district. The zoning map amendment would increase the permitted floor area ratio (FAR) in the rezoning area, allowing for the additional development of commercial uses than could be provided under existing conditions.

(2) A zoning text amendment, which would designate the rezoning area as a Mandatory Inclusionary Housing (MIH) Area, which would require the construction of permanently affordable residential units in the rezoning area, if developed with residential uses. While the Proposed Project, as currently contemplated, would not include a residential component, given the residential density increase proposed, MIH would be mapped in accordance with City policy. The zoning text amendment would also amend ZR Article X, Chapter 1, Appendix E to update the boundary maps of the Special Downtown Brooklyn (DB) District to include the entirety of the rezoning area.

Under the With-Action scenario, the requested zoning map and text amendments would be approved, allowing the applicant to construct the Proposed Project. The Proposed Project would be comprised of a new 14-story (196-foot-tall) commercial office building containing 209,354 gsf of floor area. The Proposed Project would maximize the permitted commercial FAR for the development site (10.0).

Although the applicant is proposing a commercial project, as the proposed actions would increase the permitted residential density on the development site, a second reaonable-worst case development scenario (RWCDS) (the "Alternate Residential RWCDS") is being analyzed to encompass all potential environmental impacts that could occur as a result of the proposed actions. The Alternate Residential RWCDS maximizes the potential residential FAR of 12.0.

Project Location

BOROUGH Brooklyn	COMMUNITY DISTRICT(S) 2	STREET ADDRESS 101 Fleet Place
TAX BLOCK(S) AND LOT(S) Block 2061, Lot 100		ZIP CODE 11201

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS East side of Fleet Place midblock between Willoughby Street and Myrtle Avenue

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R6 & R7-1/C2-4 (DB) | ZONING SECTIONAL MAP NUMBER 16c

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

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

☐ CITY MAP AMENDMENT	☐ ZONING CERTIFICATION	☐ CONCESSION
☒ ZONING MAP AMENDMENT	☐ ZONING AUTHORIZATION	☐ UDAAP
☒ ZONING TEXT AMENDMENT	☐ ACQUISITION—REAL PROPERTY	☐ REVOCABLE CONSENT
☐ SITE SELECTION—PUBLIC FACILITY	☐ DISPOSITION—REAL PROPERTY	☐ FRANCHISE
☐ HOUSING PLAN & PROJECT	☐ OTHER, explain:	

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

***Board of Standards and Appeals*:** ☐ YES ☒ NO

☐ VARIANCE (use)

☐ VARIANCE (bulk)

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

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

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

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

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

☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC)

☐ LANDMARKS PRESERVATION COMMISSION APPROVAL

☐ OTHER, explain:

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

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

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

☒ SITE LOCATION MAP ☒ ZONING MAP ☒ SANBORN OR OTHER LAND USE MAP

☒ TAX MAP ☐ FOR LARGE AREAS OR MULTIPLE SITES, A GIS SHAPE FILE THAT DEFINES THE PROJECT SITE(S)

☒ PHOTOGRAPHS OF THE PROJECT SITE TAKEN WITHIN 6 MONTHS OF EAS SUBMISSION AND KEYED TO THE SITE LOCATION MAP

Physical Setting (both developed and undeveloped areas)

Total directly affected area (sq. ft.): 34,195 sf | Waterbody area (sq. ft) and type: 0 sf

Roads, buildings, and other paved surfaces (sq. ft.): 34,195 sf | Other, describe (sq. ft.): 0 sf

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): Proposed Project: 209,354 gsf; Alternate Residential RWCDS: 258,904 gsf

NUMBER OF BUILDINGS: 1

GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): Proposed Project: 209,354 gsf; Alternate Residential RWCDS: 258,904 gsf

HEIGHT OF EACH BUILDING (ft.): Proposed Project: 196'; Alternate Residential RWCDS: 380'

NUMBER OF STORIES OF EACH BUILDING: Proposed Project: 14 stories; Alternate Residential RWCDS: 34 stories

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

If "yes," specify: The total square feet owned or controlled by the applicant: 19,388 sf

The total square feet not owned or controlled by the applicant: 13,659 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: 20,073 sq. ft. (width x length) VOLUME OF DISTURBANCE: TBD cubic ft. (width x length x depth)

AREA OF PERMANENT DISTURBANCE: TBD 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.)	Proposed Project: 0 Alternate Residential RWCDS: 258,904 gsf	Proposed Project: 209,354 gsf Alternate Residential RWCDS: 0	0 sf	0 sf
Type (*e.g.,* retail, office, school)	Proposed Project: 0 Alternate Residential RWCDS: 259 units	Proposed Project: commercial office Alternate Residential RWCDS: None	0 sf	0 sf

Does the proposed project increase the population of residents and/or on-site workers? ☒ YES ☐ NO

If "yes," please specify:

NUMBER OF ADDITIONAL RESIDENTS:
Proposed Project: 0
Alternate Residential RWCDS: +521

NUMBER OF ADDITIONAL WORKERS:
Proposed Project: +800
Alternate Residential RWCDS: -27

Provide a brief explanation of how these numbers were determined: Residents based on average household size of 2.01 for Brooklyn CD 2 (2010 Census). With-Action worker estimates calculated based on 1 employee/25 DUs, 1 employee/250 sf of commercial office space, and 1 employee/25 DUs and reflect increment over No-Action (assuming 1 employeer per 450 sf of community facility floor area)

Does the proposed project create new open space? ☐ YES ☒ NO If "yes," specify size of project-created open space: N/A 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: N/A

9. *Analysis Year* CEQR Technical Manual Chapter 2

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2021

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 24

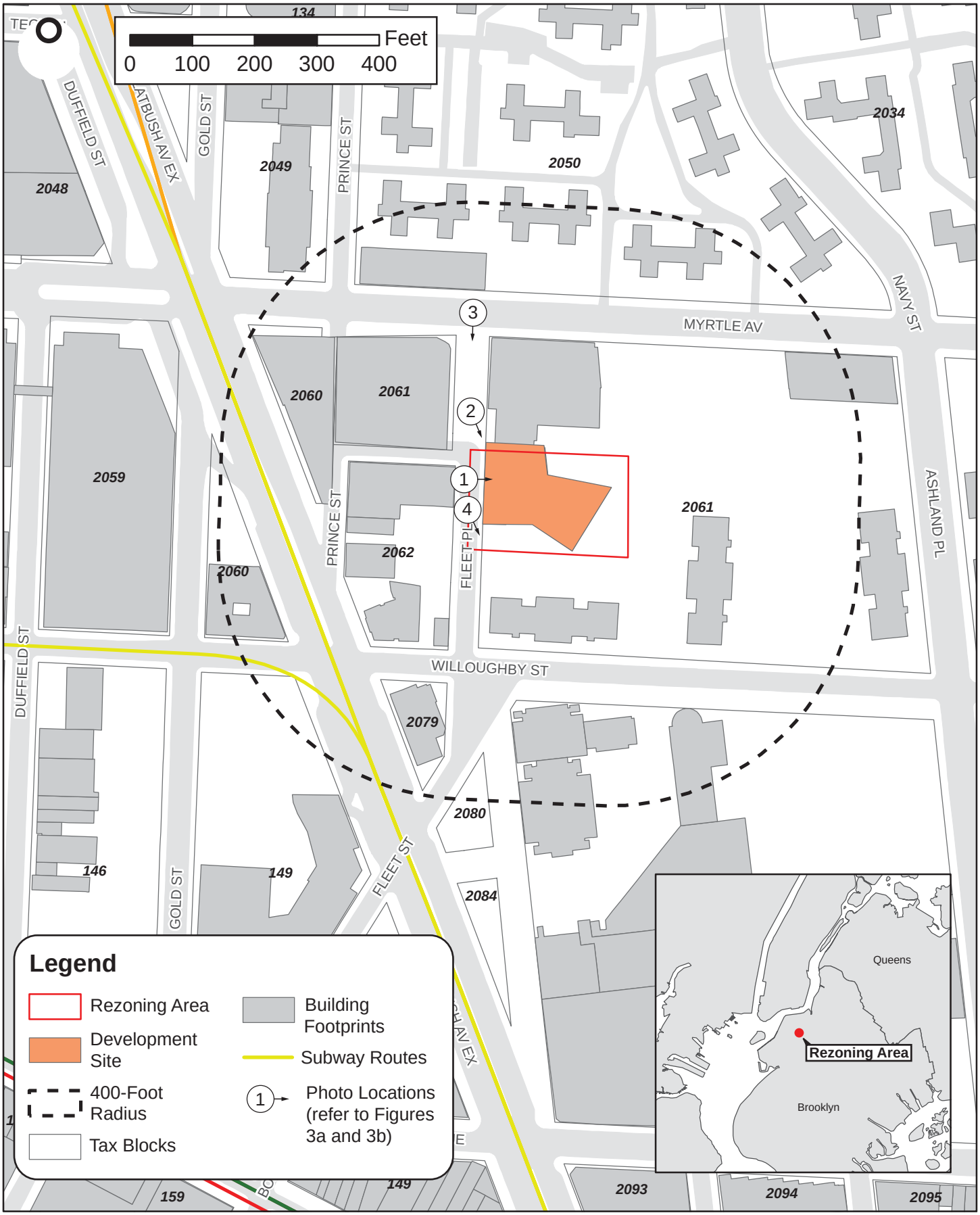
WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? ☒ YES ☐ NO IF MULTIPLE PHASES, HOW MANY?

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:

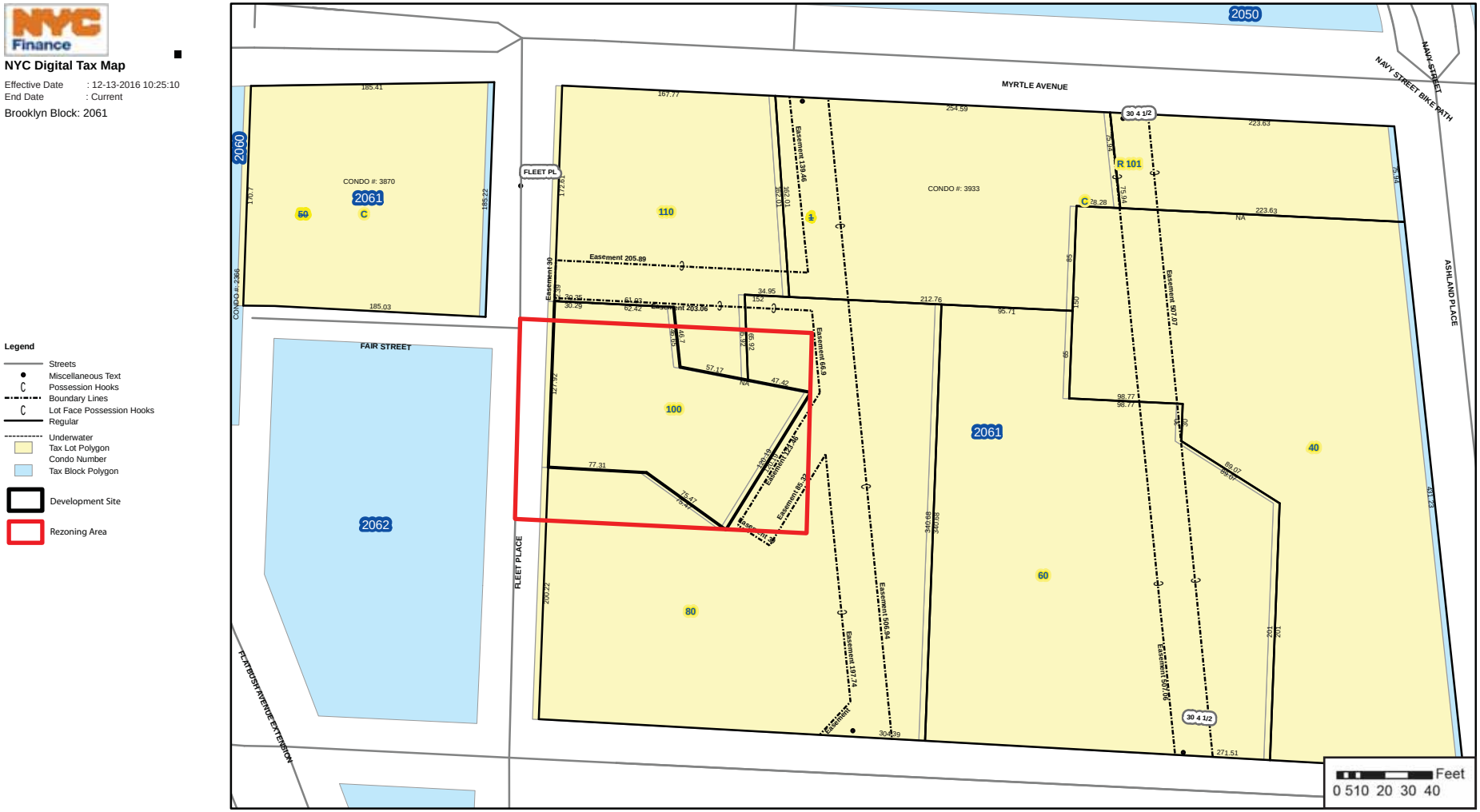
10. *Predominant Land Use in the Vicinity of the Project* (check all that apply)

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

Figure 1
Project Location



Source: DoITT; NYCDCP



101 Fleet Place

Figure 2
Tax Map

Rezoning Area Photos

(refer to Figure 1 Photo Key)



1. View east from Fleet Place of the existing Duffield Children's Center.



2. View southeast from Fleet Place of the existing Duffield Children's Center.



3. View south from intersection of Fleet Place and Myrtle Avenue of existing area around site.

Rezoning Area Photos

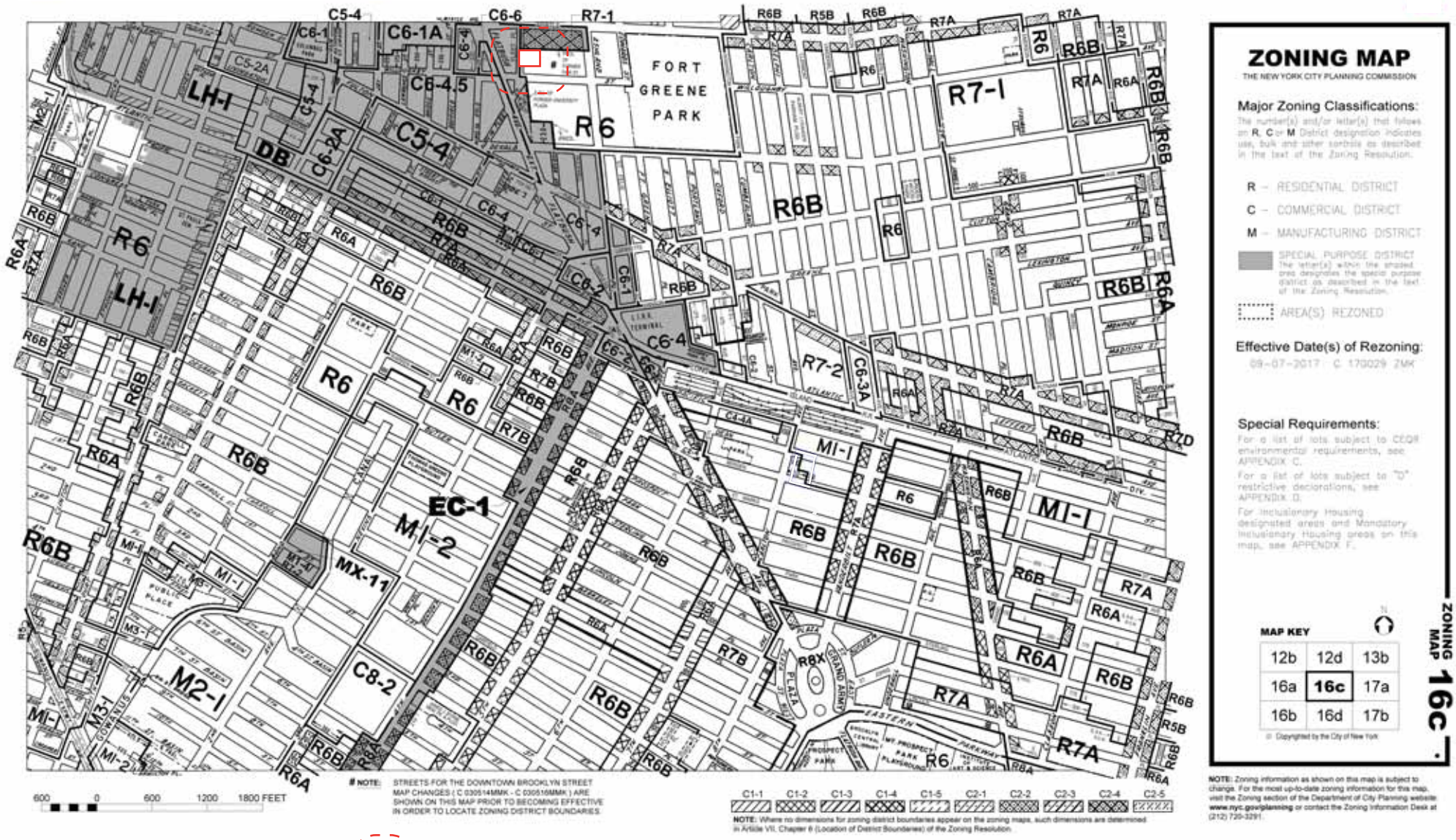
(refer to Figure 1 Photo Key)



1. View southeast from Fleet Place showing area to the south.



2. View east from Fleet Place showing area to the south.

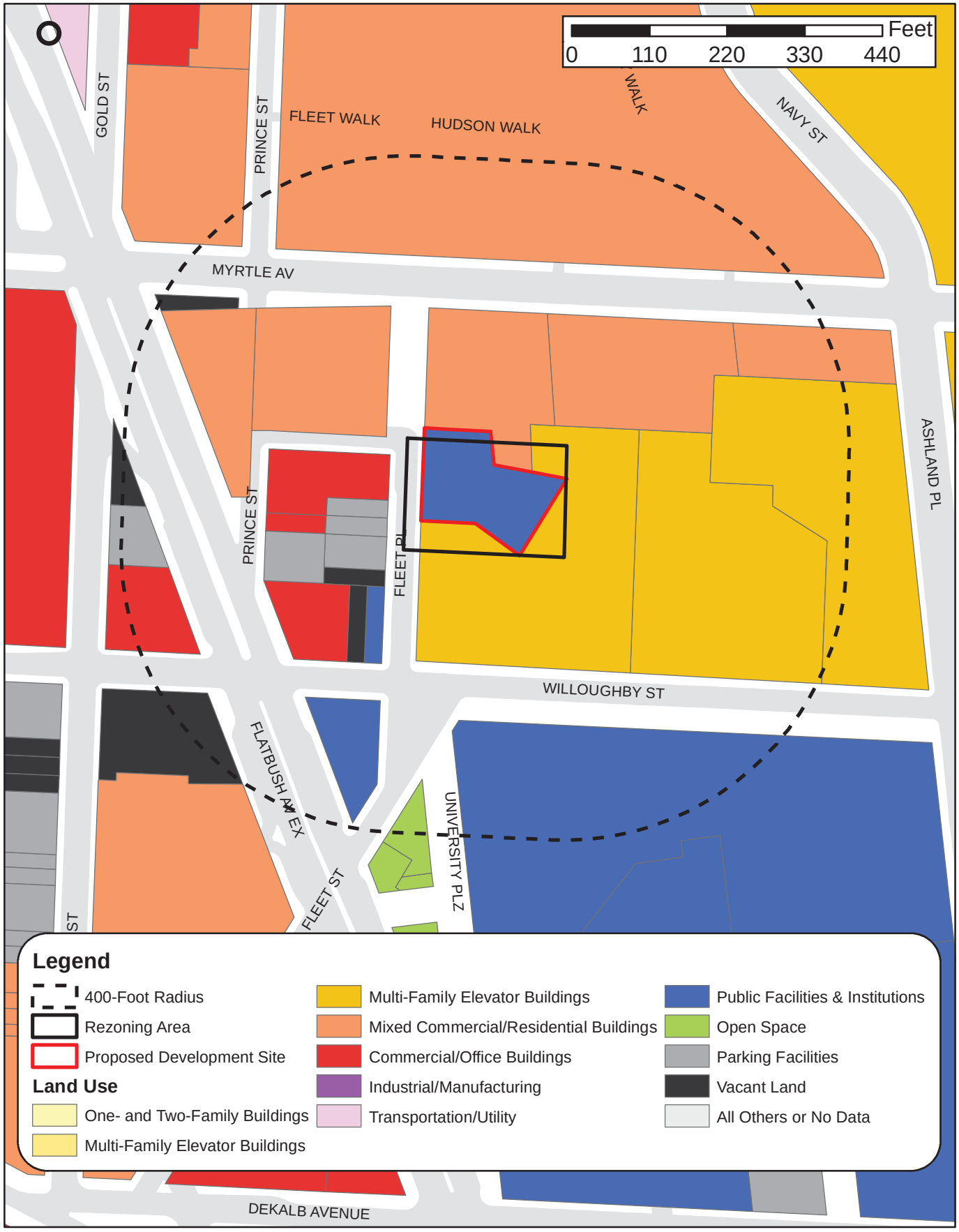


Rezoning Area

400-Foot Radius

101 Fleet Place

Figure 4
Zoning Map


Feet
0
110
220
330
440
GOLD ST
PRINCE ST
FLEET WALK
HUDSON WALK
NAVY ST
MYRTLE AV
ASHLAND PL
FLEET PL
WILLOUGHBY ST
FLATBUSH AV EX
UNIVERSITY PLZ
FLEET ST
DEKALB AVENUE
Legend
400-Foot Radius
Rezoning Area
Proposed Development Site
Land Use
One- and Two-Family Buildings
Multi-Family Elevator Buildings
Multi-Family Elevator Buildings
Mixed Commercial/Residential Buildings
Commercial/Office Buildings
Industrial/Manufacturing
Transportation/Utility
Public Facilities & Institutions
Open Space
Parking Facilities
Vacant Land
All Others or No Data

Part II: TECHNICAL ANALYSIS

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

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

	YES	NO
1. *LAND USE, ZONING, AND PUBLIC POLICY*: CEQR Technical Manual Chapter 4		
(a) Would the proposed project result in a change in land use different from surrounding land uses?	☒	☐
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	☒	☐
(c) Is there the potential to affect an applicable public policy?	☐	☒
(d) If "yes," to (a), (b), and/or (c), complete a preliminary assessment and attach. See Attachment C		
(e) Is the project a large, publicly sponsored project?	☐	☒
o If "yes," complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries?	☐	☒
o If "yes," complete the Consistency Assessment Form.		
2. *SOCIOECONOMIC CONDITIONS*: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
o Generate a net increase of 200 or more residential units?	☒	☐
o Generate a net increase of 200,000 or more square feet of commercial space?	☒	☐
o Directly displace more than 500 residents?	☐	☒
o Directly displace more than 100 employees?	☐	☒
o Affect conditions in a specific industry?	☐	☒
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?	☒	☐
(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)	☐	☒
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)	☐	☒
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)	☒	☐
o **Health Care Facilities and Fire/Police Protection:** Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the proposed project change or eliminate existing open space?	☐	☒
(b) Is the project located within an under-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
o If "yes," would the proposed project generate more than 50 additional residents or 125 additional employees?	☐	☐
(c) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
o If "yes," would the proposed project generate more than 350 additional residents or 750 additional employees?	☐	☐
(d) If the project in located an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	☒	☐

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

	YES	NO
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	☐	☒
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or generate contaminated stormwater in a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): Proposed Project: 10,881; Alternate Residential RWCDS: 10,619		
o Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	☐	☒
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	☐	☒
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): Proposed Project: 45,283,270 MBtu; Alternate Residential RWCDS: 32,803,137 MBtu		
(b) Would the proposed project affect the transmission or generation of energy?	☐	☒
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☒	☐
(b) If "yes," conduct the screening analyses, attach appropriate back up data as needed for each stage and answer the following questions:		
o Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	☐	☒
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.*	☐	☒
o Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	☒	☐
If "yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway trips per station or line?	☐	☒
o Would the proposed project result in more than 200 pedestrian trips per project peak hour?	☒	☐
If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	☒	☐
14. *AIR QUALITY*: CEQR Technical Manual Chapter 17		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☐	☒
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☒	☐
o If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed) See Attachment K	☒	☐
(c) Does the proposed project involve multiple buildings on the project site?	☐	☒
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	☐	☒
(e) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	☐	☒
15. *GREENHOUSE GAS EMISSIONS*: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	☐	☒
(b) Would the proposed project fundamentally change the City's solid waste management system?	☐	☒
(c) If "yes" to any of the above, would the project require a GHG emissions assessment based on the guidance in Chapter 18?	☐	☐
16. *NOISE*: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	☒	☐
(b) Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?	☒	☐
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	☐	☒
(d) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	☐	☒
17. *PUBLIC HEALTH*: CEQR Technical Manual Chapter 20		

	YES	NO
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☒	☐
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach a preliminary analysis, if necessary. See Attachment B		
18. *NEIGHBORHOOD CHARACTER*: CEQR Technical Manual Chapter 21		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; Transportation; Noise?	☒	☐
(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary. See Attachment B		
19. *CONSTRUCTION*: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
o Construction activities lasting longer than two years?	☐	☒
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	☒	☐
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, *etc.*)?	☒	☐
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	☐	☒
o The operation of several pieces of diesel equipment in a single location at peak construction?	☒	☐
o Closure of a community facility or disruption in its services?	☒	☐
o Activities within 400 feet of a historic or cultural resource?	☐	☒
o Disturbance of a site containing or adjacent to a site containing natural resources?	☐	☒
o Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	☐	☒
(b) If any boxes are checked "yes," explain why a preliminary construction assessment is or is not warranted based on the guidance in Chapter 22, "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination. See Attachment B		

20. *APPLICANT'S CERTIFICATION*

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

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

APPLICANT/REPRESENTATIVE NAME	DATE
Philip Habib, P.E.	6/13/19
SIGNATURE	

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

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

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

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

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

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

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

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

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

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

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

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

TITLE Acting Director, Environmental Assessment and Review Division	LEAD AGENCY Department of City Planning, acting on behalf of the City Planning Commission 120 Broadway, 31st Fl. New York, NY 10271 | (212) 720-3493
NAME Olga Abinader	DATE June 14, 2019
SIGNATURE	

NEGATIVE DECLARATION (Use of this form is optional)

Statement of No Significant Effect

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

Reasons Supporting this Determination

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

Hazardous Materials, Air Quality, and Noise

An (E) designation (E-539) related to hazardous materials, air quality and noise has been assigned to the site affected by the proposed actions. Refer to "Determination of Significance Appendix: (E) Designation" for a list of these sites and all applicable (E) designation requirements. With the (E) designation measures in place, the proposed actions would not result in significant adverse impacts related to hazardous materials, air quality and noise.

Community Facilities

A detailed analysis related to community facilities is included in the EAS. The Applicant's proposal would facilitate the development of a 34 story 209,354 gsf of commercial office building in the future with the proposed action. The analysis also considered the development of an alternative future development scenario, a 34-story, 258,904 gsf residential building with 259 dwelling units. As the residential alternative scenario would result in the incremental development of more than 121 dwelling units, it is expected to generate more than 50 elementary and intermediate school students per 2014 CEQR Technical Manual screening criteria, and a detailed assessment of the potential impacts of the proposed actions on public schools is provided in the EAS. The residential development scenario would increase the elementary school utilization rate by 2.0 percent and the intermediate school utilization rate by only 1.4 percent; this increase is less than the five percent CEQR impact threshold, and the analysis concluded that no significant adverse impacts would result for school facilities. The proposal would directly displace an existing 47-student childcare facility, and a detailed analysis of childcare is included in the EAS. The residential development scenario would increase the child care utilization rate by 2.0 percent, which is less than the five percent CEQR Technical Manual indirect impact threshold. Therefore, the analysis concludes that no significant adverse impact to childcare, elementary schools, or intermediate schools would result.

Open Space

A detailed analysis related to open space is included in the EAS. The analysis for the residential development scenario shows that the open space ratio would decrease by 0.8 percent, which is less than the 5 percent threshold for a significant adverse impact defined in the 2014 CEQR Technical Manual. While the study area's passive space ratio would decrease by more than 5 percent in the non-residential development scenario, it would remain well above the City's guideline ratio of 0.15 acres per 1,000 workers, at 1.69 acres per 1,000 workers. Therefore, analysis concludes that there will be no significant adverse impact for open spaces in either development scenario.

Shadows

A detailed analysis related to shadows is included in the EAS. The project would result in incremental shadows on three sunlight-sensitive resources: Fort Greene Park, the Gold Street and Flatbush Avenue Extension Plaza, and the NYCHA Ingersoll Houses open spaces. The analysis showed that these resources had an incremental shadow increases of 20 minutes, 39 minutes, and 21 minutes, respectively. The extent and duration of the incremental shadows on these open space resources would not significantly reduce or eliminate direct sunlight exposure on any sunlight-sensitive features, and would not significantly alter the public's use of the open spaces or threaten the viability of vegetation or other elements located within the open spaces. Therefore, incremental shadows would not be considered a significant adverse impact, in accordance with CEQR Technical Manual methodology.

Urban Design and Visual Resources
A detailed analysis related to urban design and visual resources is included in the EAS. In the future with the proposed actions, the visual appearance within the primary study area and development site would change; however, this change would not meet the 2014 CEQR Technical Manual threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the primary study area such that the alteration would negatively affect a pedestrian's experience of the area. The analysis concludes that the proposed action would not result in significant adverse impacts to urban design or visual resources.

Transportation
A detailed analysis related to transportation is included in the EAS. The project would generate fewer than 50 peak-hour vehicle trips and fewer than 200 peak-hour pedestrian trips; the traffic and pedestrian trip generation rates for the project are below the thresholds specified in the 2014 CEQR Technical Manual, and the project would not result in significant adverse impacts. A detailed transit analysis was conducted because the project would generate more than the 200 subway trip screening threshold defined in the 2014 CEQR Technical Manual; the analysis concluded that no stations are expected to experience 200 or more incremental subway person trips during peak hours. As shown by the analysis and screening in the EAS, the proposal would not exceed the 2014 CEQR Technical Manual Thresholds for impact significance for traffic, pedestrian, or transit impacts, and no significant adverse impacts for transportation would result.

No other significant effects upon the environment that would require the preparation of a Draft Environmental Impact Statement are foreseeable. This Negative Declaration has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law (SEQRA). Should you have any questions pertaining to this Negative Declaration, you may contact Katherine Glass at (212) 720-3425.

TITLE	LEAD AGENCY
Acting Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission 120 Broadway, 31st Fl. New York, NY 10271 | (212) 720-3493
NAME Olga Abinader	DATE June 14, 2019
SIGNATURE	

TITLE
Chair, City Planning Commission

NAME	DATE
Marisa Lago	June 17, 2019
SIGNATURE	

Determination of Significance Appendix: (E) Designation

To ensure that there would be no significant adverse hazardous materials, air quality, noise impacts associated with the proposed project, an (E) designation (E-539) will be assigned to projected development site as explained below.

Projected Development Site 1:

Block 2061, Lot 100

Hazardous Materials

Task 1

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

Task 2

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

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

A construction-related health and safety plan should be submitted to OER and would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil, groundwater and/or soil vapor. This plan would be submitted to OER prior to implementation.

Air Quality

In order to ensure that there would be no significant air quality impacts of the HVAC emissions, the applicant-owned development site (Block 2601, Lot 100) would be required to comply with the following (E) designation:

> **Block 2601, Lot 100:** Any new commercial/residential development or enlargement on the above-referenced property must use natural gas as the type of fuel for heating, ventilating, and air conditioning and hot water system (HVAC) and ensure that - for commercial use, the HVAC stack is located at the highest tier, at least 199 feet above the grade, and at least 35 feet from the west lot line facing Fleet Place; for residential use, the HVAC stack is located at the highest tier, at least 402 feet above the grade - to avoid any potential significant adverse air quality impacts.

Noise

The composite window/wall noise attenuation described in the EAS would be required through the assignment of an (E) designation (E-539) for noise to the applicant-owned development site:

> **Block 2061, Lot 100:** In order to ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all facades in order to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

NEGATIVE DECLARATION (Use of this form is optional)

Statement of No Significant Effect

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

Reasons Supporting this Determination

The above determination is based on information contained in this EAS, which finds that the proposed project:

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

TITLE	LEAD AGENCY
NAME	DATE
SIGNATURE	

ATTACHMENT A

PROJECT DESCRIPTION

I. INTRODUCTION

The applicant, Fleet Center, Inc., is seeking a series of discretionary actions from the New York City Planning Commission (CPC) to facilitate the development of 101 Fleet Place (Brooklyn Block 2061, Lot 100, the "development site") with a 209,354-gross square foot (gsf) commercial office building (the "Proposed Project"). Specifically, the applicant is seeking the following: (1) a zoning map amendment, which would rezone the applicant-owned Block 2061, Lot 100, in addition to portions of adjacent Lots 80 and 110 (the "rezoning area") from R6 to C6-4; and (2) a zoning text amendment to designate the rezoning area as a Mandatory Inclusionary Housing (MIH) Area and to extend the Special Downtown Brooklyn (DB) District to include the entirety of the rezoning area (collectively, the "proposed actions"). The proposed actions will be undergoing coordinated review, with the New York City Department of City Planning (DCP) serving as the lead agency.

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

II. BACKGROUND AND EXISTING CONDITIONS

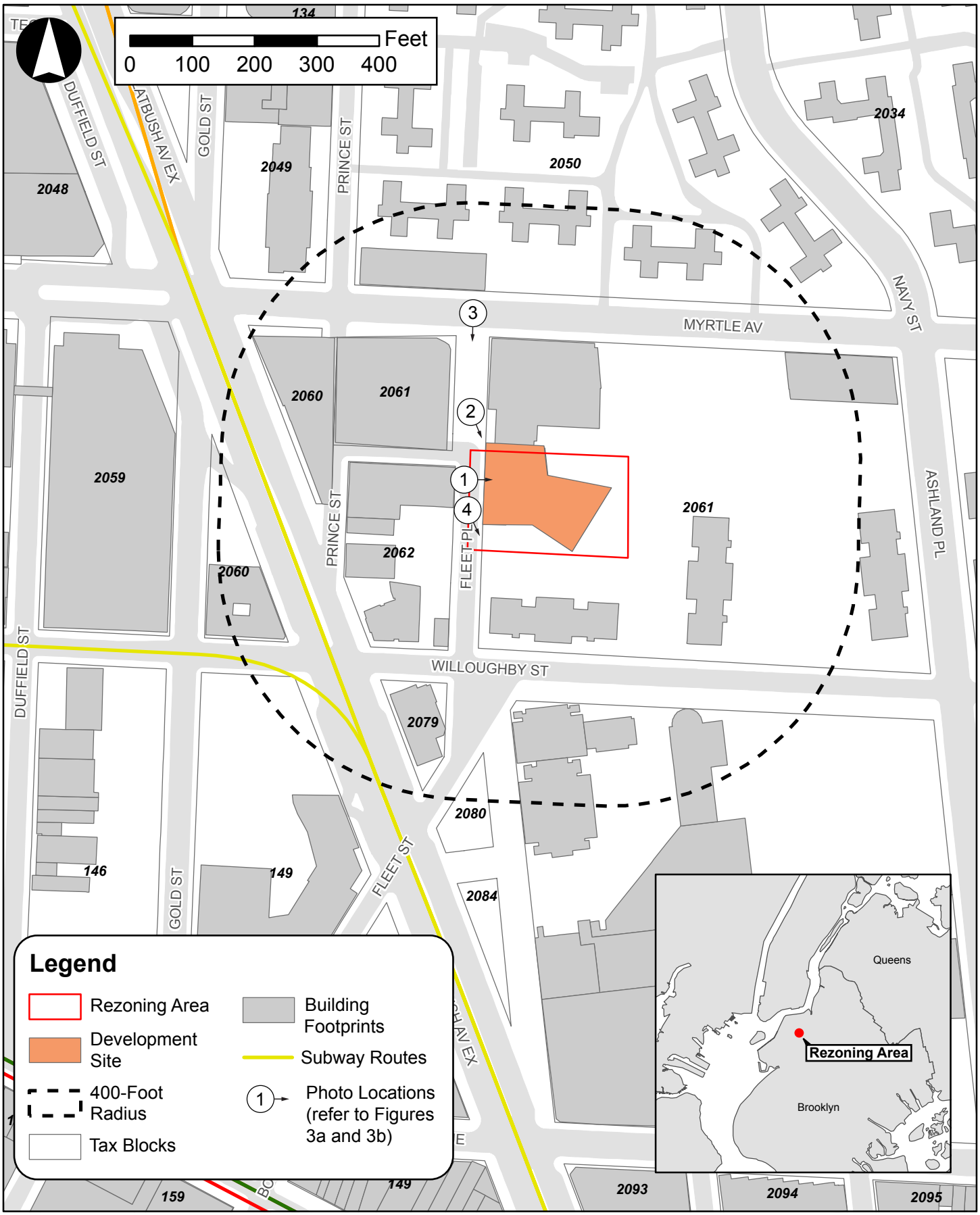
Project Area

Rezoning Area

The rezoning area is located on the western portion of tax Block 2061 in the Downtown Brooklyn neighborhood of Brooklyn Community District (CD) 2 (refer to **Figure A-1, "Project Location"**). The rezoning area occupies 164'-4" of frontage on the east side of Fleet Place between Myrtle Avenue (to the north) and Willoughby Street (to the south) and extends east of Fleet Place to a depth of 200 feet. The rezoning area contains 33,039 sf of lot area, consisting of 19,388 sf of the 20,536-sf Lot 100 (the applicant-owned development site), as well as approximately 11,528 sf of adjacent Lot 80 and approximately 2,130 sf of adjacent Lot 110.

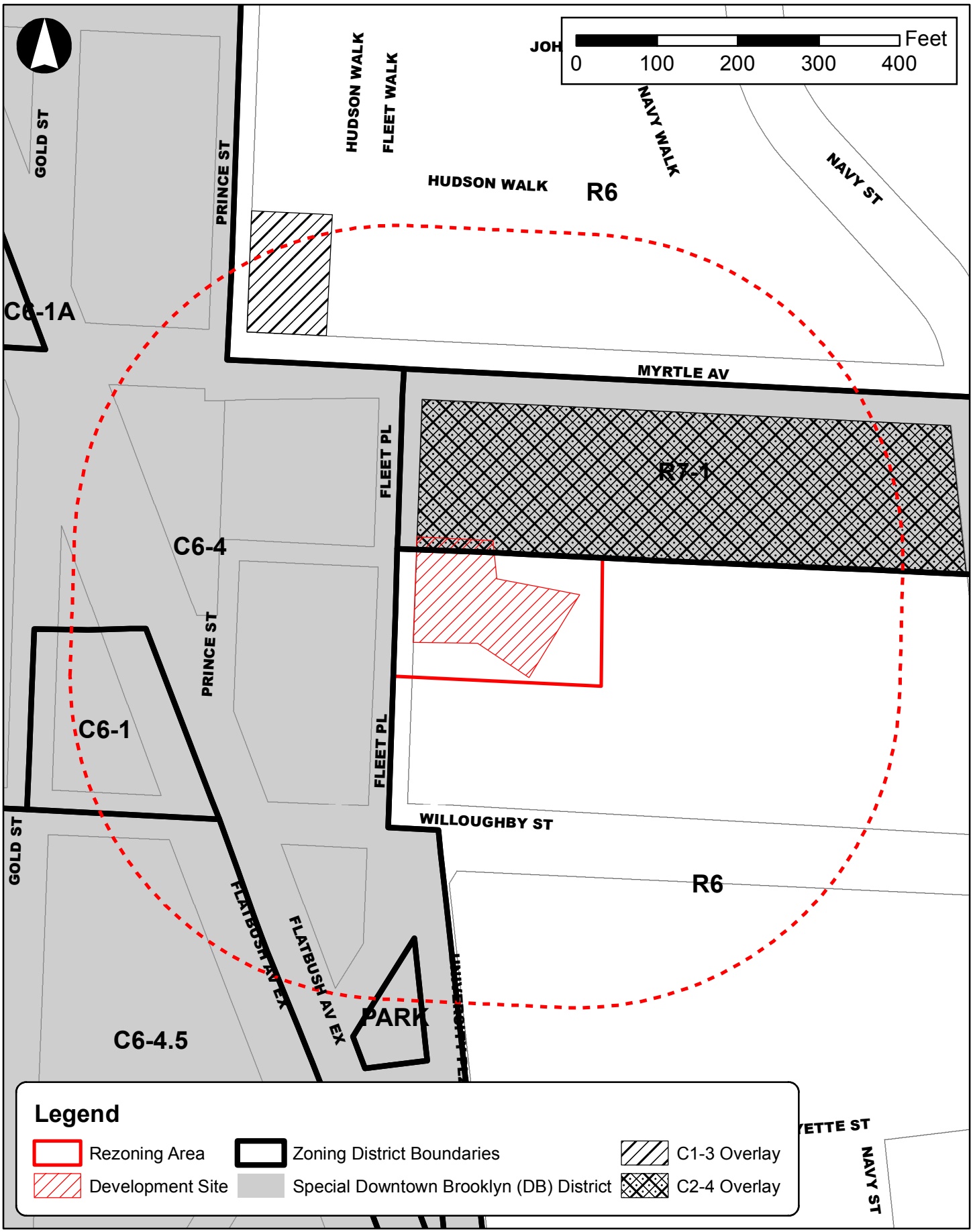
As presented in **Figure A-2**, the rezoning area is currently zoned R6. R6 districts are widely mapped in built-up, medium-density areas and can range in character from neighborhoods with a diverse mix of

Figure A-1
Project Location



Source: DoITT; NYCDCP

Figure A-2
Existing Zoning



building types and heights to large scale "tower in the park" developments. Developers in R6 districts can choose between two sets of bulk regulations: standard Height Factor regulations, which produce small multi-family buildings on small zoning lots and, on larger lots, tall buildings set back from the street; and optional Quality Housing regulations that produce high lot coverage buildings with height limits that often reflect the scale of older, pre-1961 apartment buildings in the neighborhood. Under Height Factor regulations, the maximum permitted residential FAR ranges from 0.78 (for a single story building) to 2.43 at a height of 13 stories; the open space ratio (OSR) ranges from 27.5 to 37.5. Residential buildings developed pursuant to R6 (Height Factor) regulations require off-street parking for 70 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required. Under Quality Housing regulations, the maximum permitted FAR is 3.0 on wide streets outside of the Manhattan Core and 2.2 on narrow streets. Community facility uses are permitted up to 4.8 FAR in R6 districts under both Height Factor and Quality Housing regulations. Residential buildings developed pursuant to R6 (Quality Housing) regulations require off-street parking for 50 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required.

Applicant-Owned Lot 100 (the Development Site)

Lot 100, which is irregularly-shaped and measures 20,536 sf in size, comprises the applicant-owned and -controlled development site. The development site extends approximately 127 feet along the east side of Fleet Place. As noted above, a 19,388-sf portion of Lot 100 (101 Fleet Place) is located within the rezoning area, and approximately 1,148 sf of the development site is located outside of the rezoning area (refer to **Figure A-2**). The portion of the development site located outside of the rezoning area is zoned R7-1/C2-4 and is located within the Special DB District, and would not be rezoned. The R7-1/C2-4 (DB) district was established in 2004 as part of the Downtown Brooklyn Redevelopment Project approved in June 2004 (ULURP No. 04071ZMK and CEQR No. 03DME016K).

As shown in **Figures A-3a** and **A-3b**, the site contains a 16,482-gsf one-story brick building, which is occupied by Duffield Children's Center, a child care and pre-K program operated by Brooklyn Community Services (BCS). Although the development site contains no parking uses, an existing curb cut is present along Fleet Place.

Pursuant to Section 77-11 of the *Zoning Resolution of the City of New York* (ZR), whenever a zoning lot "is divided by a boundary between districts in which different uses are permitted, the use regulations applicable to the district in which more than 50 percent of the lot area of the zoning lot is located may apply to the entire zoning lot, provided that the greatest distance from the mapped district boundary to any lot line of such zoning lot in the district in which less than 50 percent of its area is located does not exceed 25 feet." As such, the R6 district mapped in the southern 115.31 feet of the development site applies to the entirety of the development site. Therefore, with maximum permitted residential and community facility FARs of 2.2 and 4.8, respectively, and a built FAR of 0.8, the development site is under-built pursuant to zoning.

Non-Applicant-Owned Lots 80 and 110

Small portions of two adjacent non-applicant-owned properties are partially located within the rezoning area: approximately 11,528 sf of Lot 80 and approximately 2,130 sf of Lot 110. 175 Willoughby Street (Lot 80) is a 78,478-sf irregular-shaped property containing a 15-story, 187,667-sf multi-family residential building that is one of three 15-story residential buildings that comprise the multi-family University Tower development located on the southern, central, and eastern portions of Block 2061 along Willoughby

Rezoning Area Photos

(refer to Figure A-1 Photo Key)



1. View east from Fleet Place of the existing Duffield Children's Center.



2. View southeast from Fleet Place of the existing Duffield Children's Center.



3. View south from intersection of Fleet Place and Myrtle Avenue of existing area around site.

Rezoning Area Photos

(refer to Figure A-1 Photo Key)



1. View southeast from Fleet Place showing area to the south.



2. View east from Fleet Place showing area to the south.

Street and Ashland Place. 81 Fleet Place (Lot 110) is a 33,656-sf irregular-shaped property containing a 15-story, 265,417-sf mixed-use commercial/residential building constructed in 2015 that is one of three buildings that comprise the mixed-use Red Apple development located on the northern portion of Block 2061 along Myrtle Avenue. Both Lots 80 and Lot 110, in addition to adjacent lots 1, 101, 40, and 60 comprise one zoning lot, split between R6 and R7-1/C2-4 (DB) zoning districts, and were merged to facilitate a transfer of unused floor area from University Towers to Red Apple. The weighted maximum residential, commercial, and community facility FARs for the entire zoning lot are 3.02, 4.80, and 0.75, respectively. The existing zoning lot buildings comprise a total built FAR of 3.15, including 3.02 FAR of residential uses, 0.02 FAR of community facility uses, and 0.11 FAR of commercial uses.

Surrounding Area

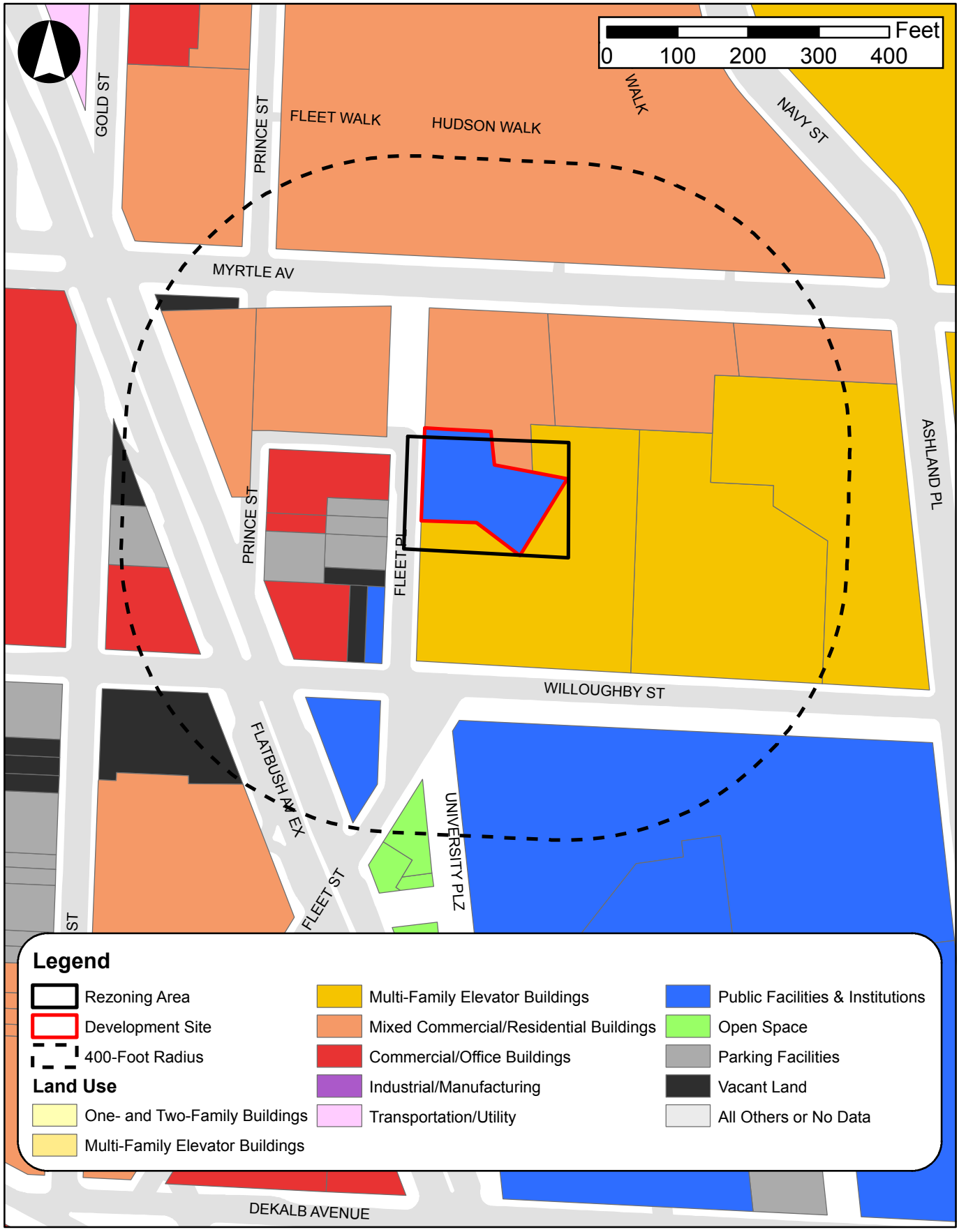
The project area is located in the Downtown Brooklyn neighborhood of Brooklyn. Land uses in the vicinity of the project area include a mix of residential, mixed-use, institutional, and commercial uses (refer to **Figure A-4**). Residential uses are generally located east of the project area). Mixed-use buildings are generally located along Myrtle Avenue (to the north of the project area). Institutional uses are generally located to the south of the project area along Willoughby Street. Commercial and parking uses are found to the west of the project area.

Much of the area surrounding the project area were rezoned in 2004 as part of the Downtown Brooklyn Redevelopment Project, which was part of the City's long-range strategy to create a vibrant, multi-use urban environment, build on the already established commercial core, and strengthen linkages between the area's commercial core and surrounding residential neighborhoods, among other project objectives. The area affected by the Downtown Brooklyn Redevelopment Project extended from Tillary Street to the north, Schermerhorn Street to the south, Adams Street to the west, and Ashland Place to the east. As noted above, a portion of the development site was rezoned R7-1/C2-4 (DB) under this initiative. In addition, the Downtown Brooklyn Redevelopment Project included a City Map change affecting Fleet Place. Specifically, the street was extended north to intersect with Myrtle Avenue and widened to its current mapped width of 60 feet as part of the 2004 Downtown Brooklyn Redevelopment Project; prior to 2004, Fleet Place did not extend north of Fair Street (the approximately northern border of the rezoning area). Since the City Map change was approved, only portions of the Fleet Place to the north of the project area have been widened to the mapped 60-foot width (adjacent to 86 Fleet Place); the remainder of Fleet Place remains built to a width of 50 feet.

A significant amount of new development has been completed along and in the vicinity of the project area since 2004 or is currently underway. Directly north of the project area at 81 Fleet Place "the Giovanni," a 205-unit predominantly residential building, was completed in 2015. 180 Myrtle Avenue development, which abuts 81 Fleet Place to the east, was completed in 2014 and includes 228 residential units, in addition to ground floor retail. Directly west of the project area, an existing two-story building was recently substantially renovated and expanded to comprise approximately 52,700 gsf of commercial office floor area. Most recently completed, the predominantly commercial 86 Fleet Place (at the southwest corner of Myrtle Avenue and Fleet Place) is currently being leased out.

The project area is also in close proximity to Fort Greene Park, a 30.17-acre open space located two blocks to the east. The park was designated as Brooklyn's first park in 1847, and received its name in 1897. Fort Greene Park, is owned and operated by the New York City Department of Parks and Recreation (NYC Parks), and includes tennis courts, basketball courts, playgrounds, spray showers, a dog park, the Prison

Land Use Map


Feet
0 100 200 300 400
GOLD ST
PRINCE ST
FLEET WALK
HUDSON WALK
WALK
NAVY ST
MYRTLE AV
PRINCE ST
FLEET PL
ASHLAND PL
WILLOUGHBY ST
FLATBUSH AV EX
UNIVERSITY PLZ
FLEET ST
ST
DEKALB AVENUE
Legend
Rezoning Area
Development Site
400-Foot Radius
Land Use
One- and Two-Family Buildings
Multi-Family Elevator Buildings
Multi-Family Elevator Buildings
Mixed Commercial/Residential Buildings
Commercial/Office Buildings
Industrial/Manufacturing
Transportation/Utility
Public Facilities & Institutions
Open Space
Parking Facilities
Vacant Land
All Others or No Data

Ship Martyrs Monument, a nature center, barbecue and picnic areas, walking paths, benches, and a variety of landscaped and forested areas.

In terms of public transit access, the Dekalb Avenue (B/Q/R) Station is located approximately 475 feet (a three-minute walk) southwest of the project area, with entries to which are located at the intersection of Fleet Place and Flatbush Avenue Extension. Other nearby subway stations include the Hoyt Street (2/3) Station, the Jay Street-MetroTech (A/C/F/R) Station, and the Nevins Street (2/3/4/5) Station, all of which are an approximately seven-minute (0.3-mile) walk from the project area. In addition, the B54 local bus route runs along Myrtle Avenue (to the north of the project area), providing connections between downtown Brooklyn and Ridgewood, Queens.

III. THE PROPOSED ACTIONS

The Proposed Project requires the following discretionary land use actions:

- ***Zoning Map Amendment:*** The applicant is proposing a zoning map amendment to change the rezoning area from R6 to C6-4 (see **Figure A-5**). **Table A-1**, below, compares the use and bulk requirements under the existing and proposed zoning districts.
- ***Zoning Text Amendment:*** The applicant is proposing a zoning text amendment to ZR Appendix F to establish the rezoning area as an MIH Area and to ZR Article X, Chapter 1, Appendix E to update the boundary maps of the Special DB District to include the entirety of the rezoning area.

The proposed zoning map and text amendments are discretionary public actions that are subject to both the Uniform Land Use Review Procedure (ULURP) and City Environmental Quality Review (CEQR).

Table A-1: Comparison of Existing and Proposed Zoning

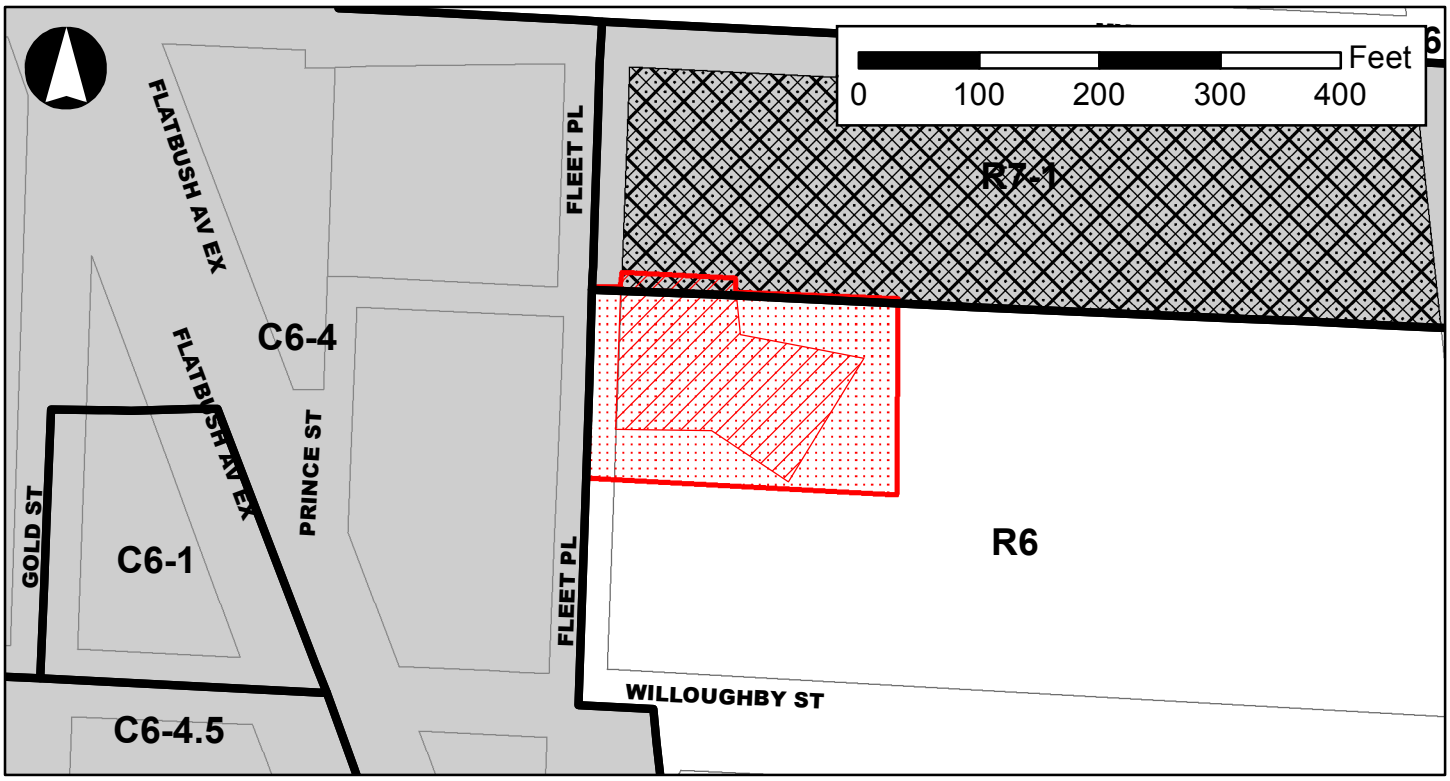
	Existing R6	Proposed C6-4 (DB) (MIH)
Use Groups	1-4	1-12
Maximum Permitted FAR		
Residential		
Height Factor Regulations	0.78-2.43	12.0[2]
Quality Housing Regulations[1]	2.2	12.0[2]
Community Facility	4.8	10.0
Commercial	Not Permitted	10.0
Manufacturing	Not Permitted	Not Permitted

Source: *Zoning Resolution of the City of New York.*
Notes:
[1] For zoning lots on narrow streets.
[2] With MIH.

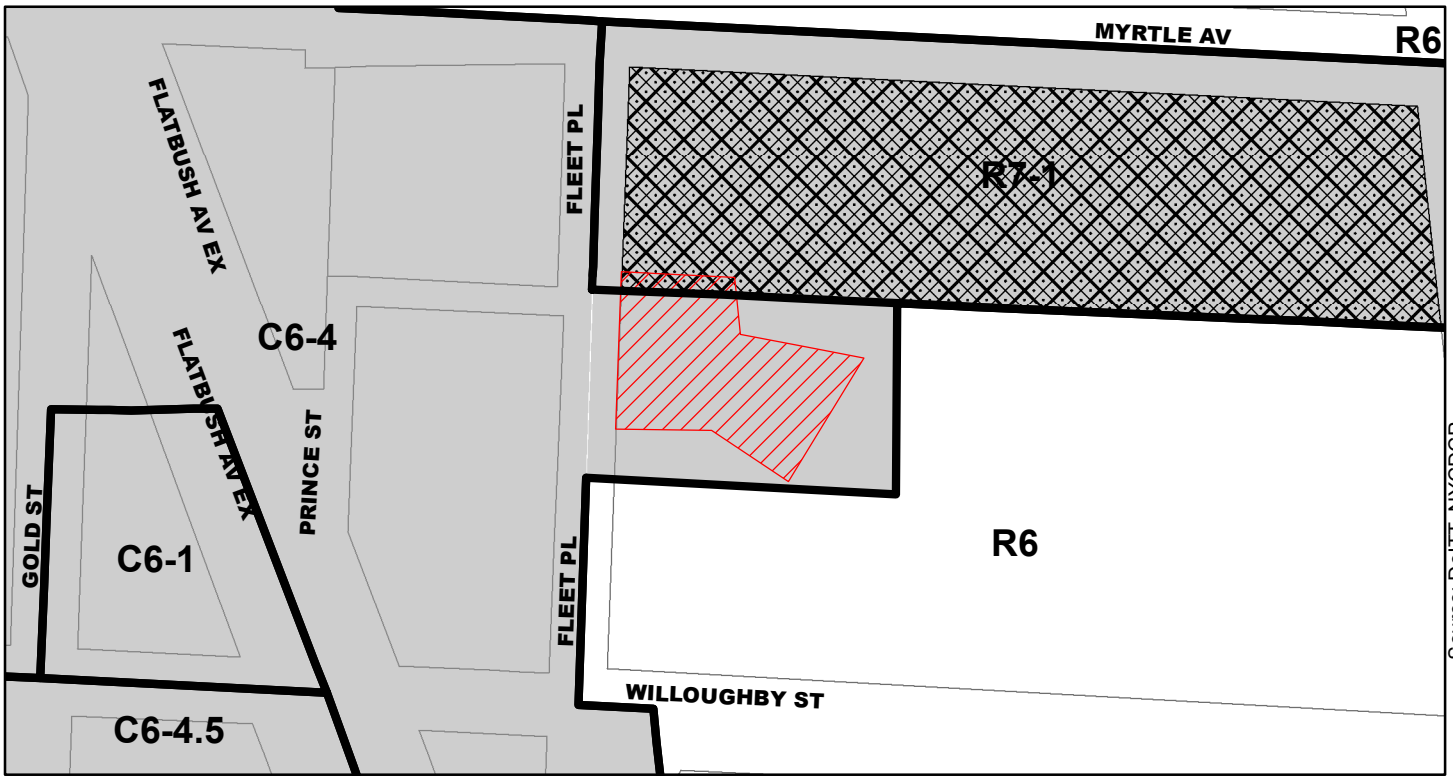
(E) Designations

As described in greater detail in **Attachment B, "Supplemental Screening," Attachment K, "Air Quality," and Attachment L, "Noise,"** the proposed actions include the placement of a hazardous materials, an air quality, and a noise (E) designation (E-539) on Block 2061, Lot 100 (the development site). The (E) designation is a mechanism that ensures no significant adverse impacts would result from a proposed action because of steps that would be undertaken prior to development of a rezoned site. The hazardous materials, air quality, and noise (E) designation that would be assigned to Block 2061, Lot 100 as part of

Figure A-5
Proposed Zoning Change



Existing



Source: DoITT, NYCDCP

Proposed

Legend

- Project Area
- Development Site
- C1-3 Overlay
- Special Downtown Brooklyn (DB) District
- Rezoning Area
- Zoning District Boundaries
- C2-4 Overlay

the proposed actions would (1) ensure that the development site would not be developed unless remedial measures are implemented and that there would be no significant adverse hazardous materials impacts; (2) require the fuel type and stack location for the Proposed Project's heating, ventilation, and air conditioning (HVAC) systems; and (3) require future residential/commercial uses to provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all facades in order to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses.

IV. PURPOSE AND NEED FOR PROPOSED ACTIONS

The proposed actions are intended to facilitate a new commercial building in Brooklyn CB 2. As described above, to facilitate the Proposed Project, the applicant is proposing to rezone the rezoning area from R6 to C6-4. The rezoning area is an ideal location for extension of the C6-4 District and Special DB District because of its location in the heart of Downtown Brooklyn, its adjacency to existing C6-4 and height factor districts, and its proximity to a number of forms of public transit. In addition, the market for office space in Downtown Brooklyn is extremely tight, with a vacancy rate under three percent.[1] Small firms and not-for-profits are finding it difficult to locate appropriately sized and priced space. Absent the proposed actions, the potential to provide new commercial office uses on the development site would be extremely limited; with approval of the proposed actions, the Proposed Project would assist in filling this gap in the office market.

V. DESCRIPTION OF THE PROPOSED PROJECT

The applicant, Fleet Center, Inc., is proposing to redevelop the development site with a new 14-story (196-foot-tall) commercial office building (the "Proposed Project," shown in **Figure A-6** and **A-7**). The Proposed Project would maximize the proposed C6-4 district's permitted commercial FAR of 10.0. The Proposed Project would have a streetwall height of 84 feet, before rising to a maximum building height of 196 feet after a 20-foot setback. No accessory parking would be provided, in accordance with zoning.

As shown in **Figure A-8**, entrances to the building would be located in the central and southern portions of the development site's Fleet Place frontage, with a loading dock located at the northern end of the site. The entrance to the building would be recessed from the property line along Fleet Place to allow additional pedestrian sidewalk space.

VI. ANALYSIS FRAMEWORK AND RWCDS

Build Year

Accounting for DCP Pre-Application and Pre-Certification review time and public review under ULURP (approximately seven months) and based on the anticipated 24-month construction schedule for the Proposed Project, it is anticipated that the Proposed Project would be built and occupied by 2021. Accordingly, the RWCDS uses a 2021 Build Year for analysis purposes.

[1] *Downtown Brooklyn Market Report*. This vacancy rate is lower than other areas of the City, such as Lower Manhattan (8.9 percent vacancy rate), Midtown South (4.6 percent) and Midtown Manhattan (7.1 percent).



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101 Fleet Place

Figure A-6
Proposed Project

BLDG HT	LVL	FLR TO FLR HEIGHT		LOT COVERAGE	TOTAL
196.0	ROOF				
182.0	14	14.0	12,904	0.63	12,904
168.0	13	14.0	13,400	0.65	13,400
154.0	12	14.0	13,400	0.65	13,400
140.0	11	14.0	13,400	0.65	13,400
126.0	10	14.0	13,400	0.65	13,400
112.0	9	14.0	13,400	0.65	13,400
98.0	8	14.0	13,400	0.65	13,400
84.0	7	14.0	13,400	0.65	13,400
70.0	6	14.0	17,000	0.83	17,000
56.0	5	14.0	17,000	0.83	17,000
42.0	4	14.0	17,000	0.83	17,000
28.0	3	14.0	17,000	0.83	17,000
14.0	2	14.0	17,000	0.83	17,000
0.0	1	14.0	17,650	0.86	17,650
	CELLAR	-20.0			

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101 Fleet Place

Figure A-8
Illustrative Ground Floor Plan

Identification of Development Sites

According to the *CEQR Technical Manual*, the following factors, commonly referred to as "soft site criteria," are generally considered when evaluating whether some amount of development would likely be construction by the built year as a result of the proposed action:

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

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

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

Applicant-Owned Lot 100 (the Development Site)

The 101 Fleet Place development site (Block 2061, Lot 100) currently has a built FAR of approximately 0.8, which is less than half of the maximum residential and community facility FARs under the existing R6 zoning. As detailed in Section V, above, the applicant intends to redevelop Lot 100. Therefore, the applicant-owned site is considered a projected development site for environmental analysis purposes.

Non-Applicant-Owned Lots 80 and 110

In addition to the applicant's property, the rezoning area includes small portions of the adjacent non-applicant-owned Lots 80 and 110. 175 Willoughby Street (Lot 80) is a 78,478-sf irregular-shaped property partially located within the rezoning area; approximately 11,528 sf of Lot 80 (representing approximately 14.7 percent of the total lot area) would be rezoned from R6 to C6-4 (DB) under the proposed rezoning. 81 Fleet Place (Lot 110) is a 33,656-sf irregular-shaped property partially located within the rezoning area; approximately 2,130 sf of Lot 80 (representing approximately six percent of the total lot area) would be rezoned from R6 to C6-4 (DB) under the proposed rezoning. As noted above, lots 110 and 80, in addition to adjacent lots 1, 101, 40, and 60 comprise one zoning lot with a total lot area of 321,443 sf. Under existing conditions, 200,422 sf of the zoning lot is zoned R6 and 121,020 sf is zoned R7-1/C2-4. Under the proposed rezoning, a total of 13,651 sf of the zoning lot would be zoned C6-4, approximately 120,961 sf would be zoned R7-1/C2-4, and approximately 186,772 sf would be zoned R6, allowing for an additional 0.41 FAR of residential floor area, 0.22 FAR of community facility floor area, and 0.42 FAR of commercial floor area to be developed on the zoning lot. The affected zoning lot is occupied by five 15-story predominantly residential buildings and one nine-story predominately residential building; three of the zoning lot's residential buildings were constructed in the past ten years. In total, the five zoning lot buildings comprise 1.2 million gsf, representing a total built FAR of approximately 3.15. As the affected zoning lot is not built substantially less than the existing maximum FAR, the site does not meet the *CEQR Technical Manual* soft site criteria, Lots 80 and 110 are not expected to be redeveloped as a result of the proposed actions, and the lots are therefore classified as excluded sites for CEQR analysis purposes.

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

In the future without the proposed actions, the rezoning area's existing R6 zoning would remain in place. Under the No-Action scenario, the existing conditions within the rezoning area would remain, and no changes to land use are expected to occur. The 16,482-gsf one-story brick building occupied by Duffield Children's Center would remain on the development site in the No-Action scenario.

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

Under the With-Action scenario, the requested zoning map and text amendments would be approved, allowing the applicant to construct the Proposed Project. The proposed actions would allow for a maximum commercial/community facility FAR of 10.0 and a maximum residential FAR of 12.0. The Proposed Project would maximize the available 10.0 commercial FAR. While other commercial uses would be permitted under the proposed zoning, the proposed office use represents the worst-case for environmental review purposes; hotel uses (also prevalent in the surrounding area) generate significantly less peak hour traffic than office uses and, therefore, do not represent the worst-case scenario. In addition, as the proposed actions would increase the maximum permitted residential FAR to 12.0, a second RWCDS (the "Alternate Residential RWCDS") will also be assessed, below.

As shown in **Figure A-9,** under the Alternate Residential RWCDS, it is assumed that a 34-story (380-foot-tall) predominantly residential building containing 258,904 gsf of residential space (259 total dwelling units (DUs), assuming 1,000 sf per DU) and 36 accessory parking spaces would be constructed on the development site. Of the 259 DUs, either 65 DUs (25 percent of units) or 78 DUs (30 percent of units) would be affordable at or below 80 percent AMI. The residential FAR for the development site would be

BLDG HT	LVL	FLR TO FLR HEIGHT		LOT COVERAGE	TOTAL
380.0	ROOF				
369.0	34	11.0	1,154	0.34	1,154
358.0	33	11.0	6,900	0.34	6,900
347.0	32	11.0	6,900	0.34	6,900
336.0	31	11.0	6,900	0.34	6,900
325.0	30	11.0	6,900	0.34	6,900
314.0	29	11.0	6,900	0.34	6,900
303.0	28	11.0	6,900	0.34	6,900
292.0	27	11.0	6,900	0.34	6,900
281.0	26	11.0	6,900	0.34	6,900
270.0	25	11.0	6,900	0.34	6,900
259.0	24	11.0	6,900	0.34	6,900
248.0	23	11.0	6,900	0.34	6,900
237.0	22	11.0	6,900	0.34	6,900
226.0	21	11.0	6,900	0.34	6,900
215.0	20	11.0	6,900	0.34	6,900
204.0	19	11.0	6,900	0.34	6,900
193.0	18	11.0	6,900	0.34	6,900
182.0	17	11.0	6,900	0.34	6,900
171.0	16	11.0	6,900	0.34	6,900
160.0	15	11.0	6,900	0.34	6,900
149.0	14	11.0	6,900	0.34	6,900
138.0	13	11.0	6,900	0.34	6,900
127.0	12	11.0	6,900	0.34	6,900
116.0	11	11.0	6,900	0.34	6,900
105.0	10	11.0	6,900	0.34	6,900
94.0	9	11.0	6,900	0.34	6,900
83.0	8	11.0	6,900	0.34	6,900
72.0	7	11.0	6,900	0.34	6,900
61.0	6	11.0	9,200	0.83	9,200
50.0	5	11.0	9,200	0.83	9,200
39.0	4	11.0	9,200	0.83	9,200
28.0	3	11.0	9,200	0.83	9,200
14.0	2	14.0	17,000	0.83	17,000
0.0	1	14.0	17,650	0.86	17,650
	CELLAR	-20.0			

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12.0, the maximum permitted residential FAR pursuant to the proposed zoning map and text amendments.

Project Increment

As presented in **Table A-2a**, compared to the No-Action condition, the Proposed Project would result in the incremental development of 209,354 gsf of commercial office space and a net reduction of 16,482 gsf of community facility floor area. In terms of population, the Proposed Project is expected to generate 800 incremental employees, as compared to the 2021 No-Action condition. As presented in **Table A-2b**, compared to the No-Action condition, the Alternate Residential RWCDS would result in the incremental development of 259 DUs (including up to 78 affordable DUs) and 36 accessory parking spaces, as well as a net reduction of 16,482 gsf of community facility floor area. In terms of population, the Alternate Residential RWCDS would generate 521 incremental residents and a net reduction of 27 employees, as compared to the 2021 No-Action condition.

Table A-2a: Comparison of Existing, No-Action, and With-Action Conditions – Proposed Project

	Existing Condition		No-Action Condition		With-Action Condition		Increment
LAND USE							
Residential	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
Commercial	☐ YES	**X** NO	☐ YES	**X** NO	**X** YES	☐ NO	
If "yes," specify the following:							
Type of use	N/A		N/A		Commercial office		Commercial office
Gross floor area (sf)	N/A		N/A		209,354 gsf		+209,354 gsf
Manufacturing/Industrial	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	N/A
Community Facility	**X** YES	☐ NO	**X** YES	☐ NO	☐ YES	**X** NO	
If "yes," specify the following:							
Type	Child care facility		Child care facility				Eliminating child care facility
Gross floor area (sf)	16,482 gsf		16,482 gsf				-16,482 gsf
Vacant Land	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	N/A
Other Land Uses	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
PARKING							
Garages	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
Lots	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
ZONING							
Zoning classification	R6		R6		C6-4 (DB) (MIH)		Change from R6 to C6-4 (DB) (MIH)
Maximum amount of floor area that can be developed	Residential: 0.78-2.43 (HF) or 3.0 (QH) Community Facility: 4.8		Residential: 0.78-2.43 (HF) or 3.0 (QH) Community Facility: 4.8		Residential: 12.0 (with MIH) Community Facility: 10.0 Commercial: 10.0		Residential: +7.0 (with MIH) Community Facility: +5.2 Commercial: +10.0
Predominant land use and zoning classifications within the land use study area(s) or a 400 ft. radius of proposed project	Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		No change
POPULATION[1]							
Residents	0		0		0		No Change
Workers	37		37		837		+800

Notes:

[1] Existing/No-Action worker population assumes one employee per 450 sf. With-Action worker population assumes one commercial office employee per 250 sf.

Table A-2b: Comparison of Existing, No-Action, and With-Action Conditions – Alternate Residential RWCDS

	Existing Condition		No-Action Condition		With-Action Condition		Increment
LAND USE							
Residential	☐ YES	**X** NO	☐ YES	**X** NO	**X** YES	☐ NO	
If "yes," specify the following:							
Describe type of residential structure	N/A		N/A		Multi-family residential		Multi-family residential
No. of dwelling units	N/A		N/A		778		+259 DUs
No. of low- to moderate-income units	N/A		N/A		778		+Up to 78 DUs
Gross floor area (sf)	N/A		N/A		258,904 sf		+258,904 gsf
Commercial	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
Manufacturing/Industrial	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	N/A
Community Facility	**X** YES	☐ NO	**X** YES	☐ NO	☐ YES	**X** NO	
If "yes," specify the following:							
Type	Child care facility		Child care facility				Eliminating child care facility
Gross floor area (sf)	16,482 gsf		16,482 gsf				-16,482 gsf
Vacant Land	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
Other Land Uses	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
PARKING							
Garages	☐ YES	**X** NO	☐ YES	**X** NO	**X** YES	☐ NO	
If "yes," specify the following:							
No. of public spaces	N/A		N/A		0		No change
No. of accessory spaces	N/A		N/A		36		+36
Lots	☐ YES	**X** NO	☐ YES	**X** NO	☐ YES	**X** NO	
If "yes," specify the following:							
ZONING							
Zoning classification	R6		R6		C6-4 (DB) (MIH)		Change from R6 to C6-4 (DB) (MIH)
Maximum amount of floor area that can be developed	Residential: 0.78-2.43 (HF) or 3.0 (QH) Community Facility: 4.8		Residential: 0.78-2.43 (HF) or 3.0 (QH) Community Facility: 4.8		Residential: 12.0 (with MIH) Community Facility: 10.0 Commercial: 10.0		Residential: +7.0 (with MIH) Community Facility: +5.2 Commercial: +10.0
Predominant land use and zoning classifications within the land use study area(s) or a 400 ft. radius of proposed project	Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		Land use: institutional, residential, commercial, and mixed-use Zoning: R6, R7-1, C6-1, C6-4, and C6-4.5		No change
POPULATION[1]							
Residents	0		0		521		+521
Workers	37		37		10		-27

Notes:

[1] Existing/No-Action worker population assumes one employee per 450 sf. With-Action population estimates based on the following assumptions: 2.01 residents/DU (average household for Bronx CD 2, 2010 Census) and one residential employee per 25 DUs.

VII. REQUIRED APPROVALS

The applicant requires zoning map and text amendments to implement the Proposed Project. The proposed zoning map and text amendments are discretionary public actions that are subject to both ULURP and CEQR.

The City's ULURP process, mandated by Sections 197-c and 197-d of the New York City Charter, is designed to allow public review of ULURP applications at four levels: Community Board, Borough President, the CPC, and the City Council. The procedure has mandated time limits for review at each stage to ensure a maximum review period of approximately seven months. The process begins with certification by DCP that the ULURP application is complete. The application is then referred to the relevant Community Board (in this case Brooklyn Community Board (CB) 2). The Community Board has up to 60 days to review and discuss the proposal, hold a public hearing, and adopt an advisory resolution on the ULURP application. The Borough President then has up to 30 days to review the application. CPC then has up to 60 days, during which time a public hearing is help on the ULURP application. If CPC approved, the application is then forwarded to the City Council, which has 50 days to review the ULURP application.

CEQR is a process by which agencies review discretionary actions for the purpose of identifying the effects those actions may have on the environment. The City of New York established CEQR regulations in accordance with the New York State Environmental Quality Review Act (SEQRA). In addition, the City has published a guidance manual for environmental review, the *CEQR Technical Manual*. CEQR rules guide environmental review through the following steps:

- *Establish a Lead Agency*. Under CEQR, the "lead agency" is the public entity responsible for conducting environmental review. The environmental review for the proposed actions is a coordinated review, with DCP serving as the lead agency for this project.
- *Environmental Review and Determination of Significance*. The lead agency will determine whether the proposed actions may have a significant impact on the environmental. To do so, an Environmental Assessment Statement (EAS) must be prepared. This EAS will be reviewed by the lead agency, which will determine if the proposed actions and development would result in any significant adverse impacts on the environment.

ATTACHMENT B

SUPPLEMENTAL SCREENING

I. INTRODUCTION

This Environmental Assessment Statement (EAS) has been prepared in accordance with the guidance and methodologies presented in the 2014 *City Environmental Quality Review* (CEQR) *Technical Manual*. For each technical area, thresholds are defined, which, if met or exceeded, require that a detailed technical analysis be undertaken. Using this guidance, preliminary analyses were conducted for all aspects of the proposed actions to determine whether detailed analyses of any technical areas would be appropriate.

Part II of the EAS Form identifies those technical areas that warrant additional assessments. The technical areas that warranted a "Yes" answer in Part II of the EAS form were land use, zoning, and public policy; socioeconomic conditions; community facilities; open space; shadows; historic and cultural resources; urban design and visual resources; hazardous materials; water and sewer infrastructure; transportation; air quality; noise; public health; neighborhood character; and construction. As such, a supplemental screening assessment for each of the aforementioned analysis areas is provided in this attachment. All remaining technical areas detailed in the *CEQR Technical Manual* were not deemed to require supplemental screening, as they do not trigger initial CEQR thresholds and are unlikely to result in significant adverse impacts.

As discussed in **Attachment A, "Project Description,"** two reasonable-worst case development scenarios (RWCDS)have been identified for the proposed actions: (1) the Proposed Project, which comprises the proposed commercial office development as currently contemplated by the applicant; and (2) the Alternate Residential RWCDS, under which the development site is developed with a residential development. For each technical area discussed herein, the worst-case of the two RWCDS has been assessed for environmental review purposes.

The supplemental screening assessment contained herein identified that detailed assessments are required in the areas of land use, zoning, and public policy; socioeconomic conditions; community facilities; open space; shadows; urban design and visual resources; water and sewer infrastructure; transportation; and noise. These analyses are provided in **Attachments C** through **K**, and are summarized below. **Table B-1** identifies for each CEQR technical area whether (a) the potential for impacts can be screened out based on the EAS Form, Part II, Technical Analyses; (b) the potential for impacts can be screened out based on a supplemental screening provided herein per the *CEQR Technical Manual*; or (c) a more detailed assessment is required to make an impact determination.

Table B-1: Summary of CEQR Technical Areas Screening

Technical Area	Screened out per EAS Form	Screened out per Supplemental Screening	Detailed Analysis Required
Land Use, Zoning, & Public Policy			X
Socioeconomic Conditions			X
Community Facilities			X
Open Space			X
Shadows		X	
Historic & Cultural Resources		X	
Urban Design & Visual Resources			X
Natural Resources	X		
Hazardous Materials		X	
Water & Sewer Infrastructure			X
Solid Waste & Sanitation Services	X		
Energy	X		
Transportation			X
Air Quality			X
Greenhouse Gas Emissions and Climate Change	X		
Noise			X
Public Health		X	
Neighborhood Character		X	
Construction		X	

II. LAND USE, ZONING, AND PUBLIC POLICY

A detailed assessment of land use and zoning is appropriate if a proposed action would result in a significant change in land use or would substantially affect regulations or policies governing land use. An assessment of zoning is typically performed in conjunction with a land use analysis when the action would change the zoning on the site or result in the loss of a particular use. As the proposed actions include zoning map and text amendments, a detailed land use, zoning, and public policy is warranted and is provided in **Attachment C, "Land Use, Zoning, and Public Policy."**

As presented in **Attachment C**, no significant adverse impacts on land use, zoning, or public policy, as defined by the guidelines for determining impact significant set forth in the *CEQR Technical Manual*, are anticipated in the 2021 future with the proposed actions in the primary or secondary study areas. Compared to the future without the proposed actions, the proposed actions under the Proposed Project would introduce new commercial uses into the primary study area; under the Alternate Residential RWCDS new residential uses would be introduced into the primary study area. Under each RWCDS, the commercial and residential uses would be compatible with adjacent land uses within the secondary study area, which are predominantly residential and mixed-use commercial/residential. The proposed actions

would not directly displace any land uses so as to adversely affect surrounding land uses, nor would the proposed actions generate land uses that would be incompatible with land uses, zoning, or public policy in the secondary study area, or cause existing structures to become nonconforming. The proposed actions would not result in land uses that conflict with public policies applicable to the primary or secondary study areas. The Proposed Project and the Alternate Residential RWCDS would both result in developments that would be located in an appropriate location within Downtown Brooklyn, an area that is well-served by infrastructure and characterized by a similar mix of uses under existing conditions.

III. SOCIOECONOMIC CONDITIONS

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

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

As the development site does not contain any existing residential units, the proposed actions would not directly displace any residents. Therefore, an assessment of direct residential displacement is not warranted.

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

There is one existing business on the development site: the 16,482-sf Duffield Children's Center, a child care and pre-K program operated by Brooklyn Community Services (BCS), which is estimated to have a total of 37 employees.[1] As the proposed actions would not directly displace more than 100 employees, an assessment of direct business displacement is not warranted.

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

[1] Based on rate of one employee per 450 sf of community facility floor area.

The proposed actions would not directly displace a business whose products or services are uniquely dependent on its location, are the subject of policies or plans aimed at its preservation, or serve a population uniquely dependent on its services in its present location. The proposed actions under either RWCDS would potentially directly displace a single firm, the Duffield Children's Center, a child care and pre-K program, operated by BCS, which employs an estimated 37 workers at the development site.

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

The Proposed Project would include approximately 209,354 gsf of commercial office space and, therefore, exceeds the preliminary screening assessment threshold of 200,000 sf warranting a preliminary assessment of indirect business displacement. In addition, under the Alternate Residential RWCDS, the proposed actions would introduce 259 residential units, and therefore would exceed the preliminary screening assessment threshold of 200 units warranting a preliminary assessment of indirect residential displacement. As such, the indirect displacement analysis provided in **Attachment D, "Socioeconomic Conditions"** assesses the potential of the proposed actions to result in significant adverse impacts in regards to both indirect businesses and institutional displacement and indirect residential displacement.

As presented in **Attachment D**, a preliminary assessment finds that the proposed actions would not result in significant adverse impacts due to indirect residential displacement. According to the *CEQR Technical Manual*, a population increase of less than five percent of the total study area population would generally not be expected to change real estate market conditions in a study area. The Alternate Residential RWCDS associated with the proposed actions would result in a net increase of 259 dwelling units (DUs), of which at a minimum 65 units are expected to be permanently affordable units pursuant to the Mandatory Inclusionary Housing (MIH) program, compared to the No-Action condition. Conservatively, assuming that the DUs would be fully occupied and would have the same average household size as Brooklyn Community District (CD) 2 in 2010 (2.01 persons per household), this is expected to increase the residential population by 521 persons over the No-Action condition. This equates to a less than three percent increase as compared to the study area population in the future without the proposed actions. Therefore, the Alternate Residential RWCDS would not introduce a substantial new population that could substantially affect residential real estate market conditions in the study area, and no further analysis is required. The Alternate Residential RWCDS is expected to help maintain a more diverse demographic within the study area, as compared with the future without the proposed actions, in which projects will continue the trend towards rising residential rents, as well as incomes in the study area. Pursuant to the Mandatory Inclusionary Housing (MIH) program, any new residential development in the rezoning area would be required to provide at a minimum 25 percent of the residential floor area as permanently affordable housing.

In addition, a preliminary assessment finds that the proposed actions would not result in significant adverse impacts due to indirect business displacement. There are already well-established commercial and residential markets in the study area such that the Proposed Project's new office uses would not substantially alter commercial rents. The proposed actions would not directly displace any type of use that either directly supports businesses in the area or brings a customer base to the area for local

businesses, nor would they directly or indirectly displace residents or workers who form the customer base of existing businesses in the area.

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

No retail would be introduced on the development site under either the Proposed Project or Alternate Residential RWCDS, and, therefore, an assessment of indirect business displacement due to market saturation is not warranted.

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

As presented in **Attachment D**, a preliminary assessment finds that the proposed actions would not have a significant adverse impact on specific industries. The single directly displaced institutional use is not critical to the viability of any specific industry within or outside of the study area. The analysis of indirect business displacement finds that there is no potential for significant indirect business displacement. Therefore, the proposed actions would not directly or indirectly affect business conditions in any industry or category or business within or outside of the study area, and would not substantially reduce employment or impair viability in a specific industry or category of business.

IV. COMMUNITY FACILITIES AND SERVICES

Potential direct or indirect effects of a proposed action can trigger the need for analysis of community facilities. Direct effects occur if a project would "physically alter a community facility, whether by displacement or other physical change." Indirect effects occur if a project would add population to an area, which may potentially affect service delivery.

Direct Effects

As presented in the *CEQR Technical Manual*, if a project would physically alter a community facility, whether by displacement of the facility or other physical change, this "direct" effect triggers the need to assess the service delivery of the facility and the potential effect that the physical change may have on that service delivery. The proposed actions would facilitate the redevelopment of the development site, which is currently occupied by the 20,073-sf Duffield Children's Center, a child care and pre-K program operated by BCS. As publicly-funded child care facilities are community facilities as defined by the *CEQR Technical Manual*, an assessment of the direct effects of the proposed actions on the Duffield Children's Center is warranted and is provided in **Attachment E, "Community Facilities and Services."** As presented in **Attachment E**, the proposed actions would result in the direct displacement of the Duffield Children's Center, a child care facility currently located on the development site. As such, a detailed direct effects

assessment was prepared. In addition, as the displacement of the existing child care facility could place additional demand on other nearby facilities, the potential for indirect effects was also evaluated. As presented in **Attachment E**, while study area child care facilities would operate above capacity in the future with the proposed actions, the Alternate Residential Scenario would only increase the child care utilization rate by 2.0 percent, which is less than the five percent *CEQR Technical Manual* impact threshold. As such, the direct displacement of the existing child care center on the development site would not represent a significant adverse direct impact.

Indirect Effects

While the Proposed Project does not include any residential units and, therefore, would not warrant an assessment of indirect effects on community facilities and services, the Alternate Residential RWCDS would include 259 residential units. The *CEQR Technical Manual* provides density thresholds, which are used to make an initial determination of whether detailed studies are necessary to determine potential indirect impacts.

Public Schools

As presented in the *CEQR Technical Manual*, if a proposed action would generate 50 or more elementary/intermediate school students or 150 or more high school students, a detailed indirect public schools analysis is warranted. Based on the most school multiplier rates for Community School District (CSD) 13 provided by the School Construction Authority (SCA), the Alternate Residential RWCDS's 259 DUs would generate 19 elementary school students, eight intermediate school students, and 24 high school students (refer to **Table B-2**, below). As the Alternate Residential RWCDS would not exceed the *CEQR Technical Manual* analysis thresholds, no further analysis is warranted, and no significant adverse impacts would result.

Table B-2: Anticipated Students Generated by the Alternate Residential RWCDS

	Incremental DUs	Public School Students per DU[1]	Estimated Number of Students Generated		Threshold Triggering Detailed Analysis	Triggers Detailed Analysis?
Elementary	259	0.07	19	27	50	No
Intermediate School		0.03	8			
High School		0.09	24		150	No

Notes:

[1] SCA Projected Public School Ratio for CSD 13 (based on 2012-2016 ACS Data).

Child Care Facilities

The *CEQR Technical Manual* requires a detailed analysis of publicly-funded child care centers when a proposed action would produce substantial numbers of subsidized, low- to moderate-income affordable housing units that may therefore generate a sufficient number of eligible children to affect the availability of slots at group child care facilities. Typically, a proposed action that generates 20 or more eligible children under age six requires further analysis. Based on *CEQR Technical Manual* multipliers, 110 affordable housing units in Brooklyn would yield more than 20 children under age six eligible for publicly-funded child care.

As presented in **Attachment A, "Project Description,"** the Alternate Residential RWCDS would include up to 78 affordable family housing units.[2] As the Alternate Residential RWCDS would introduce fewer than 110 affordable housing units, a detailed analysis is typically not warranted as no significant adverse child care impacts would occur. However, as discussed in the "Direct Effects" section, above, as the displacement of the existing child care facility could place additional demand on other nearby facilities, the potential for indirect effects was evaluated. As presented in **Attachment E, "Community Facilities and Services,"** while study area child care facilities would operate above capacity in the future with the proposed actions, the Alternate Residential Scenario would only increase the child care utilization rate by 2.0 percent, which is less than the five percent *CEQR Technical Manual* indirect impact threshold.

Libraries, Health Care Facilities, and Fire and Police Protection

As the Alternate Residential RWCDS would not result in the introduction of a sizeable new neighborhood and would not result in a more than five percent increase in the ratio of residential units to libraries in Brooklyn (i.e., would result in the development of fewer than 734 DUs, per the *CEQR Technical Manual*), analyses of fire and police protection, health care facilities, and libraries are not warranted, and significant adverse impacts are not anticipated in these technical areas.

V. OPEN SPACE

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 rezoning 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 action would be sufficient to noticeably diminish the ability of an area's open space to serve the existing or future population. According to *CEQR Technical Manual* guidance, if a project is not located within an area that is "underserved" or "well-served" by open space, a project that would generate fewer than 200 residents or 500 employees is typically not considered to have indirect effects on open space.

The Proposed Project would generate a net 853 employees on the development site and, therefore, requires further assessment of the potential for non-residential indirect open space impacts pursuant to *CEQR Technical Manual* guidance. The Alternate Residential RWCDS would result in a net reduction of 27 employees and, therefore, does not warrant further analysis of potential indirect impact on the non-residential open space study area; however, as the Alternate Residential RWCDS would introduce 521 residents, further assessment of the potential for residential indirect open space impacts is warranted for this scenario in accordance with *CEQR Technical Manual* methodology.

As indicated in **Attachment F, "Open Space,"** as two RWCDS were identified for the proposed actions, the 2021 With-Action condition was analyzed separately for the Proposed Project and the Alternate Residential RWCDS. The detailed analysis for the Proposed Project shows that the Proposed Project would decrease the non-residential study area passive open space ratio by 7.39 percent from the No-Action condition. While the non-residential study area's passive open space ratio would decrease by more than five percent from No-Action conditions, it would remain well above the City's guideline ratio of 0.15 acres

[2] 78 affordable units would be developed under MIH Option 2, and 65 affordable units would be developed under MIH Option 1.

per 1,000 workers, at 1.78 acres per 1,000 workers. Therefore, the Proposed Project would not result in a significant adverse open space impact in the non-residential study area. The detailed analysis for the Alternate Residential RWCDS shows that the residential study area total, passive, and active open space ratios would each decrease by 0.8 percent from the No-Action condition. As the total, passive, and active open space ratios would decrease by less than five percent, no significant adverse open space impacts would result.

VI. SHADOWS

As stated in the *CEQR Technical Manual*, a shadow assessment considers projects that result in new shadows long enough to reach a sunlight-sensitive resource. Therefore, a shadow assessment is generally required only if the project would either (a) result in new structures (or additions to existing structures, including the addition of rooftop mechanical equipment) of 50 feet or more; or (b) be located adjacent to, or across the street from, a sunlight-sensitive resource.

As discussed in **Attachment A, "Project Description,"** two RWCDS are being assessed for environmental review purposes: the Proposed Project, which would have a maximum building height of 196 feet and the Alternate Residential RWCDS, which would have a maximum building height of 380 feet. As the Alternate Residential RWCDS would have a taller building height, it represents the worst-case scenario for the shadow analysis.

As the potential for significant adverse shadow impacts could not be screened out, a detailed analysis was prepared, which is provided in **Attachment G, "Shadows."** As presented in **Attachment G,** the Alternate Residential RWCDS would result in incremental shadow coverage (i.e. additional, or new, shadow coverage) on portions of three sunlight-sensitive open space resources: Fort Greene Park, the Gold Street and Flatbush Avenue Extension Plaza, and the New York City Housing Authority (NYCHA) Ingersoll Houses open spaces. The extent and duration of the incremental shadows on these open space resources would generally (1) not significantly reduce or completely eliminate direct sunlight exposure on any of the sunlight-sensitive features found within these two open spaces; and (2) would not significantly alter the public's use of the playgrounds or threaten the viability of vegetation or other elements located within the open spaces. Therefore, incremental shadows from the Alternate Residential RWCDS on these sunlight-sensitive resources would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

VII. HISTORIC AND CULTURAL RESOURCES

Historic and cultural resources are defined as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes properties that have been designated or are under consideration for designation as New York City Landmarks (NYCLs) or Scenic Landmarks, or are eligible for such designation; properties within New York City Historic Districts; properties listed on the State and/or National Register of Historic Places (S/NR); and National Historic Landmarks. An assessment of architectural and/or archaeological resources is usually needed for projects that are located adjacent to historic or landmark structures or projects that require in-ground disturbance, unless such disturbance occurs in an area that has already been excavated.

According the *CEQR Technical Manual* guidance, impacts on historic resources are considered on those sites affected by proposed actions and in the area surrounding identified development sites. The historic resources study area is therefore defined as the project area, as well as an approximately 400-foot radius around the project area. Archaeological resources are considered only in those areas where new excavation or ground disturbance is likely and would result in new in-ground disturbance, as compared to No-Action conditions (the development site).

Based on a letter provided by the New York City Landmarks Preservation Commission (LPC) on October 4, 2017 (included in **Appendix IV**), there are no architecturally or archaeologically sensitive resources on or within 400 feet of the project area. As such, a historic resources assessment is not warranted, and no significant adverse impacts would result.

VIII. URBAN DESIGN AND VISUAL RESOURCES

An area's urban design components and visual resources together define the look and character of the neighborhood. The urban design characteristics of the neighborhood encompass the various components of buildings and streets in the area, including 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 CEQR analysis purposes, this includes only views from public and publicly accessible locations and does not include private residences or places of business.

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

As the proposed actions includes zoning map and text amendments that would change the permitted bulk allowed in the rezoning area, a preliminary urban design analysis is required and is provided in **Attachment H, "Urban Design and Visual Resources."** As discussed therein, the proposed actions would allow a development that differs from what is permitted as-of-right. However, neither the Proposed Project or the Alternate Residential RWCDS would result in significant adverse impacts on urban design as determined by guidance for determining impact significance set forth in the *CEQR Technical Manual*. In the future with the proposed actions, the visual appearance within the primary study area would be enhanced and thus the pedestrian experience of the development site would change; 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 primary study area such that the alteration would negatively affect a pedestrian's experience of the area.
Flatbush Avenue Extension serves as a unique view corridor in the secondary study area. Flatbush Avenue Extension provides users with vantage points to view the surrounding built environment of the secondary study area and Downtown Brooklyn, including a view of the Manhattan Bridge to the north. Neither the Proposed Project or the Alternate Residential RWCDS would obstruct or eliminate any public views or affect the secondary study area Flatbush Avenue Extension view corridor. As such, the proposed actions would not result in any significant adverse impacts to visual resources.

IX. HAZARDOUS MATERIALS

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 semi-volatile organic compounds (VOCs and SVOCs), methane, polychlorinated biphenyls (PCBs), and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic. According to the *CEQR Technical Manual*, the potential for significant impacts from hazardous materials can occur when: (a) hazardous materials exist on a site and (b) an action would increase pathways to their exposure; or (c) an action would introduce new activities or processes using hazardous materials.

Phase I Environmental Site Assessment (ESA)

As the proposed actions would result in new in-ground disturbance at the development site, a Phase I Environmental Site Assessment (ESA) was prepared to determine whether hazardous materials exist on the site. The Phase I ESA was prepared by Tenen Environmental in January 2018 in conformance with the guidelines described in ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process – E1527-13. The Phase I ESA consisted of visual observations, a review of historical information, environmental databases, and information provided by the applicant, as well as interviews with current site representatives. The Phase I ESA evaluated the potential for hazardous materials on the entirety of Block 2061, Lot 100. As outlined in the Phase I ESA, which is provided in **Appendix II**, the development site is occupied by a one-story child care center. Monitoring wells were observed offsite adjacent to the eastern and western development site boundaries, but additional information regarding these wells was not available and they may be associated with investigations on off-site properties. The presence of these wells is not considered a Recognized Environmental Condition (REC).

The 1887 Sanborn map depicts the development site developed with small residential buildings and a church. A commercial building is depicted on the 1904 map. By 1915, the church was replaced with four residential buildings, and by 1938 this area of the development site was vacant. Prior to 1969, a one-story building was constructed and occupied by the N.Y. Telephone Co. Garage (1969-1993) and a children center (1995-2007). The City directory listings indicate historic residential use (1928-1934) and recent commercial use of the development site, including a construction company (2010-2014) and the Duffield Children Center (1997-2005).

The adjoining properties were predominantly depicted with low-rise commercial and residential buildings in the 1887-1915 Sanborn maps. An east adjoining property was occupied by a chapel, a kindergarten, and a boy's club prior to 1938. The 1950 Sanborn map identified a novelty manufacturing facility and an auto repair facility on east adjoining properties. Prior to 1969, the development site block and adjoining blocks to the northwest, east, and southeast were redeveloped as one block, with commercial properties occupying the north adjoining properties and a housing development and associated parking lots occupying the east and south adjoining properties. The west adjoining properties were depicted with a lumber yard on the 1938 map, redeveloped with a two-story building prior to 1950 and occupied by a manufacturing facility, a warehouse, and a school.

All Sanborn maps identified a mix of residential, commercial, and industrial uses in the surrounding area. Manufacturing uses included dyer and bleach manufacturing, chemical manufacturing, wagon

manufacturing, soap manufacturing, unspecified manufacturing, and metalworking, a laboratory, and a dry cleaner. Numerous garages, filling stations, and auto repair shops with gasoline storage tanks were depicted. While uses of individual lots may have changed, the nature of the surrounding area is depicted as relatively constant through 2007, the date of the most recent map.

Regarding the development site and adjoining/surrounding properties, the results of the City directory, historic topographic map, and aerial photograph review are generally consistent with the usage depicted on the historic Sanborn maps, although the City directory listings provide additional information on adjoining property uses. Historic uses of the development site were identified as public/institutional, residential, and commercial, including a garage. Based on the information in the database listings, the historic use of the development site as a garage is not considered a REC. Manufacturing was identified on east and west adjoining properties, and auto repair on an east adjoining property. These historic uses of the east and west adjoining properties likely involved the use and disposal of hazardous materials and petroleum and are considered RECs.

Uses of surrounding properties have included manufacturing, including chemical, garages and auto filling stations with underground gasoline storage, auto repair, metal works, a tannery, and dry cleaning. Uses of the surrounding properties likely involved the use and disposal of hazardous materials and petroleum and are considered potential RECs; however, based on the hydrogeology of the surrounding area and the location of the majority of these historic off-site uses relative to the development site, these uses are not considered RECs.

Listings for the development site were identified on the New York underground storage tank (UST) and LTANKS database, referencing one 1,200-gallon UST containing No. 2 fuel oil and five 550-gallon steel USTs containing gasoline. The six tanks were closed on March 1st, 1993, and the site status is given as unregulated-closed. Spill Number 8902455 was reported on June 8th, 1989 due to tank test failure/air pressure loss and the spill case was closed on June 23rd, 2004. The closed spill case is considered a historic REC (HREC), and is not a REC. Historic underground storage of fuel oil and gasoline on the development site is considered a potential REC. However, there are no open spills or releases recorded at this location and no indications of a release were observed during the development site reconnaissance.

The database search indicated numerous listings of properties within the standard search radii on multiple regulatory databases. Many of these listings are located a significant distance from and/or down-gradient of the development site. All up-gradient leaking tank and spill cases have been closed and are not considered RECs.

The Phase I ESA revealed no evidence of recognized environmental conditions in connection with the property with the exception of the following: historic use of the east adjoining properties for manufacturing and auto repair; and historic use of the west adjoining properties for manufacturing. These are considered RECs warranting further assessment.

To avoid the potential for significant adverse impacts related to hazardous materials, as part of the proposed actions, an (E) designation (E-539) will be assigned to the development site (Block 2061, Lot 100). The (E) designation provides the impetus to identify and address environmental conditions so that significant adverse impacts during site development would be reduced, with the New York City Office of Environmental Remediation (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 ("Environmental Requirements") of the *Zoning Resolution of the City of New York* (ZR).

The text of the hazardous materials (E) designation for the development site (Brooklyn Block 2061, Lot 100) would be as follows:

Task 1-Sampling Protocol

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

Task 2-Remediation Determination and Protocol

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

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

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

All demolition or rehabilitation would be conducted in accordance with applicable requirements for disturbance, handling and disposal of suspect lead-paint and asbestos-containing materials.

X. WATER AND SEWER INFRASTRUCTURE

For assessment purposes, the City's "infrastructure" comprises the physical systems supporting its population, including: water supply, wastewater treatment, and stormwater management. Other infrastructure components are addressed separately per CEQR guidance. Given the size of New York City's water supply system and the City's commitment to maintaining adequate water supply and pressure, few actions have the potential to cause significant impacts on this system. Therefore, only very large

developments or actions having exceptionally large water demands (e.g., more than one million gallons per day) would warrant a detailed water supply assessment. For wastewater and stormwater conveyance and treatment, the *CEQR Technical Manual* indicates that a preliminary assessment is needed if a project is located in a combined sewer area and would exceed the following incremental development of residential units or commercial space thresholds above the predicted No-Action scenario: (a) 1,000 residential units or 250,000 sf of commercial space or more in Manhattan; or (b) 400 residential units or 150,000 sf of commercial space or more in the Bronx, Brooklyn, Staten Island, or Queens.

The Proposed Project would exceed the CEQR analysis threshold for wastewater and stormwater conveyance and treatment; therefore, an assessment of the proposed actions potential for impacts was prepared, which is provided in **Attachment I, "Water and Sewer Infrastructure."** As the Alternate Residential RWCDS would not exceed the minimum analysis thresholds, the analysis presented therein focuses solely on the Proposed Project, and no significant adverse impacts to water and sewer infrastructure would occur in the future with the Alternate Residential RWCDS. As presented in **Attachment I**, the proposed actions would not result in significant adverse impacts on wastewater treatment or stormwater conveyance infrastructure. The Proposed Project is expected to generate approximately 20,935 gallons per day (gpd) of sanitary sewage. This would represent a net increase of 20,465 gpd compared to No-Action conditions and would not result in an exceedance of the Red Hook Water Pollution Control Plant's (WPCP's) permitted capacity. Therefore, the Proposed Project would not result in a significant adverse impact to the City's sanitary sewage conveyance and treatment system.

Depending on the rainfall volume and duration, the total volume to the combined sewer system could be between 0.00 and 0.05 million gallons per day (mgd) in the future with the Proposed Project. Compared to existing conditions, this would represent an increase in combined sewer flows of up to 0.02 mgd, depending on rainfall intensities. With the incorporation of selected stormwater source control best management practices (BMPs) that would be required as part of the site connection approval process, subject to the review and approval of the New York City Department of Environmental Protection (DEP), the peaks stormwater runoff rates would be reduced. Overall, the Proposed Project would not result in significant adverse impacts on the City's sewage conveyance and treatment systems.

XI. TRANSPORTATION

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

The *CEQR Technical Manual* identifies minimum development densities that have the potential to result in significant adverse impacts to traffic conditions and therefore require a detailed traffic analysis. As shown in Table 16-1 of the *CEQR Technical Manual*, actions with a single or multiple land use(s) that would result in fewer than fifty peak hour vehicle trips are generally unlikely to cause significant adverse impacts. As the proposed project would exceed the Level 1 screening threshold, a detailed transportation analysis was prepared for the proposed actions, which is included in **Attachment J, "Transportation."**

As presented in **Attachment J**, based on the following detailed analysis, the anticipated level of new transportation demand generated by the proposed actions is not expected to result in any significant adverse impacts to traffic, parking, transit, or pedestrian conditions in the vicinity of the development

site. Detailed traffic and transit (subway and bus) analyses were screened out, and three pedestrian elements were analyzed as part of the detailed pedestrian analysis. The detailed pedestrian analysis determined that all analyzed pedestrian elements would operate at level of service (LOS) C or better in the future with the proposed actions, and no significant adverse pedestrian impacts would result.

Lastly, while one intersections located within the surrounding area was identified as high accident location, the proposed actions not expected to exacerbate safety concerns at this intersection.

XII. AIR QUALITY

Stationary Sources

Heating and Hot Water Systems

Actions can result in stationary source air quality impacts when they create new stationary sources of pollutants that can affect surrounding uses (such as emission stacks from industrial plants or exhaust from boiler stack(s) used for heating/hot water, ventilation, or air conditioning [HVAC] systems of a building); or when they locate new sensitive uses (schools, hospitals, residences) near such stationary sources. Air quality impacts from HVAC sources are unlikely at distances of 400 feet or more, but a large or major emission source within 1,000 feet warrants further evaluation.

The Proposed Project would use fossil fuels for HVAC purposes. Emissions from the HVAC system of the Proposed Project may affect air quality levels at other nearby existing land uses. According to *CEQR Technical Manual* guidance, the impacts of these emissions would be a function of fuel type, stack height, building size, and location of each emissions source relative to nearby sensitive land uses. As two RWCDS are being analyzed for the proposed actions, separate HVAC screenings were prepared for each scenario. The preliminary screening analyses were conducted using the nomogrpah screening graphs provided in the Air Quality Appendix of the *CEQR Technical Manual*. The nomograph screening graphs indicate the size of the proposed development and distance to the nearest building of a height similar to or greater than the stack height of the proposed building. If the distance between the source and receptor buildings is less than or equal to the threshold distance (i.e., falls above the curve on the nomograph), further analysis is required using the U.S. Environmental Protection Agency's (EPA's) AERSCREEN or AERMOD models. If the source building is taller than the receptor building or the distance between the two buildings falls below the applicable curve provided in the *CEQR Technical Manual* nomographs, a potential significant impact due to boiler stack emissions is unlikely and no further analysis is needed.

Proposed Project

As discussed in **Attachment A, "Project Description,"** the Proposed Project would comprise a total of 209,354 gsf of non-residential floor area and have a maximum building height of 196 feet. A survey of existing residential land uses and other sensitive receptor sites within 400 feet of the development site was conducted through field observation and use of the New York City Open Accessible Space Information System (OASIS) mapping network system. The closest existing or planned residential/commercial building of similar or greater height to the Proposed Project that could be affected by HVAC emissions generated by the Proposed Project is the recently completed 32-story (approximately 351-foot-tall) multi-family mixed-use residential building located at 87 Fleet Place, approximately 50 feet to the west of the

development site. As this building is the closest sensitive receptor of similar or greater height, if the Proposed Project would not cause significant impacts at this site, no impacts would occur at sensitive receptors located further from the development site. Based on the nomograph screening (presented in **Figure B-1**), the potential for the Proposed Project's HVAC system to result in significant adverse impacts on this sensitive receptor (the closest sensitive receptor) could not be screened out. As such, a detailed HVAC analysis of the Proposed Project is warranted and is provided in **Attachment K. "Air Quality."** As presented in **Attachment K**, the result of the detailed HVAC analysis for the Proposed Project is that, with adherence to the minimum stack setback location and the exclusive use of natural gas (to be required pursuant to an (E) designation (E-539)), no significant adverse air quality impacts from the HVAC emissions on existing land uses would occur.

Alternate Residential RWCDS

As discussed in **Attachment A, "Project Description,"** the Alternate Residential RWCDS would comprise a total of 258,904 gsf of residential floor area and have a maximum building height of 380 feet. A survey of existing residential land uses and other sensitive receptor sites within 400 feet of the development site was conducted through field observation and use of the OASIS mapping network system. The closest existing or planned residential building of similar or greater height to the Alternate Residential RWCDS that could be affected by HVAC emissions is the 37-story (399-foot-tall) multi-family mixed-use residential/commercial building located at 150 Myrtle Avenue, approximately 240 feet to the west of the development site. As this building is the closest sensitive receptor of similar or greater height, if the Alternate Residential RWCDS would not cause significant impacts at this site, no impacts would occur at sensitive receptors located further from the development site. Based on the nomograph screening (presented in **Figure B-2**), it was determined that the Alternate Residential RWCDS's HVAC system would not result in significant adverse impacts on this sensitive receptor (the closest sensitive receptor). As such, a detailed HVAC analysis of the Alternate Residential RWCDS is not warranted.

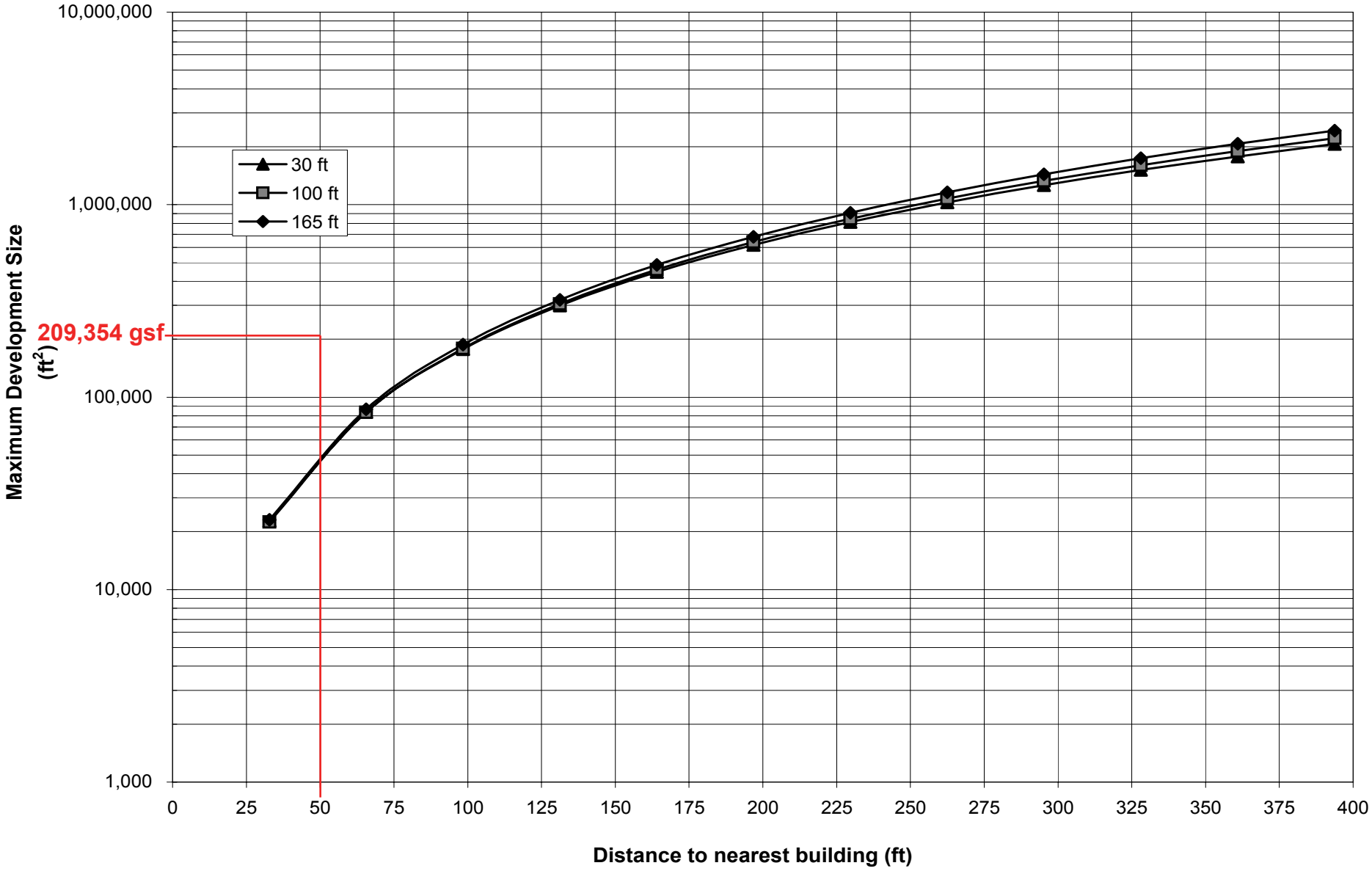
Air Toxics

To assess air quality impacts on the Proposed Project/Alternate Residential RWCDS associated with emission from nearby industrial and major sources, an investigation of potential sources of concern (as defined in the *CEQR Technical Manual*) was carried out. While there are no industrial sources warranting detailed analyses within 400 feet of the project area, one major source is located within 1,000 feet, warranting a detailed air toxics analysis in accordance with *CEQR Technical Manual* methodology. As presented in **Attachment K, "Air Quality,"** the results of the dispersion analysis showed that all maximum estimated impacts would be less than the CEQR significant impact thresholds and National Ambient Air Quality Standards (NAAQS) under both future conditions with the Proposed Project and with the Alternate Residential RWCDS.

Mobile Sources

As stated in the CEQR Technical Manual, a project—whether site-specific or generic—may result in significant mobile source air quality impacts when they increase or cause a redistribution of traffic, create any other mobile sources of pollutants, or add new users near mobile sources. According to the CEQR Technical Manual screening threshold criteria for the City, if 170 or more project-generated vehicles pass through an intersection in any given peak period for CO impact, or if a project would result in 12-23 heavy-duty diesel vehicle trips or equivalent PM emission, depending on road type for PM2.5 impact, there is the potential for mobile air quality impacts and a detailed analysis is required.

FIG App 17-6
SO_2 BOILER SCREEN
COMMERCIAL AND OTHER NON-RESIDENTIAL DEVELOPMENT - FUEL OIL #2



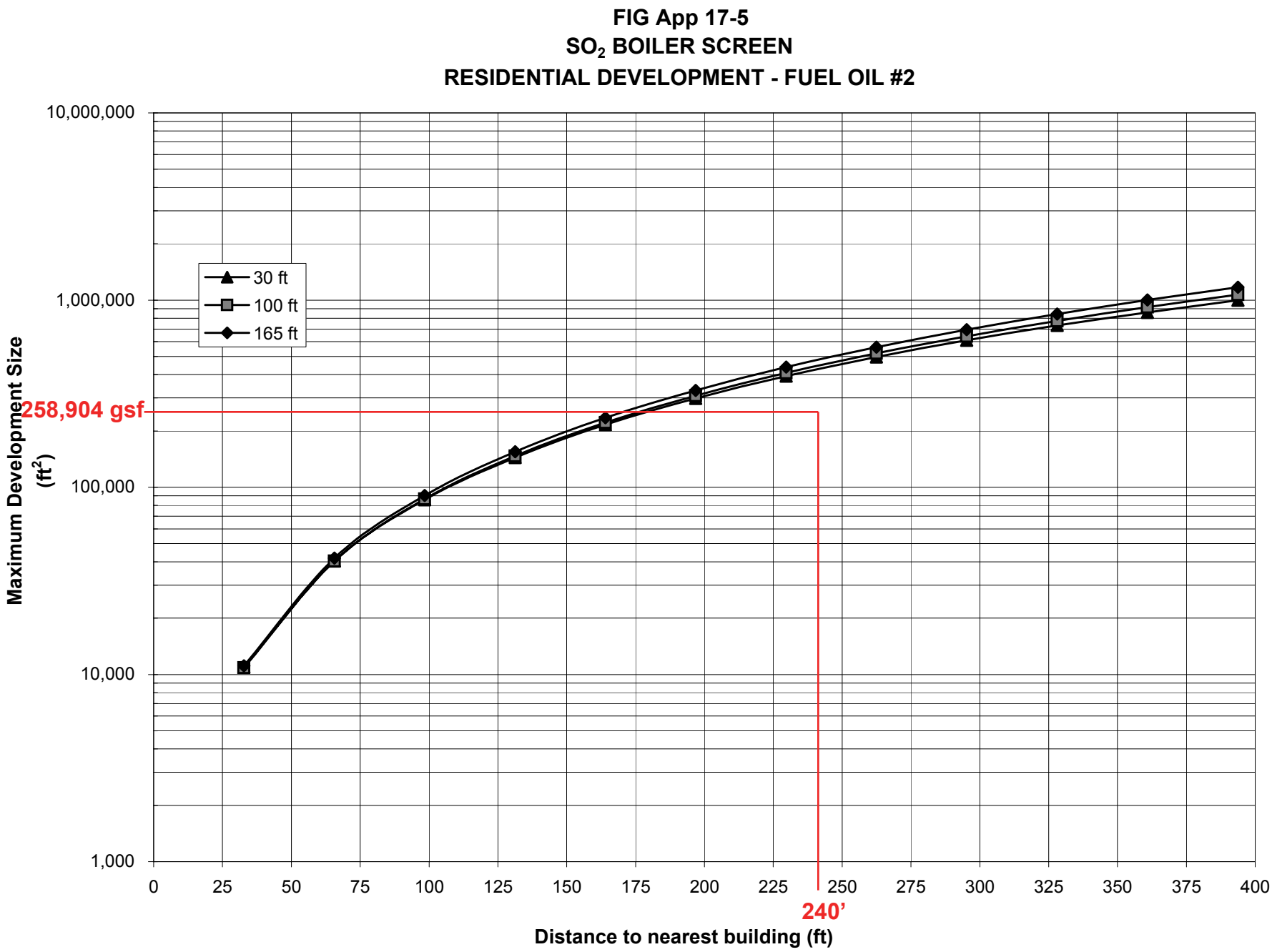


FIG App 17-5
SO2 BOILER SCREEN
RESIDENTIAL DEVELOPMENT - FUEL OIL #2
10,000,000
1,000,000
100,000
10,000
1,000
30 ft
100 ft
165 ft
258,904 gsf
Maximum Development Size (ft2)
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
240'
Distance to nearest building (ft)

As discussed in **Attachment J, "Transportation,"** the proposed actions are not anticipated to result in a substantial number of diesel vehicle trips. The trip generation, travel demand forecast, and associated trip assignments (see Figures K-1a and K-1b) indicates that the proposed project would generate a maximum increment of 12 vehicle trips through intersection of local paved road and a maximum 30 vehicle trips through intersection of arterial. A screening analysis was performed for PM emission which indicates that the emission equivalent would be below the CEQR PM screening threshold values during all peak periods at all intersections. Therefore, a detailed mobile source air quality analysis for PM2.5 is not warranted. In addition, as the Proposed Project would introduce a maximum of 30 trips through any intersections, well below the CO screening threshold of 170. As such, the proposed actions would not exceed the CEQR screening thresholds and therefore a detailed mobile source air quality analysis is not warranted.

Parking Facilities

As stated in the *CEQR Technical Manual*, projects that would result in parking facilities may require a microscale air quality analysis. While the Proposed Project would not include accessory parking, the Alternate Residential RWCDS would include a 36-space below-grade accessory parking garage. As the proposed actions would not result in the development of a new parking with 90 or more spaces (the general threshold used to determine the need for a detailed parking air quality analysis), no further analysis is warranted, and no significant adverse air quality impacts would result.

XIII. NOISE

A noise analysis examines an action for its potential effects on sensitive noise receptors (which can be both indoors and outdoors), including the effects on the interior noise levels of residential, commercial, and certain community facility uses, such as hospitals, schools, and libraries. The principal types of noise sources affecting the City are mobile sources (primarily motor vehicles), stationary sources (typically machinery or mechanical equipment associated with manufacturing operations or building HVAC systems) and construction noise (e.g., trucks, bulldozers, power tools, etc.). An initial impact screening would consider whether a proposed action would generate any mobile or stationary source noise, or would be located in an area with high ambient noise levels.

As the proposed actions would introduce new sensitive uses, a detailed noise analysis was conducted in compliance with *CEQR Technical Manual* guidance to determine whether traffic generated by the proposed actions would have the potential to result in significant noise impacts and determine the level of building attenuation necessary to ensure that the Proposed Project's/Alternate Residential RWCDS's interior noise levels satisfy applicable interior noise criteria.

As presented in **Attachment L, "Noise,"** noise from the increased traffic volumes generated by the proposed actions would not cause significant adverse noise impacts, as the noise levels increases would fall well below the applicable *CEQR Technical Manual* significant adverse impact threshold (3.0 dBA).

Based on the noise analysis presented in **Attachment L**, the maximum predicted L_{10} noise levels adjacent to the development site's western frontage (Fleet Place) are expected to be 70.95 dBA. As the maximum predicted With-Action noise levels would fall in the Marginally Unacceptable (I) CEQR Noise Exposure category, a minimum 28 dBA of composite window/wall attenuation on all frontages of the development site and all future building facades would be required for residential/community facility uses in order to achieve the required residential and community facility interior noise level of 45 dBA or lower. Future commercial uses on the development site would be required to provide an attenuation rating of five dBA less than the residential/community facility requirement on all building frontages/facades.

The composite window/wall noise attenuation described above would be required through the assignment of an (E) designation (E-539) for noise to the applicant-owned development site (Block 2061, Lot 100) in conjunction with the proposed rezoning.

For building facades requiring 28 dBA or attenuation, the text of the (E) designation is as follows:

> **Block 2061, Lot 100: In order to ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all facades in order to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.**

With implementation of the attenuation levels outlined above, the Proposed Project and Alternate Residential RWCDS would provide sufficient attenuation to achieve *CEQR Technical Manual* interior noise level guidelines of 45 dBA for residential/community facility uses and 50 dBA for commercial uses. Therefore, the proposed actions and subsequent RWCDS or Alternate Residential Scenario would not result in any significant adverse noise impacts.

XIV. PUBLIC HEALTH

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

According to *CEQR Technical Manual* guidance, a public health assessment may be warranted if a project results in (a) increased vehicular traffic or emissions from stationary sources resulting in significant adverse air quality impacts; (b) increased exposure to heavy metals and other contaminants in soil/dust resulting in significant adverse impacts, or the presence of contamination from historic spills or releases of substances that might have affected or might affect groundwater to be used as a source of drinking water; (c) solid waste management practices that could attract vermin and result in an increase in pest populations; (d) potential significant adverse impacts to sensitive receptors from noise and odors; (e)

vapor infiltration from contaminants within a building or underlying soil that may result in significant adverse hazardous materials or air quality impacts; (f) exceedances of accepted federal, state, or local standards; or (g) other actions that might not exceed the preceding thresholds but might, nonetheless, result in significant health concerns.

As detailed in the analyses provided in this EAS, the proposed actions would not result in significant adverse impacts in the areas of air quality, water quality, hazardous materials, or noise. Therefore, the proposed actions do not have the potential to result in significant adverse public health impacts, and no further assessment is warranted.

XV. NEIGHBORHOOD CHARACTER

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

The proposed actions would not adversely affect any component of the surrounding area's neighborhood character. The proposed actions would facilitate the development of underutilized land. Neither the Proposed Project nor the Alternate Residential RWCDS would conflict with the surrounding activities, nor would they significantly impact land use patterns or alter the socioeconomic character of the neighborhood. Both RWCDS scenarios would also improve the pedestrian character of the development site, introducing an active ground floor.

While the proposed actions would increase traffic, pedestrian, and noise levels in the surrounding area, these increases would not be out of character with the existing neighborhood context. Moreover, the proposed actions are not expected to result in any significant adverse impacts on the technical areas related to neighborhood character, including land use, socioeconomic conditions, open space, urban design and visual resources, historic and cultural resources, shadows, transportation, and noise. Therefore, the proposed actions would not result in a significant adverse impact on neighborhood character.

XVI. CONSTRUCTION

Although temporary, construction impacts can include noticeable and disruptive effects from an action that is associated with construction or could induce construction. Determination of the significance of the construction impacts and the need for mitigation is generally based on the duration and magnitude of the impacts. Construction impacts are usually important when construction activity could affect traffic conditions, archaeological resources, the integrity of historic resources, community noise patterns, and/or air quality conditions.

The Proposed Project is expected to be constructed over an approximately 24-month period, and is therefore considered short-term. Most construction activity would take place Monday through Friday, although the delivery and installation of certain equipment could occur on weekend days. Hours of construction are regulated by the DOB and apply in all areas of the City. In accordance with those

regulations, almost all work would occur between 7 AM and 6 PM on weekdays, although some workers would arrive and begin to prepare work areas before 7 AM. Occasionally, Saturday or overtime hours could be required to complete time-sensitive tasks. Weekend work requires a permit from the DOB and, in certain instances, approval of a noise mitigation plan from DEP under the New York City Noise Code.

Construction activities may result in short-term disruption of both traffic and pedestrian movements in the vicinity of the development site. This would occur primarily due to the potential temporary loss of curbside lanes from the staging of equipment and the movement of materials to and from the development site. Most construction traffic would take place outside of the AM and PM traffic peak hours in vicinity of the development site due to typical construction hours. Additionally, construction may at times result in temporary closings of sidewalks adjacent to the development site in order to accommodate construction vehicles, equipment, and supplies. The construction site would be surrounded by construction fencing and barriers as required by DOB. While it is anticipated that some sidewalks immediately adjacent to the construction site would be closed to accommodate heavy loading areas for at least several months of the construction period for the site, detailed Maintenance and Protection of Traffic (MPT) plans for the construction site would need to be submitted for approval to the DOT Office of Construction Mitigation and Coordination (OCMC), the entity that insures critical arteries are not interrupted, especially in peak travel periods. Given the limited duration of any obstructions, these conditions would not result in significant adverse impacts on traffic and transportation conditions.

Noise associated with construction would be limited to typical construction activities and would be subject to compliance with the New York City Noise Code and EPA noise emission standards for construction equipment. These controls and the temporary nature of construction activity would assure that there would be no significant adverse noise impacts associated with construction activity.

As described in **Section VII, "Historic and Cultural Resources,"** there are no historic resources within 90 feet of the development site; therefore, no significant adverse construction-related impacts on historic and cultural resources would result. In addition, as presented **in Section IX, "Hazardous Materials,"** above, an (E) designation would be assigned to the development site, which would require the applicant to prepare a Construction Health and Safety Plan (CHASP) if the presence of hazardous materials in the development site is confirmed based on the results of the Phase II Environmental Site Investigation (ESI). As such, no significant adverse hazardous materials impacts would occur during construction of the Proposed Project. Lastly, as construction of the Proposed Project would not be considered long-term (more than two years) and the Proposed Project's short-term construction would not directly affect a technical area (such as impeding the operation of a community facility), further assessment is not warranted for other technical areas, and no significant adverse impacts would result.

ATTACHMENT C

LAND USE, ZONING, AND PUBLIC POLICY

I. INTRODUCTION

The applicant, Fleet Center, Inc., is seeking a series of discretionary actions to facilitate the development of a commercial office building at 101 Fleet Place (Brooklyn Block 2061, Lot 100) in the Downtown Brooklyn neighborhood of Brooklyn Community District (CD) 2. Specifically, the applicant is seeking zoning map and text amendments from the New York City Planning Commission (CPC).

As outlined in the *City Environmental Quality Review* (CEQR) *Technical Manual*, a detailed assessment of land use and zoning is appropriate if a proposed action would result in a significant change in land use or would substantially affect regulations or policies governing land use. An assessment of zoning is typically performed in conjunction with a land use analysis when the action would change the zoning on the site or result in the loss of a particular use. As the proposed actions include zoning map and text amendments, a detailed assessment of land use, zoning, and public policy is warranted and is provided in this attachment. As discussed in **Attachment A, "Project Description,"** two reasonable worst-case development RWCDS are being assessed for environmental review purposes: the Proposed Project, which would comprise a total of 209,354 gross square feet (gsf) of commercial office floor area, and the Alternate Residential RWCDS, which would comprise a total of 258,904 gsf of residential floor area (including 259 dwelling units (DUs)). As such, the assessment presented herein considers the effects of both RWCDS on the land use study areas, as well as the proposed actions' potential effects on zoning and public policy in the land use study areas.

II. PRINCIPAL CONCLUSIONS

No significant adverse impacts on land use, zoning, or public policy, as defined by the guidelines for determining impact significant set forth in the *CEQR Technical Manual*, are anticipated in the 2021 future with the proposed actions in the primary or secondary study areas. Compared to the future without the proposed actions, the Proposed Project would introduce new commercial uses into the primary study area; the Alternate Residential RWCDS new residential uses would be introduced into the primary study area. Under each RWCDS, the commercial and residential uses would be compatible with adjacent land uses within the secondary study area, which are predominantly residential and mixed-use commercial/residential. The proposed actions would not directly displace any land uses so as to adversely affect surrounding land uses, nor would the proposed actions generate land uses that would be incompatible with land uses, zoning, or public policy in the secondary study area, or cause existing structures to become nonconforming. The proposed actions would not result in land uses that conflict with public policies applicable to the primary or secondary study areas. The Proposed Project and the Alternate Residential RWCDS would both result in developments that would be located in an appropriate location within Downtown Brooklyn, an area that is well-served by infrastructure and characterized by a similar mix of uses under existing conditions.

III. METHODOLOGY

The proposed actions include zoning map and text amendments, which would affect land use, zoning, and public policy. Land use, zoning, and public policy are addressed and analyzed for two geographical areas for the proposed actions. For the purpose of this assessment, the primary study area encompasses the project area, which comprises both the applicant-owned development site (Block 2061, Lot 100) and portions of the non-applicant-owned Lot 80 and Lot 110 that are located within the rezoning area. The secondary study area encompasses areas that have the potential to experience indirect impacts as a result of the proposed actions. The secondary study area extends an approximate 400-foot radius from the boundary of the primary study area, and is generally bounded by lots fronting Myrtle Avenue to the north, lots fronting Willoughby Street to the south, lots fronting Ashland Place to the east, and lots fronting Flatbush Avenue Extension to the west. Both the primary and secondary study areas have been established in accordance with *CEQR Technical Manual* guidance and are presented in **Figure C-1**.

The analysis of land use, zoning, and public policy first provides a description of the existing land use, zoning, and public policy conditions in each of the study areas. Existing land uses in the primary and secondary study areas were determined based on the 2016 New York City Primary Land Use Tax Lot Output (PLUTO) data files and October 2017 field visits. New York City Zoning and Land Use (ZoLa), New York City Zoning maps, and the *Zoning Resolution of the City of New York* (ZR) were consulted to describe existing zoning districts in the study areas. Relevant public policies recognized by the New York City Department of City Planning (DCP) and other City agencies were utilized to describe existing public policies pertaining to the primary and secondary study areas.

The analysis then projects land use, zoning, and public policy conditions in the 2021 analysis year without the proposed actions. This is the "No-Action" or "future without the proposed actions" condition, which is developed by identifying proposed developments and other relevant changes anticipated to occur in the primary and secondary study areas within this time frame. The No-Action condition describes the baseline conditions in the study areas against which the proposed actions' incremental changes are measured. Finally, the analysis projects land use, zoning, and public policy conditions in 2021 with approval of the proposed actions. This is the "With-Action" or "future with the proposed actions" condition.

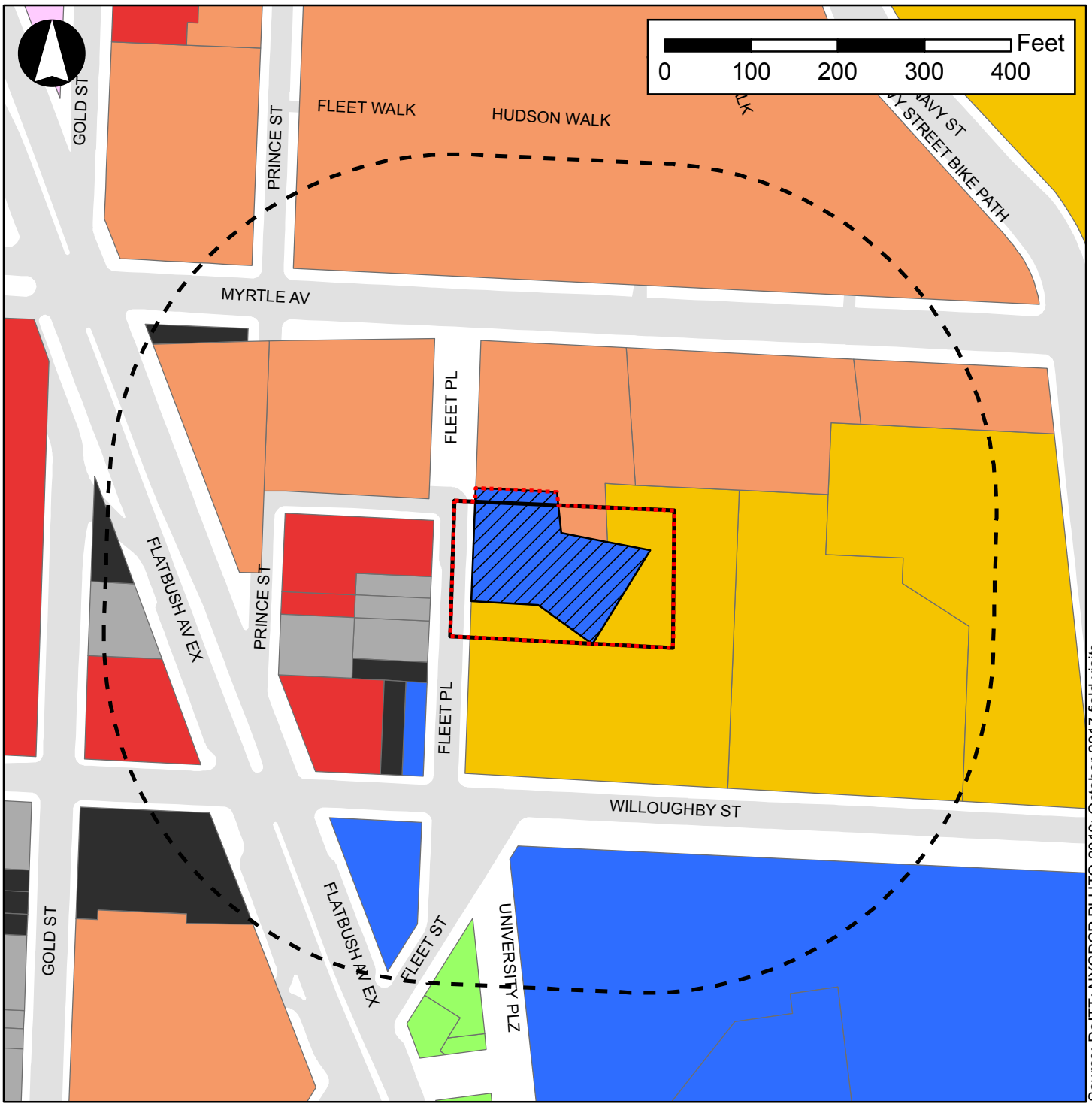
IV. PRELIMINARY ASSESSMENT

Land Use and Zoning

A preliminary assessment, which includes a basic description of existing and future land uses and zoning, should be provided for all projects that would affect land use or would change the zoning on a site, regardless of the project's anticipated effects. As the proposed actions include zoning map and text amendments, a detailed assessment of land use and zoning is warranted and provided in **Section V, "Detailed Assessment,"** below.

Public Policy

According to *CEQR Technical Manual* guidance, 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



Legend

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

Land Use

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

policy controlling land use, requires an analysis of public policy. A preliminary assessment of public policy should identify and describe any public policies, including formal plans or published reports that pertain to the study areas. If the proposed action could potentially alter or conflict with identified policies, a detailed assessment should be conducted; otherwise, no further analysis of public policy is necessary.

The primary study area is not located in an urban renewal area, a designated Industrial Business Zone (IBZ), a Business Improvement District (BID), a designated historic district, or within an area defined by an adopted 197-a plan; nor would the proposed actions involve the siting of any public facilities (Fair Share). As such, no significant material changes to existing regulations of policy would occur, and a detailed analysis of public policy is not warranted.

V. DETAILED ASSESSMENT

Existing Conditions

Land Use

Primary Study Area (Project Area)

Rezoning Area

As described in **Attachment A, "Project Description,"** the 33,039-sf rezoning area is located on the east side of Fleet Place mid-block between Myrtle Avenue to the north and Willoughby Street to the south. The rezoning area has 164'-4" of frontage on Fleet Place and extends at a depth of 200 feet. The rezoning area includes a 19,388-sf portion of the applicant-owned development site and 11,528 sf and 2,130 sf of the non-applicant-owned Lot 80 and Lot 110, respectively, which are each discussed separately below.

Development Site

The approximately 20,536-sf development site comprises the irregularly shaped Block 2061, Lot 100 in the Downtown Brooklyn neighborhood of Brooklyn CD 2. The development site is located on the east side of Fleet Place, mid-block between Myrtle Avenue (approximately 172 feet to the north) and Willoughby Street (approximately 200 feet to the south). The development site has approximately 127 feet of street frontage on Fleet Place. The development site is currently occupied by a one-story 16,482-sf day care facility (Duffield Children's Center) operated by Brooklyn Community Services (BCS). The facility is open from 8 AM to 6 PM year round, and, based on June 2018 enrollment data from the Administration of Children's Services (ACS), the facility currently has 47 enrolled children ages 2.9 to 4.5.

Remainder of the Rezoning Area

As noted above, in addition to comprising a 19,388-sf portion of the applicant-owned development site, the rezoning area includes small portions of the non-applicant-owned Lot 80 and Lot 110. 175 Willoughby Street (Lot 80) is a 78,478-sf irregular-shaped property containing a 15-story, 187,667-sf multi-family residential building that is one of three 15-story residential towers that comprise the multi-family University Tower development located on the southern, central, and eastern portions of Block 2061 along Willoughby Street and Ashland Place. 81 Fleet Place (Lot 110) is a 33,656-sf irregular-shaped property

containing a 15-story, 265,417-sf mixed-use commercial/residential building that is one of three buildings that comprise the mixed-use Red Apple development located on the northern portion of Block 2061 along Myrtle Avenue.

Secondary Study Area

The secondary study area for land use encompasses the area within approximately 400 feet of the project area.[1] As shown in **Table C-1** below, the secondary study area is predominantly comprised of residential and mixed-use commercial/residential buildings, which represent approximately 29.0 and 63.6 percent, respectively, of the built floor area in the secondary study area, as well several commercial/office buildings and public facilities and institutions, which represent approximately 3.2 and 1.8 percent, respectively, of the built floor area in the secondary study area. All residential uses in the secondary study area are multi-family elevator buildings. The secondary study area also contains six parcels of land that are utilized as parking facilities and three parcels of vacant land; these land uses comprise approximately 4.3 and 4.4 percent, respectively, of the secondary study area lot area. There are no industrial/manufacturing or transportation/utility uses within the secondary study area. While there are no open space uses within the secondary study area, Fort Greene Park, a 30.17-acre public park is located one block to the east of the secondary study area boundary.

Table C-1: Existing Land Uses within the Secondary Study Area

Use	Lot Area (sf)	% of Total Land Area	Built Area (gsf)	% of Total Built Area
Residential One & Two Family	0	0.0%	0	0.0%
Residential Multi-Family Walk-Up	0	0.0%	0	0.0%
Residential Multi-Family Elevator	233,017	51.4%	563,001	29.0 %
Residential Total	*233,017*	*51.4%*	*563,001*	*29.0%*
Mixed Residential & Commercial	142,477	31.4%	1,236,941	63.6%
Commercial & Office	25,414	5.6%	61,441	3.2%
Industrial & Manufacturing	0	0.0%	0	0.0%
Transportation & Utility	0	0.0%	0	0.0%
Public Facilities & Institutions	12,925	2.9%	34,810	1.8%
Open Space	0	0.0%	0	0.0%
Parking Facilities	19,340	4.3%	4,160	0.2%
Vacant	20,107	4.4%	44,000	2.3%
Totals	***453,280***	***100.0%***	***1,944,353***	***100.0%***

Source: 2016 PLUTO data; October 2017 field visits.
Note: Total lot areas and built areas included for all lots which have 50 percent or more of their area within a 400-foot radius of the rezoning area (refer to **Figure C-1**).

As presented in **Figure C-1**, residential uses are located to the north, east, and southeast of the primary study area. Residential uses comprise a total of approximately 51.4 percent of the secondary study area's lot area and nearly a third (29.0 percent) of the secondary study area's building area. High density multi-family residential buildings are present to the east and southeast of the primary study area, along

[1] Includes tax lots which have 50 percent or more of their area within a 400-foot radius of the rezoning area.

Willoughby Street and Ashland Place, and include two 15-story residential buildings that comprise the remainder of the multi-family University Tower development. To the north of the primary study area, located along Myrtle Avenue, residential uses are located in large, mixed-use commercial/residential buildings with ground floor commercial uses. Mixed-use commercial/residential uses represent approximately 31.4 percent of the secondary study area's lot area and over half (63.6 percent) of the secondary study area's building area. Many of the mixed-used commercial/residential developments present in the secondary study area have been constructed since 2004, a result of the 2004 Downtown Brooklyn Redevelopment Project. Toren, a 37-story tower located in the northwest corner of the secondary study area, was completed in 2010, representing one of the first development projects to rise after passage of the 2004 rezoning, while the Eagle, a 32-story development located at 86 Fleet Place, to the northwest of the rezoning area, was completed in 2017 but is not yet fully occupied, representing one of the latest mixed-used developments to be completed within the secondary study area. In addition, Ingersoll Houses, a tower-in-the-park New York City Housing Authority (NYCHA) development containing 1,826 apartments in 21 six-story buildings, as well as community facility uses, is located in the northern portion of the secondary study area, across Myrtle Avenue.

Commercial and parking uses are found to the west of the primary study area, located on the block bounded by Fair Street, Fleet Place, Prince Street, and Willoughby Street. Commercial uses represent approximately 5.6 percent of the secondary study area's lot area and 3.2 percent of the secondary study area's building area, while parking uses represent 4.3 percent of the secondary study area's lot area. Commercial uses in the secondary study area consist of a one-story car wash and a four-story co-working office building.

As shown in **Figure C-1**, public facility and institutional uses are generally located to the south of the primary study area (along Willoughby Street). In addition to the child care center located on the development site (Duffield Children's Center), the secondary study area includes three public facility and institutional uses: Boys Town of New York, an at-risk children and youth center, Fort Greene Health Center, a New York City Health immunization clinic, and the Brooklyn campus of Long Island University (LIU), a private higher education facility. In total, public facility and institutional uses represent approximately 2.9 percent of the secondary study area's lot area and 1.8 percent of the secondary study area's building area.

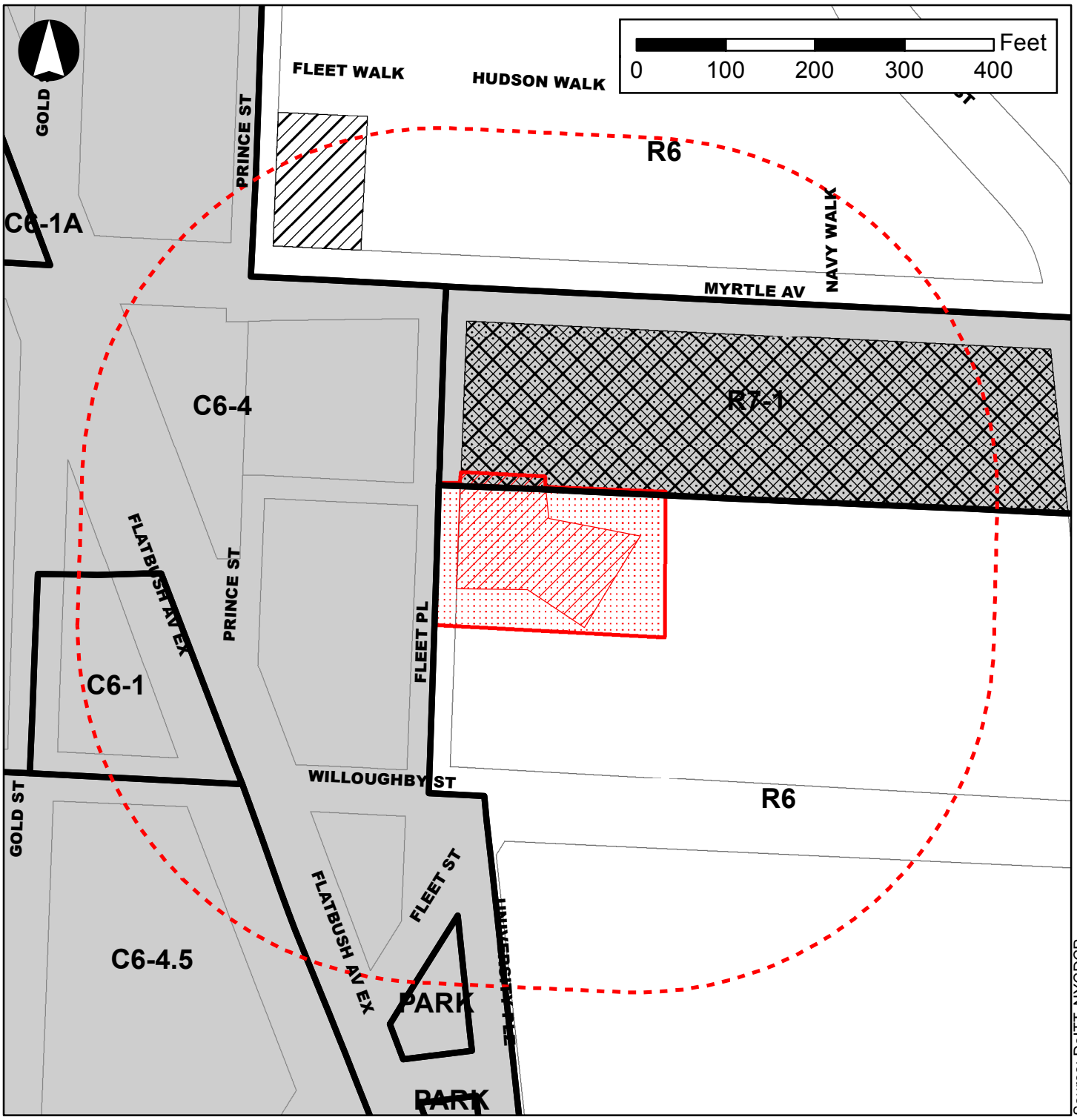
Zoning

Primary Study Area (Project Area)

Rezoning Area

As presented in **Figure C-2**, the rezoning area is currently zoned R6. R6 districts are widely mapped in built-up, medium-density areas and can range in character from neighborhoods with a diverse mix of building types and heights to large scale "tower in the park" developments. Developers in R6 districts can choose between two sets of bulk regulations: standard Height Factor regulations, which produce small multi-family buildings on small zoning lots and, on larger lots, tall buildings set back from the street; and optional Quality Housing regulations that produce high lot coverage buildings with height limits that often reflect the scale of older, pre-1961 apartment buildings in the neighborhood. Under Height Factor regulations, the maximum permitted residential floor area ratio (FAR) ranges from 0.78 (for a single story building) to 2.43 at a typical height of 13 stories; the open space ratio (OSR) ranges from 27.5 to 37.5. Residential

Figure C-2
Existing Zoning



Legend

- Rezoning Area
- Development Site
- Primary Study Area (Project Area)
- Secondary Study Area (400-Foot Radius)
- Zoning District Boundaries
- C1-3 Overlay
- C2-4 Overlay
- Special Downtown Brooklyn (DB) District

buildings developed pursuant to R6 (Height Factor) regulations require off-street parking for 70 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required. Under Quality Housing regulations, the maximum permitted FAR is 3.0 on wide streets outside of the Manhattan Core and 2.2 on narrow streets. Community facility uses are permitted up to 4.8 FAR in R6 districts under both Height Factor and Quality Housing regulations. Residential buildings developed pursuant to R6 (Quality Housing) regulations require off-street parking for 50 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required.

Development Site

The development site is located within two zoning districts. Approximately 19,388 sf is located within the rezoning area and is zoned R6, as noted above, while the northern approximately 1,148 sf is located outside of the rezoning area, is zoned R7-1/C2-4, and is located in the Special Downtown Brooklyn (DB) District. The R7-1/C2-4 (DB) district was established in 2004 as part of the Downtown Brooklyn Redevelopment Project approved in June 2004 (ULURP No. 04071ZMK and CEQR No. 03DME016K). R7 districts are medium-density apartment house districts. Developers in R7 districts can choose between Height Factor and optional Quality Housing bulk regulations. Under Height Factor regulations, the maximum permitted residential FAR ranges from 0.87 to a high of 3.44; the OSR ranges from 15.5 to 25.5. Residential buildings developed pursuant to R7-1 (Height Factor) regulations require off-street parking for 60 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required. Under Quality Housing regulations, the maximum permitted FAR is 4.0 on wide streets outside of the Manhattan Core and 3.44 on narrow streets. Community facility uses are permitted up to 4.8 FAR in R7 districts under both Height Factor and Quality Housing regulations. Residential buildings developed pursuant to R7-1 (Quality Housing) regulations typically require off-street parking for 50 percent of a building's dwelling units, and parking can be waived if five or fewer spaces are required; however, as noted below, the Special DB District has reduced accessory parking requirements, which supersede the underlying R7 parking regulations. A C2-4 (mapped along Myrtle Avenue to the north) extends to encompass the northern 3,358 sf of the rezoning area, as well. C2-4 commercial overlays are mapped along streets that serve local retail needs. Typical retail uses include neighborhood grocery stores, restaurants, and beauty parlors; C2 districts permit a slightly wider range of uses than C1 districts, such as funeral homes and repair services. C2-4 commercial overlays, when mapped in R6-R10 districts, allow up to 2.0 FAR or commercial uses. In mixed-use buildings, commercial uses are limited to one or two floors and must also be located below residential uses. Lastly, the Special DB District establishes special height and setback regulations and urban design guidelines to support the continued growth of Downtown Brooklyn as a unique mixed-use area. The Special DB District also has a reduced accessory parking requirement, requiring off-street parking for only 20 percent of a building's dwelling units.

Pursuant to ZR Section 77-11, whenever a zoning lot "is divided by a boundary between districts in which different uses are permitted, the use regulations applicable to the district in which more than 50 percent of the lot area of the zoning lot is located may apply to the entire zoning lot, provided that the greatest distance from the mapped district boundary to any lot line of such zoning lot in the district in which less than 50 percent of its area is located does not exceed 25 feet." As such, the R6 district mapped in the southern 115.31 feet of the development site applies to the entirety of the development site. Therefore, with maximum permitted residential and community facility FARs of 3.0 and 4.8, respectively, and a built FAR of 0.8, the development site is underbuilt pursuant to current zoning.

Secondary Study Area

The secondary study area includes residential districts (R6 and R7-1) mapped to the north, south, and east and commercial districts (C6-4, C6-4.5, and C6-6) mapped to the west; a C2-4 commercial overlay is also mapped to the north, the Special DB District is mapped on portions of the secondary study area to the north and west, and one block within the secondary study area is a mapped Inclusionary Housing (IH) area. Each of these zoning designations is discussed below.

The R6 district that is mapped within the rezoning area extends to the east and south in the secondary study area; in addition, the north side of Myrtle Avenue east of Prince Street is mapped R6. As discussed above, R6 districts have maximum residential FARs of up to 2.43 for new buildings constructed pursuant to Height Factor regulations and up to 3.0 on for new buildings constructed pursuant to Quality Housing regulations. Community facility uses are permitted up to 4.8 FAR in R6 districts under both Height Factor and Quality Housing regulations. The R6 districts mapped in the secondary study area are not located within the Special DB District and are not mapped IH areas. There is one C1-3 commercial overlay mapped in the R6 district at the northeast corner of Myrtle Avenue and Prince Street. The C1-3 commercial overlay allows up to 2.0 of commercial uses in the R6/C1-3 district in which it is mapped.

The R7-1/C2-4 district mapped on the northern 12.61 feet of the development site continues along the southern side of Myrtle Avenue between Fleet and Ashland places. As noted above, R7 districts have maximum residential FARs of up to 3.44 pursuant to Height Factor regulations and up to 4.0 pursuant to Quality Housing regulations. Community facility uses are permitted up to 4.8 FAR in R7 districts under both Height Factor and Quality Housing regulations. In addition, up to 2.0 FAR of commercial uses are permitted in the R7-1/C2-4 district. The entirety of the secondary study area that is mapped R7-1/C2-4 is located within the Special DB District, and supplemental zoning requirements apply to the area. Specifically, per ZR Article X, Chapter 1, supplemental retail, glazing, and streetwall continuity requirements apply along Myrtle Avenue, in addition to reduced accessory parking requirements.

Directly west of the primary study area is a C6-4 (DB) district that was mapped as part of the 2004 Downtown Brooklyn Redevelopment Project; the C6-4 (DB) district is also mapped on the block north of Myrtle Avenue between Prince and Gold streets. Also to the west of the primary study area are a C6-6 (DB) (IH) district (mapped on the triangular block bordered by Gold Street, Willoughby Street, and Flatbush Avenue Extension) and a C6-4.5 (DB) district to the west of Flatbush Avenue Extension, south of Willoughby Street. C6 districts are R10 equivalent districts that permit a wide range of high-bulk commercial uses requiring a central location, in addition to residential and community facility uses. Corporate headquarters, large hotels, department stores, and entertainment facilities in high-rise mixed-use buildings are permitted in C6 districts. C6 districts are well-served by mass transit, and off-street parking is generally not required.

The C6 districts mapped in the secondary study area are all within the Special DB District and have associated supplemental density, urban design, height, and parking regulations that supersede the underlying C6 zoning requirements. In terms of bulk, per ZR Article X, Chapter 1, the maximum permitted commercial and community facility FARs applicable in C6-4.5 and C6-6 districts are 12.0 and 15.0, respectively; residential uses are permitted up to 9.0 FAR in C6-6 (DB) districts. The Special DB District also established flexible height and setback envelopes for C6 districts. Specifically, the tower setback and lot coverage requirements were increased in C6-1 and C6-4 districts; and new height and setback envelopes were established for commercial and community facility buildings in the C6-4.5 district.

In terms of urban design and height regulations applicable within the secondary study area C6 districts, there are:

- Retail continuity and/or non-residential use requirements along the east side of Flatbush Avenue Extension, the west side of Flatbush Avenue Extension (south of Willoughby Street), the south side of Myrtle Street, and Willoughby Street (west of Flatbush Avenue Extension);
- 50 percent transparency requirements along the east side of Flatbush Avenue Extension and the south side of Myrtle Street;
- 70 percent transparency requirements along the south side of Willoughby Street (west of Flatbush Avenue Extension);
- Streetwall continuity requirements along the east and west sides of Flatbush Avenue Extension, the south side of Myrtle Street, and the north side of Willoughby Street;
- Streetwall continuity and sidewalk widening requirements along the south side of Willoughby Street west of Flatbush Avenue Extension;
- Curb cut prohibitions along the east side of Flatbush Avenue Extension, the west side of Flatbush Avenue Extension (south of Willoughby Street), and Willoughby Street (west of Flatbush Avenue Extension); and
- 400-foot maximum building height restrictions on the block bounded by Myrtle Avenue, Flatbush Avenue Extension, Fleet Place, and Willoughby Street and the block bounded by Gold and Prince streets, Myrtle Avenue, and Tech Place.

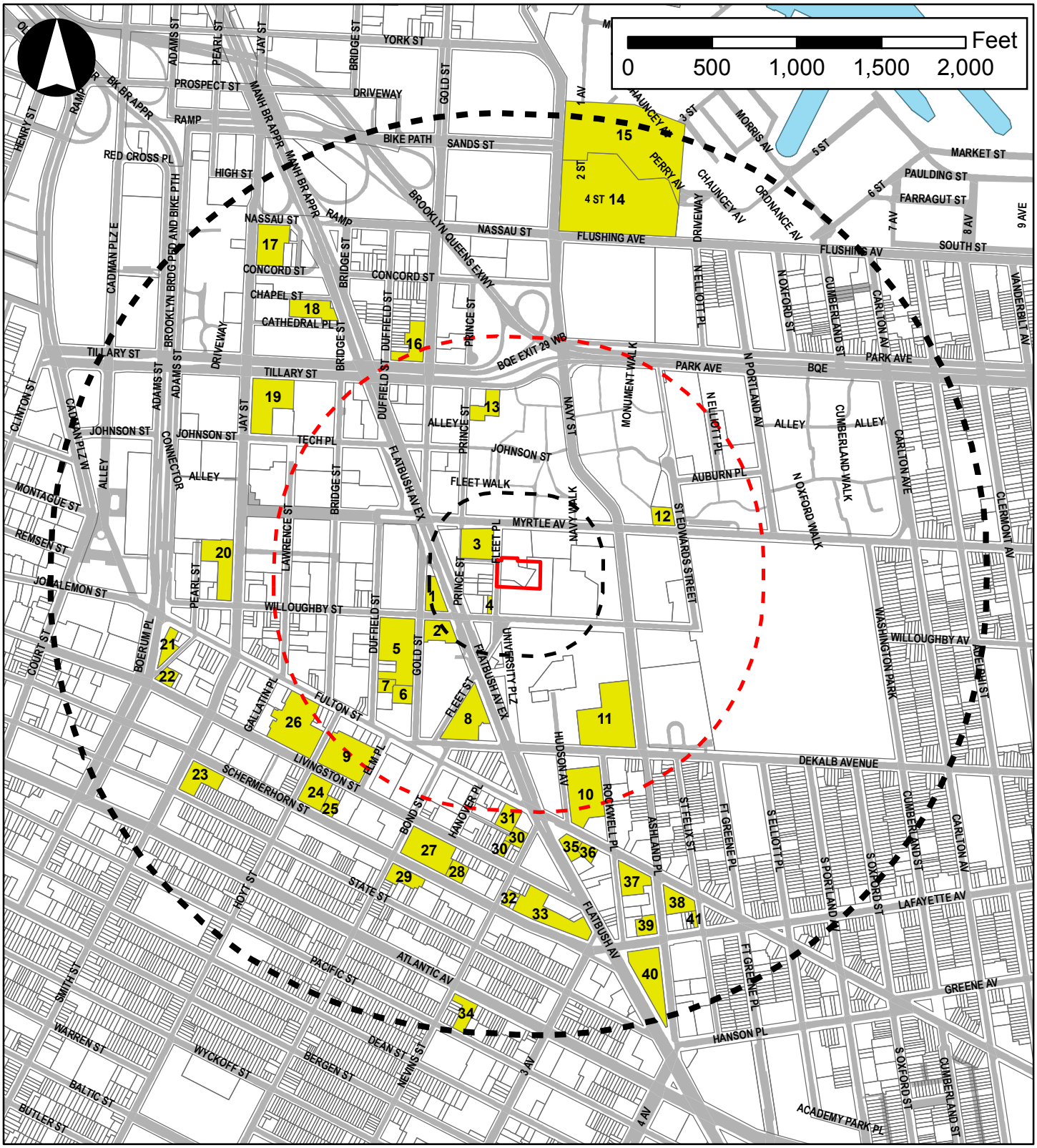
The Future without the Proposed Actions (No-Action Condition)

Primary Study Area (Rezoning Area)

In the future without the proposed actions, the primary study area's existing zoning would remain in place. No new development is expected to occur in the rezoning area in the 2021 future without the proposed actions, and the development site would continue to be occupied by a 16,482-gsf (0.8 FAR) day care facility (Duffield Children's Center) operated by BCS.

Secondary Study Area

There are three known and anticipated developments that are in various stages of development and are expected to be completed and occupied in the 400-foot-radius secondary study area in the 2021 No-Action condition, which are presented in **Figure C-3** and summarized in **Table C-2**, below. Together, these projects will introduce 1,225 DUs, 211,719 gsf of commercial space, and approximately 146 parking spaces into the secondary study area. For purposes of analyses provide in other EAS attachments, No-Action developments anticipated within a ¼-mile and ½-mile radius of the project area are also included in **Table C-2**. As shown in **Table C-2** and **Figure C-3**, including the three projects within the secondary study area, there are 41 projects in various stages of development within a half-mile radius of the project area. These projects, the majority of which are mixed-use commercial/residential projects, are representative of the robust amount of development occurring in Downtown Brooklyn, much of which is made possible by the approval of the 2004 Downtown Brooklyn Redevelopment Project.



Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-Foot Radius)
- 1/4-Mile Radius
- 1/2-Mile Radius
- 1 — No-Action Developments (Refer to Table C-2)

Table C-2: No-Action Developments

Map No.[1]	Project	Market-rate DUs	Affordable DUs	Commercial (sf)	Hotel Rooms	Community Facility (sf)	Industrial (sf)	Parking Spaces	# of Floors	Build Year[2]
Secondary Study Area										
1	141 Willougby St.	189	81	143,710	-	-	-	-	49	2019
2	137 Willoughby St.	458	-	68,000	-	-	-	-	57	2020
3	86 Fleet Place	440	29	10,813	-	-	-	143	32	2018
4	167 Willoughby St.	28	-	-	-	-	-	3	8	-
Subtotal		**1,115**	**110**	**222,523**	**-**	**-**	**-**	**146**		
Within a Quarter-Mile Radius										
5	420 Albee Sq./1 Willoughby St.	-	-	324,804	-	60,656	-	-	36	2020
6	436 Albee Sq.	150	-	23,740	-	-	-	30	28	2018
7	237 Duffield St.	88	22	9,923	-	-	-	-	21	2018
8	9 DeKalb Ave.	417	-	92,694	-	-	-	92	73	2021
9	9 Hoyt St. (Macy's Garage)	476	-	99,652	-	-	-	150	51	2021
10	625 Fulton St.	-	-	610,000	-	-	-	-	36	-
11	61 DeKalb Ave.	336	140	-	-	183,530	-	564	34	-
12	112 St. Edwards St.	-	146	-	-	-	-	-	18	2019
13	202-208 Tillary St.	104	79	13,723	-	-	-	44	23	2020
Subtotal		**1,571**	**387**	**1,174,536**	**-**	**244,186**	-	**880**		
Within a Half-Mile Radius										
14	Admiral's Row Development	-	-	165,000	-	-	356,000	700	5	2019
15	399 Sands St.	-	-	43,000	-	-	172,000	430	9	-
16	260 Gold Street	286	-	-	-	-	-	115	13	-
17	203 Jay St.	270	-	57,904	-	1,744	-	114	33	2018
18	22 Chapel St.	180	-	2,000	-	15,280	-	87	20	2020
19	City Tech/285 Jay St.	-	-	-	-	358,233	-	20	8	2018
20	370 Jay St.	-	-	-	-	530,000	-	-	12	2019
21	Seven Boerum Pl.	122	-	21,016	-	-	-	49	21	-
22	117 Livingston St./415 Red Hook	86	22	13,475	-	-	-	-	21	2018
23	71 Smith St./265 State St.	128	-	-	198	-	-	40	19	2018
24	210 Livingston St.	294	74	24,998	-	-	-	129	25	2018
25	211 Schermerhorn St.	48	-	10,536	-	-	-	-	14	2019
26	422 Fulton Street (Macy's)	-	-	620,000	-	-	-	-	15	2019
27	33 Bond St.	571	143	55,938	-	-	-	132	25	2018
28	285 Schermerhorn St.	84	21	17,406	-	-	-	-	14	-
29	61 Bond St.	-	-	-	285	-	-	-	13	2019
30	10 Nevins St.	184	-	9,730	-	-	-	37	27	2018
31	540 Fulton St.	-	-	221,039	-	-	-	-	19	2020
32	319 Schermerhorn St.	74	-	5,100	-	-	-	-	21	2018
33	333 Schermerhorn St.	600	150	42,000	-	-	-	120	54	2018
34	465 Pacific St.	38	-	7,256	-	-	-	17	7	2018
35	1 Flatbush Ave.	146	37	25,375	-	-	-	-	19	2018
36	570 Fulton St.	97	42	102,279	-	-	-	-	40	2021
37	250 Ashland Pl.	304	282	27,914	-	-	-	-	52	2018
38	620 Fulton St.	-	-	91,593	-	64,112	-	-	11	2018
39	280 Ashland Pl./15 Lafayette Ave.	74	49	2,800	-	21,400	-	-	12	2018
40	300 Ashland Pl.	302	76	65,863	-	49,743	-	175	32	2018
41	37 Lafayette Ave.	6	-	6,473	-	210	-	-	9	-
Subtotal		**3,894**	**896**	**1,638,695**	**483**	**1,040,722**	**528,000**	**2,165**		
TOTAL		**6,580**	**1,393**	**3,035,754**	**483**	**1,284,908**	**528,000**	**3,191**		

Notes:

[1]Refer to **Figure C-3**.

Sources: New York City Department of Buildings (DOB) Building Information System (BIS); Articles from *Curbed NY, Brownstoner, YIMBY,* and *The Real Deal*; and environmental review documents.

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

In the 2021 future with the proposed actions, the rezoning area would be rezoned from R6 to C6-4 (DB), the proposed zoning text amendment would be approved, and the development site would be redeveloped. As discussed in **Attachment A, "Project Description,"** two With-Action RWCDS have been established for the development site; as these scenarios differ in land use, an assessment of each scenario's impact on land use is provided below.

Land Use

Proposed Project

Under the With-Action scenario, the requested zoning map and text amendments would be approved, allowing the applicant to construct the Proposed Project (refer to **Table C-3**). As discussed in greater detail in the "Zoning" section, below, the proposed actions would allow for a maximum commercial/community facility FAR of 10.0 and a maximum residential FAR of 12.0. The Proposed Project would maximize the available 10.0 commercial FAR.

Table C-3: Comparison of Existing, No-Action, and With-Action Conditions – Proposed Project & Alternate Residential RWCDS

Proposed Project			
Use	**No-Action Scenario**	**With-Action Scenario**	**Increment**
Commercial	--	209,354 gsf	+209,354 gsf
Community Facility	16,482 gsf (Child Care)	--	-16,482 gsf
Alternate Residential RWCDS			
Use	**No-Action Scenario**	**With-Action Scenario**	**Increment**
Residential	--	259 units (258,904 gsf)	+259 units (+258,904 gsf)
Community Facility	16,482 gsf (Child Care)	--	-16,482 gsf

Assessment

In the future with the Proposed Project, the proposed actions would result in changes to land use within the primary study area by introducing new commercial uses to the development site. As described above, the primary study area is currently occupied by the Duffield Children's Center and is located in Downtown Brooklyn, a mixed-use neighborhood with a mix of residential, commercial, and community facility uses. The commercial uses that the Proposed Project would introduce would be consistent with, and complementary to, the existing land uses in Downtown Brooklyn, which features many commercial office properties, including the four buildings that comprise the MetroTech Center office complex located along Myrtle Avenue, to the west of the secondary study area, as well as smaller commercial developments, such as the co-working/office building directly across the street from the development site.

As such, the Proposed Project would not generate land uses that would be incompatible with surrounding uses, nor would it displace existing primary study area land uses in such a way as to adversely affect surrounding land uses. Therefore, the Proposed Project would support land use trends, and no significant

adverse land use impacts are expected in the primary study area. In addition, the secondary study area would not undergo any land use changes as a result of the proposed actions. As noted above, the secondary study area includes a mix of residential, commercial, and community facility uses. Therefore, the Proposed Project would not introduce any new land uses that would be incompatible with their surroundings, and no significant adverse land use impacts would occur in the secondary study area.

Alternate Residential RWCDS

Under the Alternate Residential RWCDS, the applicant could construct a 258,904-gsf residential building containing 259 DUs and 36 accessory parking spaces (refer to **Table C-3**. Of the 259 DUs, either 65 DUs (25 percent of units) or 78 DUs (30 percent of units) would be affordable at or below 80 percent of Area Median Income (AMI). The total FAR for the development site would be 12.0, the maximum permitted residential FAR pursuant to the proposed zoning map and text amendments.

Assessment

The Alternate Residential RWCDS would result in changes to land use within the primary study area by introducing residential uses to the development site. As described above, the primary study area is currently occupied by the Duffield Children's Center and is located in Downtown Brooklyn, a mixed-use neighborhood. The residential uses that would be introduced under the Alternate Residential RWCDS would be consistent with, and complementary to, the existing land uses in Downtown Brooklyn, which features numerous high density residential and mixed-use commercial/residential properties, including on sites adjacent to the development site, as highlighted in the "Existing Conditions" section, above.

As such, the Alternate Residential RWCDS would not generate land uses that would be incompatible with surrounding uses, nor would they displace existing primary study area land uses in such a way as to adversely affect surrounding land uses. Therefore, the Alternate Residential RWCDS would support land use trends, and no significant adverse land use impacts are expected in the primary study area. In addition, the secondary study area would not undergo any land use changes as a result of the proposed actions. As noted above, the secondary study area includes a mix of residential, commercial, and community facility uses. Therefore, the Alternate Residential RWCDS would not introduce any new land uses that would be incompatible with their surroundings, and no significant adverse land use impacts would occur in the secondary study area.

Zoning

In the future with the proposed actions, the rezoning area would be rezoned from R6 to C6-4, the Special DB District would be extended to include the entirety of the rezoning area, and the rezoning area would be mapped as a Mandatory Inclusionary Housing (MIH) Area. (see **Appendix I** for the proposed zoning text).

As shown in **Table C-4**, the proposed actions would increase the allowable maximum density to 12.0 FAR for residential uses and 10.0 FAR for commercial/community facility uses.

Table C-4: Comparison of Existing and Proposed Zoning

	Existing R6	Proposed C6-4 (DB) (MIH)
Use Groups	1-4	1-12
Maximum Permitted FAR		
Residential		
Height Factor Regulations	0.78-2.43	12.0[2]
Quality Housing Regulations[1]	2.2	12.0[2]
Community Facility	4.8	10.0
Commercial	Not Permitted	10.0
Manufacturing	Not Permitted	Not Permitted

Source: *Zoning Resolution of the City of New York.*
Notes:
[1] For zoning lots on narrow streets.
[2] With MIH.

Assessment

While the proposed C6-4 (DB) (MIH) zoning designation would facilitate as-of-right development at a higher density than what is currently allowed in the primary study area zoning district, the higher density zoning designation and associated increased density would be appropriate, given the primary study area's location in Downtown Brooklyn and proximity to public transit, and would be consistent with/an extension of the C6-4 (DB) district mapped directly across the street. The primary study area is surrounded on two sides by the Special DB District and is directly across Fleet Place from an existing C6-4 district. On Flatbush Avenue, one block to the west of the primary study area, a C6-6 district is mapped, which allows commercial development up to a maximum FAR of 15.0 and residential development up to a maximum FAR of 10.0. The proposed mapping of a C6-4 district on the rezoning area would involve a small extension of the existing C6-4 district, located to the west of the rezoning area across Fleet Place, onto the rezoning area. Due to the location of the existing C6-4 district to the west of the rezoning area, the proposed actions would not result in development that would be out of character with nearby buildings in adjacent zoning districts. As described in the "Existing Conditions" section, above, 86 Fleet Place (The Eagle), a 32-story (350 feet in height) mixed-use commercial/residential building, and 150 Myrtle Avenue (Toren), a 37-story (399 feet in height) mixed-use commercial/residential building, are both located to the northwest of the rezoning area.

In addition, the proposed zoning text amendment would be approved in the 2021 With-Action condition. Specifically, as noted above, the rezoning area would be designated an MIH Area subject to the affordability requirements of the MIH program (as an amendment to ZR Appendix F), and the entirety of the rezoning area would be included in the Special DB District (as an amendment to ZR Article X, Chapter 1, Appendix E to update the boundary maps of the Special DB District to include the entirety of the rezoning area). The requested zoning text amendment would not introduce any uses that would not be permitted as-of-right pursuant to the proposed C6-4 (DB) (MIH) zoning.

For these reasons, the proposed actions would not represent a significant adverse impact on zoning in the primary or secondary study areas, in accordance with the criteria set forth in the *CEQR Technical Manual.*

ATTACHMENT D

SOCIOECONOMIC CONDITIONS

I. INTRODUCTION

This attachment assesses whether the proposed actions would result in significant adverse impacts to the socioeconomic character of the area surrounding the rezoning area in the Downtown Brooklyn neighborhood of Brooklyn Community District (CD) 2. As described in the 2014 *City Environmental Quality Review* (CEQR) *Technical Manual,* the socioeconomic character of an area includes its population, housing, and economic activities. Socioeconomic changes may occur when a project directly or indirectly changes these elements. Although some socioeconomic changes may not result in environmental impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area.

As discussed in **Attachment A, "Project Description,"** two reasonable-worst case development scenarios (RWCDS) have been identified for the proposed actions: (1) the Proposed Project, which comprises the proposed 209,354-gross square foot (-gsf) commercial development (10.0 FAR) as currently contemplated by the applicant; and (2) the Alternate Residential RWCDS, under which the development site is developed with a 258,904-gsf residential development (12.0 FAR). The net incremental development under the Proposed Project as compared to the No-Action would result in an increase of 209,354 gsf of office space space, which would exceed the *CEQR Technical Manual* threshold of 200,000 sf of commercial and warrants a preliminary socioeconomic analysis. Moreover, the net incremental development under the Alternate Residential RWCDS would result in a net increase of 259 dwelling units (DUs), which exceeds the *CEQR Technical Manual* threshold of 200 dwelling units and warrants a preliminary socioeconomic analysis.

In accordance with *CEQR Technical Manual* guidance, the socioeconomic analysis considers whether the proposed actions could result in significant adverse socioeconomic impacts due to: (1) direct displacement of residential population from the development site; (2) direct displacement of existing businesses or institutions from the development site; (3) indirect displacement of residential population; (4) indirect displacement of businesses or institutions; and/or (5) adverse effects on a specific industry. As outlined in **Attachment B, "Supplemental Screening,"** the proposed actions would not directly displace any existing residences, but would directly displace a single firm from the development site, a child care and pre-K facility employing an estimated 37 workers. The amount of employment associated with that displacement would not exceed the 100-employee threshold outlined in the *CEQR Technical Manual.* Therefore, the analysis presented in this attachment focuses on the potential for indirect residential displacement, indirect business and institutional displacement, and adverse effects on specific industries.

II. PRICINIPAL CONCLUSIONS

Direct Business Displacement

The initial assessment indicated that no further analysis of direct business displacement is warranted. A single firm could be directly displaced from the development site as a result of the proposed actions under

either the Proposed Project or the Alternative Residential RWCDS: Duffield Children's Center, a child care and pre-k facility employing an estimated 37 workers. According to the *CEQR Technical Manual*, direct displacement of less than 100 workers would not typically be expected to substantially alter the socioeconomic character of a neighborhood, and therefore, no further analysis is warranted.

Indirect Residential Displacement

A preliminary assessment finds that the proposed actions would not result in significant adverse impacts due to indirect residential displacement. According to the *CEQR Technical Manual*, a population increase of less than five percent of the total study area population would generally not be expected to change real estate market conditions in a study area. The Alternate Residential RWCDS associated with the proposed actions would result in a net increase of 259 DUs, of which at a minimum 65 units are expected to be permanently affordable units pursuant to the Mandatory Inclusionary Housing (MIH) program, compared to the No-Action condition. Conservatively, assuming that the DUs would be fully occupied and would have the same average household size as Brooklyn CD 2 in 2010 (2.01 persons per household), this is expected to increase the residential population by 521 persons over the No-Action condition. This equates to a less than three percent increase as compared to the study area population in the future without the proposed actions. Therefore, the Alternate Residential RWCDS would not introduce a substantial new population that could substantially affect residential real estate market conditions in the study area, and no further analysis is required. The Alternate Residential RWCDS is expected to help maintain a more diverse demographic within the study area, as compared with the future without the proposed actions, in which projects will continue the trend towards rising residential rents, and incomes in the study area. Pursuant to MIH, any new residential development in the rezoning area would be required to provide at a minimum 25 percent of the residential floor area as permanently affordable housing.

Indirect Business Displacement

A preliminary assessment finds that the proposed actions would not result in significant adverse impacts due to indirect business displacement. There are already well-established commercial and residential markets in the study area such that the Proposed Project's new office uses would not substantially alter commercial rents. The proposed actions would not directly displace any type of use that either directly supports businesses in the area or brings a customer base to the area for local businesses, nor would they directly or indirectly displace residents or workers who form the customer base of existing businesses in the area.

Adverse Effects on Specific Industries

A preliminary assessment finds that the proposed actions would not have a significant adverse impact on specific industries. The single directly displaced institutional use is not critical to the viability of any specific industry within or outside of the study area. The analysis of indirect business displacement finds that there is no potential for significant indirect business displacement. Therefore, the proposed actions would not directly or indirectly affect business conditions in any industry or category or business within or outside of the study area, and would not substantially reduce employment or impair viability in a specific industry or category of business.

III. METHODOLOGY

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

Direct displacement is defined as the involuntary displacement of residents, businesses, or institutions from the actual site of (or sites directly affected by) a proposed project. Examples include the proposed redevelopment of a currently occupied site for new uses or structures, or a proposed easement or right-of-way that would take a portion of a parcel and thus render it unfit for its current use. Since the occupants of a particular site are usually known, the disclosure of direct displacement focuses on specific businesses and employment and an identifiable number of residents and workers.

Indirect or secondary displacement is defined as the involuntary displacement of residents, businesses, or employees in an area adjacent to, or close to, a project site that results from changes in socioeconomic conditions created by a proposed project. Examples include rising residential rents in an area that result from a new concentration of higher-income housing introduced by a project, which ultimately could make existing housing unaffordable to lower income residents; a similar turnover of industrial to higher-rent commercial tenancies induced by the introduction of a successful office project in an area; or the flight from a neighborhood that can occur if a proposed project creates conditions that break down the community (such as a highway dividing the area). Unlike direct displacement, the exact occupants to be indirectly displaced are not known. Therefore, an assessment of indirect displacement usually identifies the size and type of groups of residents, businesses, or employees potentially affected.

Even if projects do not directly or indirectly displace businesses, they may affect the operation and viability of a major industry or commercial operation in the City. An example would be new regulations that prohibit or restrict the use of certain processes that are critical to certain industries. In these cases, the CEQR review may involve the assessment of the economic impact of the project on the specific industry in question.

As outlined in **Attachment B, "Supplemental Screening,"** and noted above, an assessment of potential indirect business displacement is warranted since as the Proposed Project would introduce more than 200,000 sf of commercial space over the No-Action condition. An assessment of potential indirect residential displacement is warranted as the Alternate Residential RWCDS for the proposed actions would introduce more than 200 residential units over the No-Action condition.

An assessment of the indirect business displacement due to market saturation is not warranted based on *CEQR Technical Manual* criteria. As compared to the No-Action condition, the proposed actions are not expected to add to, or create, a retail concentration that may draw a substantial amount of sales from existing businesses within the study area under either the Proposed Project or Alternate Residential RWCDS.

Study Area Definition

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

The *CEQR Technical Manual* explains that for projects that would increase the residential population by more than five percent as compared to the population expected to reside in the ¼-mile study area in the No-Action condition, a ½-mile study area is appropriate. As detailed in **Attachment A, "Project Description,"** the Alternate Residential RWCDS would result in an incremental (net) increase of 259 DUs, which would increase the population of the ¼-mile study area by less than five percent as compared to the No-Action condition. Therefore, the study area for socioeconomic conditions approximates a ¼-mile perimeter around the directly affected area (or project area).

The boundary of the socioeconomic study area was modified to match the census tracts that most closely define a ¼-mile perimeter surrounding the rezoning area (**Figure D-1**). By conforming to census tract boundaries, the socioeconomic analysis more accurately applies Census data to depict the demographic characteristics of the surrounding area. In addition, in accordance with *CEQR Technical Manual* guidance, the indirect residential displacement analysis considers an area "near" the study area (i.e., within a ¼-mile radius of the study area) to examine real estate market trends and ascertain whether the surrounding area has experienced a readily observable trend toward increasing rents and the likely effect of the proposed actions on such trends.

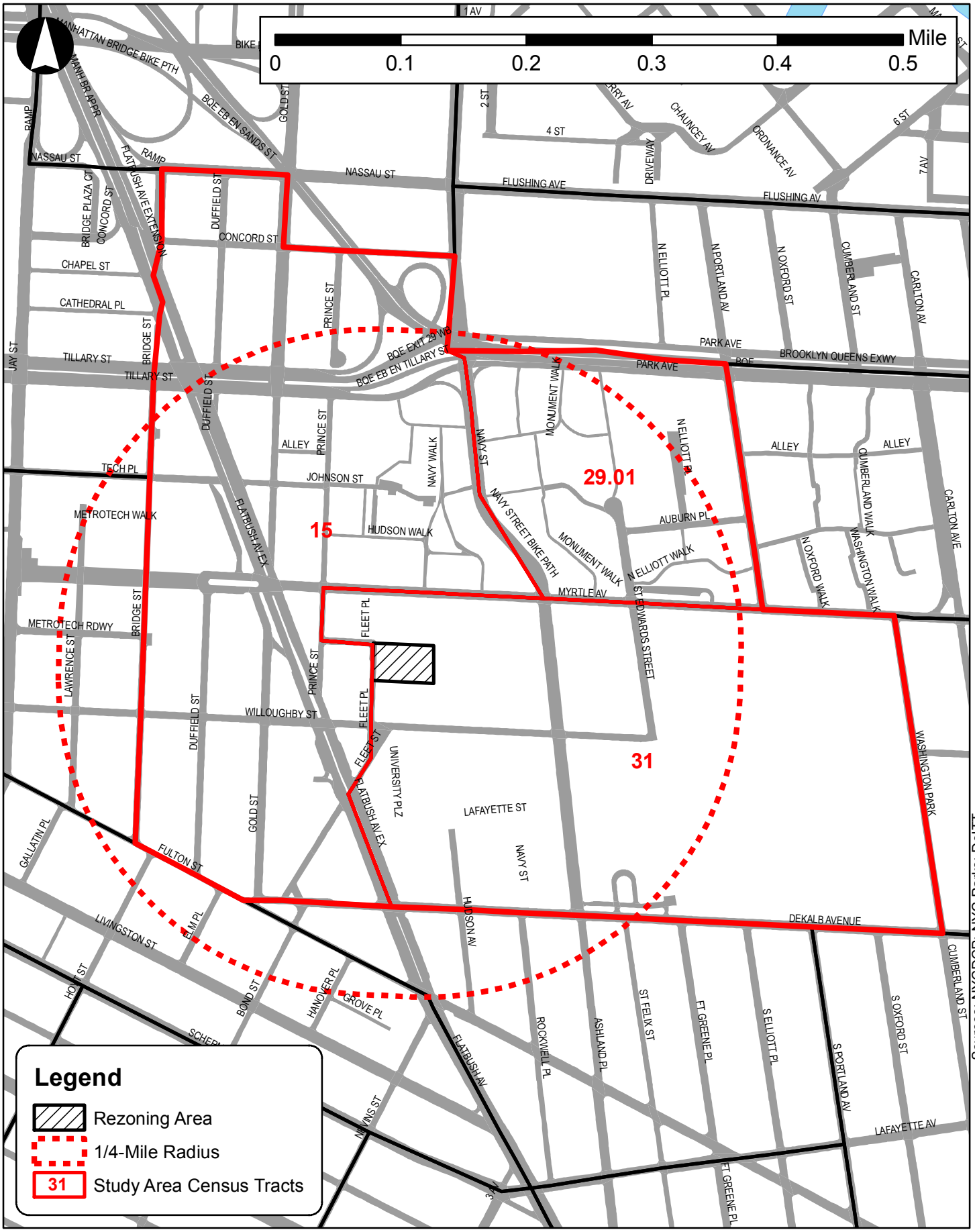
IV. PRELIMINARY ASSESSMENT

Indirect Residential Displacement

As described in the *CEQR Technical Manual,* indirect residential displacement usually results from substantial new development that is markedly different from existing uses and activity in an area and that causes increased property values in the area. Increased property values can lead to increased rents in non-regulated rental housing units, which can make it difficult for some existing residents to afford to stay in their homes. Pursuant to *CEQR Technical Manual* guidance, the indirect residential displacement assessment aims to determine whether the proposed actions and associated Alternate Residential RWCDS would either introduce a trend or accelerate an existing trend of changing real estate market conditions that may have the potential to displace a vulnerable residential population and substantially change the socioeconomic character of the neighborhood. Residents who are homeowners, or who are renters living in rent regulated[1] or subsidized housing units would not be vulnerable to rent pressures according to *CEQR Technical Manual* guidance.

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

Figure D-1
Socioeconomic Conditions Study Area



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

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

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

As shown in **Table D-1**, household median and mean income levels in the study area have increased over the past 16 years. The mean household income in the study area has increased by more than 100 percent since 2000. According to the 2012-2016 Five-Year American Community Survey (ACS) data, the study area has a median household income of approximately $59,891 (in 2016 dollars), as compared to Brooklyn, which has a median household income of approximately $50,640 and New York City, which had a median household income of approximately $55,191, respectively.

Table D-1: Household Income Characteristics in the ¼-Mile Study Area, Brooklyn, and New York City- 1999 and 2012-2016

	Median Household Income*			Mean Household Income		
	2000 Census	2012-2016 ACS	Percent Change	2000 Census	2012-2016 ACS	Percent Change
¼-Mile Study Area	***$27,948***	***$59,891***[1]	***Increase***[3]	***$46,493***	***$93,648***[2]	***101.4%***
Brooklyn	$47,815	$50,640	5.9%	$68,880	$75,810	10.1%
New York City	$56,978	$55,191	-3.1%	$87,052	$88,437	Increase[4]

Source: Bureau of the Census, 2000 Census, 2012-2016 Five-Year ACS Estimates.
Notes: Income values reflect inflation adjusted 2016 dollars.
***The median household income for the study area is calculated using linear interpolation of the three census tracts in the study area.**
[1] **Based on the margin of error (MOE) for median household income within the study area (according to the 2012-2016 Five-Year ACS, MOE of 15,303), there is 90 percent probability that the median household income in the Study Area is between $44,588 to $75,194.**
[2]Based on the MOE for mean household income in the study area (according to the 2012-2016 Five-Year ACS, MOE of 6,230), there is 90 percent probability that the mean household income in of the Study Area is between $87,418 to $99,878.
[3]The MOE of the difference between 2000 Census and 2012-2016 Five-year ACS data for the study area is greater than one-third of the estimated difference. Therefore, a percentage change cannot be estimated with confidence.
[4]The MOE of the difference between 2000 Census and 2012-2016 Five-year ACS data for New York City is greater than one-third of the estimated difference. Therefore, a percentage change cannot be estimated with confidence.

Mean household income levels in all three geographic areas are higher than median household income levels indicating the presence of higher income households in the area. As shown in **Table D-1**, the study area has a mean household income of approximately $93,648, as compared to Brooklyn, which has a mean household income of approximately $75,810 and New York City, which had a median household income of approximately $88,437, respectively.

Table D-2 provides information poverty rates in the study area, Brooklyn, and New York City. As shown in **Table D-2**, slightly more than 29 percent of the population for whom poverty status is determined in the study area had incomes below the poverty level, as compared to nearly 23 percent of the population in

Brooklyn, and slightly more than 20 percent in New York City.

Table D-2: Population below the Poverty Level in the Study Area, Brooklyn, and New York City - 1999 and 2012-2016

	Population Below the Poverty Level			
	2000 Census		2012-2016 ACS	
	Number	Percent	Number	Percent
½-Mile Study Area	***3,626***	***43.7%***	***3,577***[1]	***29.1%***[2]
Brooklyn	610,476	25.1%	587,518	22.7%
New York City	1,668,938	21.2%	1,689,759	20.3%

Source: Bureau of the Census, 2000 Census, 2012-2016 Five-Year ACS Estimates.
Notes:
[1] Based on the MOE for persons below the poverty level within the Study Area (according to the 2012-2016 Five-Year ACS, MOE of 603), there is 90 percent probability that number of persons below the poverty level in the Study Area is between 2,974 and 4,180.
[2] Based on the MOE for percent of population below the poverty level within the Study Area (according to the 2012-2016 Five-Year ACS, MOE of 4.6 percent), there is 90 percent probability that the poverty rate in the Study Area is between 24.5 and 33.7 percent.

As Census and ACS data do not provide specific rent information according to regulation status or unit size, but instead can paint a general picture about the rental rates in the study area, larger borough, and City, current real estate market reports for the surrounding area are used to provide a fuller understanding of where the market is today. **Table D-3** provides housing market data from 2017 on average apartment rental rates in Downtown Brooklyn, as compared to the larger borough. As shown in **Table D-3**, the average prices for apartments in Downtown Brooklyn are higher than the overall borough.

Table D-3: 2017 Average Unit Prices in Downtown Brooklyn

	Studio Units	One-Bedroom Units	Two-Bedroom Units
Downtown Brooklyn	$ 2,495	$3,145	$4,312
Brooklyn	$2,172	$2,582	$3,397

Source: MNS Real Impact Real Estate, Brooklyn Rental Market Report, December 2017.

A considerable amount of residential use is planned in the study area in the future without the proposed actions. As detailed in **Attachment C, "Land Use, Zoning, and Public Policy,"** within an approximate ¼-mile radius of the area to be rezoned, approximately 3,183 DUs are anticipated to be built by the 2021 analysis year. Many of these developments will contain a mix of uses in addition to residential, including retail and community facility space. Some of these planned developments are expected to include affordable housing units, however, the majority of new housing units would be market-rate and are expected to be priced at the higher end of the market. Roughly 16 percent (497 DUs) of the planned housing units in the study area are anticipated to be affordable units.

In the future with the proposed actions, the rezoning area would be designated an MIH Area, which would set mandatory affordable housing requirements pursuant to the MIH program and require a share of new housing be permanently affordable, should the development site be redeveloped with residential uses. The production of permanently affordable housing would be a condition of residential development in the rezoning area, and is expected to help preserve affordable housing in the area. There also would be no expiration to the affordability requirement of housing units created through MIH, making them a long-term stable reservoir of affordable housing in the area, a key policy to meet the *Housing New York* goal of fostering diverse livable communities.

The MIH program sets forth two primary options (Option 1 and Option 2) that are characterized by different affordability levels, which promote a range of affordable development:

- Option 1 requires that 25 percent of residential floor area of a development be set aside for households earning up to 60 percent of the area median income (AMI) on average (approximately $51,540 for a family of three in 2017 dollars), with ten percent of that number set aside for households earning up to 40 percent of AMI ($34,360 for a family of three in 2017 dollars).
- Option 2 requires that 30 percent of residential floor area of a development be set aside for households earning up to 80 percent of the AMI on average (approximately $68,720 for a family of three in 2017 dollars), with ten percent of that number set aside for households earning up to 40 percent of AMI.

For either MIH option, none of the affordable units could be targeted to residents with incomes exceeding 130 percent AMI ($111,670 for a family of three in 2017 dollars). Additionally, the City Council and City Planning Commission (CPC) could decide to apply a Deep Affordability Option in conjunction with either Option 1 or 2. The Deep Affordability Option would require that 20 percent of the residential floor area be targeted to households earning up to 40 percent of AMI instead of ten percent.

The incomes of households in the Alternative Residential RWCDS cannot be estimated at this time, because the amount of affordable DUs produced and resulting range of affordability presented would ultimately depend on the extent to which each MIH Option is utilized. Additionally, the levels of affordability are based on percentages of the HUD-defined AMI for the region; the 2017 income limits by family size for the New York City region are presented in **Table D-4**, while **Table D-5** shows the monthly rents by unit size for each. These levels will change over time, but their future levels cannot conclusively be established at this time.

Table D-4: 2017 New York City Area Median Income (AMI)

Family Size	30% of AMI	40% of AMI	50% of AMI	60% of AMI	80% of AMI	100% of AMI	130% of AMI
1	$20,040	$26,720	$33,400	$40,080	$53,440	$66,800	$86,840
2	$22,920	$30,560	$38,200	$45,840	$61,120	$76,400	$99,320
3	$25,770	$34,360	$42,950	$51,540	$68,720	$85,900	$111,670
4	$28,620	$38,160	$47,700	$57,240	$76,320	$95,400	$124,020

Source: HUD and New York City Housing Development Corporation (HDC)

Table D-5: 2017 New York City Affordable Monthly Rents by Rental Tier

Unit Size	30% of AMI	40% of AMI	50% of AMI	60% of AMI	70% of AMI	80% of AMI	100% of AMI	130% of AMI
Studio	$331	$475	$618	$761	$947	$1,091	$1,377	$1,807
1-Bedroom	$426	$605	$784	$963	$1,196	$1,375	$1,733	$2,270
2-Bedroom	$521	$736	$951	$1,166	$1,445	$1,660	$2,089	$2,733
3-Bedroom	$594	$843	$1,091	$1,339	$1,661	$1,339	$2,406	$3,150

Source: New York City Department of Housing Preservation and Development (HPD) website: http://www1.nyc,gov/site/hpd/about/what-is-affordable-housing.page

Notes: Assumes tenant pays electricity, no electric stove. Rents have been calculated at 30 percent of annual gross income of the target AMI. For low-income bands, rents are based on 30 percent of 27 percent, 37 percent, 47 percent, and 57 percent AMI. Studio rents are based on a household factor of 0.6.

Based on these data, new residents of affordable housing units are expected to have lower median household income in comparison the existing income levels of households in the study area and the affordable housing added by the Alternative Residential RWCDS would help maintain a more diverse demographic composition within the study area. HUD defines families who pay more than 30 percent of their income for housing as rent-burdened, assuming the 30 percent threshold is conservative for this analysis as it results in a higher assumed income for the proposed actions' market-rate tenants. Based on the average asking rents in Downtown Brooklyn provided in **Table D-3**, and assuming that the incoming

market-rate renters would be spending 30 percent of their income on rent, new residents of market-rate studio units in the study area are estimated to earn approximately $103,280 annually; new residents of market-rate one-bedroom units in the study area are estimated to earn approximately $125,800 annually; and new residents of the market-rate two-bedroom units in the study area are estimated to earn approximately $172,480 annually. Therefore, the market-rate residential units of the Alternate Residential RWCDS would likely attract residents with higher median household incomes when compared to the existing median household incomes for the study area.

Given the existing trends of increasing rents, the overall population introduced as a result of the Alternate Residential RWCDS would be expected to have a higher average household income than the existing study area population, irrespective of levels of affordability that might occur as a result of MIH. Per *CEQR Technical Manual* guidance, if the expected average incomes of the new population would exceed the average incomes of the study area populations, Step 2 of the preliminary assessment should be conducted. Accordingly, Step 2 is warranted and is provided below.

Step 2: Determine if the project's increase in population is large enough relative to the size of the population expected to reside in the study area without the project to affect real estate market conditions in the study area.

Per 2012-2016 Five-Year ACS data, the ¼-mile study area has a residential population of approximately 13,343, nearly a 35 percent increase from the population in 2000 (refer to **Table D-6**). In comparison, over the same period, the populations of both Brooklyn and New York City increased by nearly six percent.

Table D-6: Residential Population- 2000 and 2012-2016

	Total Population		Change 2000 to 2012-2016	
	2000	2012-2016	Number Change	Percent Change
¼-Mile Study Area	***9,896***	***13,343***[1]	***3,447***	***34.8%***
Brooklyn	2,465,326	2,606,852	141,526	5.7%
New York City	8,008,278	8,461,961	453,683	5.7%

Sources: Bureau of the Census, 2000 Census, 2012-2016 Five-Year ACS Estimates
Notes:
[1]Based on the MOE for total population within the study area (according to the 2012-2016 Five-Year ACS, MOE of 721), there is 90 percent probability that the total population of the study area is between 12,622 residents to 14,064 residents.

As noted above and discussed in further detail in **Attachment C, "Land Use, Zoning, and Public Policy,"** a number of development projects are anticipated to be added to the ¼-study area in absence of the proposed actions. Based on information about these planned projects, a total of approximately 2,993 DUs are anticipated to be built within the study area by 2021. Assuming an average household size of 2.01 persons per DU[2], as well as 100 percent occupancy rates, these planned developments would add an estimated 6,017 residents to the study area. **Table D-7** shows the total projections in the future without the proposed actions by adding the population from the No-Action projects to the 2012-2016 population estimate for the study area.

[2] The average household size for Brooklyn CD 2 in 2010 Census.

Table D-7: Projected Incremental Population by 2021 in the Future without the Proposed Actions

	Projected Increase in DUs in the Future Without the Proposed Actions	Projected Population Increase in the Future Without the Proposed Actions	2021 Population Projections in Future Without the Proposed Actions
¼-Mile Study Area	2,993	6,017	19,360

Sources: New York City Department of City Planning (DCP)
Notes: The estimated number of residents assumes 2.01 persons per DU and 100 percent occupancy for residential units.

The Alternate Residential RWCDS could introduce 259 incremental DUs to the development site by 2021. Assuming an average household size of 2.01 persons per DU, as well as 100 percent occupancy rates, these incremental DUs could add an estimated 521 new residents. **Table D-8** shows this new population and its size relative to the population in the future without the proposed actions.

Table D-8: Projected ½-Mile Study Area Incremental Population by 2021 in the Future with the Proposed Actions under the Alternate Residential RWCDS

2021 No-Action Population Projections	Number of Incremental DUs	Projected Population Increase	2021 With-Action Population Projections	Percent Change from 2021 No-Action Condition
19,360	259	521	19,881	2.69%

Sources: DCP
Notes: The estimated number of residents assumes 2.01 persons per DU and 100 percent occupancy for residential units.

By adding an estimated 521 residents, the Alternate Residential RWCDS could increase population of the ¼-mile study area by less than three percent. Therefore, the total population in the With-Action condition under the Alternate Residential RWCDS would result in less than a five percent increase in the study area population from the No-Action condition, and pursuant to *CEQR Technical Manual* guidance, it is unlikely that the development of the Alternate Residential RWCDS would introduce a trend or accelerate a trend of a change in the residential real estate market that would potentially displace a vulnerable population to the extent that the socioeconomic character of the neighborhood would change.

In addition, in the future with the Alternate Residential RWCDS, pursuant to MIH, a minimum 25 percent of the total dwelling units (65 DUs) would be required to be permanently affordable for households, whereas residential development in absence of the proposed actions would not be required to include any affordable dwelling units.

Indirect Business and Institutional Displacement

Like the analysis of indirect residential displacement, the preliminary assessment of indirect business displacement focuses on whether the proposed actions and associated Proposed Project would introduce trends that would make it more difficult for nearby existing businesses that provide products or services essential to the local economy, or that are targeted to be preserved in their current locations under adopted public plans to remain in the area. A proposed action could introduce such a trend by causing a marked increase in property values and rents within the ¼-mile study area so that it would become difficult for some categories of businesses to remain in the area. A proposed action could directly displace businesses or residents who serve as suppliers or the customer base for nearby businesses, affecting their viability or altering the desirability of their existing location. The purpose of the preliminary assessment is to determine whether the proposed actions have the potential to introduce such a trend. If so a, a detailed assessment is warranted. The following three questions (shown in italics below) address the potential for significant adverse indirect business displacement impacts, per the *CEQR Technical Manual*.

Would the proposed action and subsequent development markedly increase property values and rents throughout the study area, making it difficult for some categories of businesses to remain in the area?

Downtown Brooklyn is New York City's third largest central business district (after Midtown Manhattan and Lower Manhattan). It is recognized as the economic, civic, and retail center of the borough; a hub of office buildings, courthouses, and government buildings, major academic and cultural institutions, and active retail corridors.

According to the Downtown Brooklyn Partnership's 2016 Market Report, Downtown Brooklyn supports a robust retail market with nearly 400 retail establishments ranging from apparel to home goods to major department stores, such as Macy's, Target, and Century 21. The area's office inventory includes roughly 17 million sf of office space, and has been growing in recent years. The largest office development is MetroTech Center, an approximately 16-acre commercial, academic, research, and high-technology complex containing 12 buildings with more than five million sf of office and retail, as well as public open space.

According to the Downtown Brooklyn Partnership's 2016 Market Report, between 2009 and 2015, innovation employment increased by more than 29 percent in Brooklyn, and within the Brooklyn Tech Triangle, which includes Downtown Brooklyn, DUMBO, and the Brooklyn Navy Yard, innovation employment increased by 87 percent. This clustering of innovated and creative businesses within the area has led to high demand for office space in the area and has resulted in a relatively low commercial office vacancy rate of three percent, significantly lower than other major areas in the City, including Lower Manhattan (with nearly nine percent vacancy), Midtown South (close to five percent vacancy), and Midtown Manhattan (roughly seven percent vacancy). Given the high demand for the office space, developers have responded with plans for several new office projects in Downtown Brooklyn, DUMBO, and the Brooklyn Navy Yard. According to Newmark Knight Frank's Fourth Quarter 2017 Brooklyn Office Market, overall asking rents for office space in Downtown Brooklyn have increased by more than five percent within the last year to nearly $44 per square foot in 2017, which is still more affordable than Manhattan markets.

The ¼-mile study area is located within Downtown Brooklyn, and is a densely developed mixed-use area that contains more than 18.2 million sf of development, including nearly ten million sf of commercial development (including office, retail, storage, garage, and institutional uses) and more than 8,800 residential DUs (roughly 7.9 million sf), as well as several institutional uses, including Long Island University (LIU) and the Brooklyn Hospital Center. Commercial uses are generally concentrated to the west of the Flatbush Avenue Extension, and residential uses include multi-family residential building and mixed-use commercial and residential developments are generally located east of Flatbush Avenue Extension.

Most recent new construction within the study area has introduced mixed-use development consisting largely of residential and retail uses. More than 4,800 residential units and nearly 624,000 sf of retail have been added to the study area since 2005 due to new construction projects. As described in **Attachment C, "Land Use, Zoning, and Public Policy,"** many of the mixed-used commercial and residential developments within the immediate proximity of the project area have been constructed since 2004, and have been made possible by approval of the 2004 Downtown Brooklyn Redevelopment Project.

According to 2016 PLUTO data, office and retail spaces account for approximately 63 percent of commercial development in the study area, including more than 4.6 million sf of office and nearly 1.7 million sf of retail space. The largest office building within the study area is 4 MetroTech Center, which includes more 1.2 million sf of office space and approximately 19,800 sf of retail. Within the ¼-mile study

area, there are 16 buildings that contain more than 50,000 sf of office space each, nine of which include more than 100,000 sf of office space.

Retail development in the study area includes part of the Fulton Street Mall, as well as CityPoint Shopping Center at 445 Albee Square West, which includes both Target and Century 21, which opened in 2017. Flatbush Avenue Extension also serves as a major retail corridor for the area.

As shown in **Table D-9**, there are more than 9,800 employees in the ¼-mile study area. These employees represent slightly more than one percent of Brooklyn's total employment, and account for roughly 0.2 percent of all employment in New York City.

Table D-9: Estimated Employees in the ¼-Mile Study Area, Brooklyn, and New York City

NAICS Industry Title	¼-Mile Study Area		Brooklyn		New York City	
	Employees	Percentage	Employees	Percentage	Employees	Percentage
Agriculture, Forestry, Fishing, & Hunting	0	0.0%	111	0.0%	354	0.0%
Mining, Quarrying & Gas/Oil Extraction	0	0.0%	0	0.0%	67	0.0%
Utilities	45	0.5%	4,189	0.6%	15,331	0.4%
Construction	199	2.0%	30,156	4.4%	142,385	3.4%
Manufacturing	54	0.5%	20,443	3.0%	75,325	1.8%
Wholesale Trade	22	0.2%	24,445	3.6%	134,874	3.2%
Retail Trade	476	4.8%	75,648	11.0%	345,238	8.3%
Transportation & Warehousing	4	0.0%	20,227	2.9%	116,144	2.8%
Information	118	1.2%	10,231	1.5%	177,674	4.3%
Finance & Insurance	242	2.5%	16,336	2.4%	327,588	7.9%
Real Estate, Rental, & Leasing	164	1.7%	17,642	2.6%	127,804	3.1%
Professional, Scientific, & Technical Service	74	0.8%	21,556	3.1%	393,373	9.4%
Management of Companies & Enterprises	0	0.0%	3,033	0.4%	66,453	1.6%
Administrative Support & Waste Management	11	0.1%	29,555	4.3%	224,120	5.4%
Educational Services	294	3.0%	29,399	4.3%	178,394	4.3%
Health Care & Social Assistance	4,433	45.1%	193,226	28.1%	670,959	16.1%
Arts, Entertainment, & Recreation	44	0.4%	8,265	1.2%	84,634	2.0%
Accommodation & Food Services	629	6.4%	46,277	6.7%	349,648	8.4%
Other Services	175	1.8%	29,410	4.3%	172,230	4.1%
Government	2,830	28.8%	99,366	14.5%	538,779	12.9%
Unclassified	17	0.2%	7,518	1.1%	23,821	0.6%
Total	***9,831***	***100%***	***687,033***	***100%***	***4,165,195***	***100%***

Source: Study area employment data obtained from ESRI and Dun and Bradstreet, Business Analyst Online, Business Summary Report, 2017, and employment data for the borough of Brooklyn and New York City obtained from New York State Department of Labor, Quarterly Census of Employment and Wages (QCEW), preliminary 2016 annual averages.

Within the ¼-mile study area, the healthcare and social assistance sector accounted for the largest percentage of employment (slightly more than 45 percent), with 4,433 jobs. Some of this employment is likely attributed to the Brooklyn Hospital Center located at 121 Dekalb Avenue adjacent to Fort Greene Park. Government is the second largest employment sector in the ¼-mile study area with 2,830 jobs (representing nearly 29 percent). Combined, these two sectors account for nearly 74 percent of all

employment in the ¼-mile study area. As shown in **Table D-9**, the study area exhibits a higher percentage of employees in both sectors, as compared to the borough of Brooklyn and greater City.

Retail trade and accommodation and food service sectors represent roughly 11 percent of the employment within the study area, and office sectors, such as finance and insurance, real estate, rental and leasing, and professional, scientific, and technical services account for roughly five percent of employment. Educational services, which includes LIU, account for approximately three percent. Industrial sectors (including construction, wholesale, manufacturing, and transportation and warehousing) account for less than three percent of employment within the study area.

In absence of the proposed actions, Downtown Brooklyn is anticipated to continue to experience a trend of significant amount new development, including a mix of commercial, residential, and institutional uses. As described in **Attachment C, "Land Use, Zoning, and Public Policy,"** nearly 1.4 million gsf of commercial space, including retail and office uses, 3,183 DUs, and 244,186 sf of community facility space would be added within the ¼-mile study area. Within the immediate proximity of the project area, four developments at 141 Willoughby Street, 137 Willoughby Street, 86 Fleet Place, and 167 Willoughby Street are anticipated to be completed and occupied, introducing a total of 1,225 DUs, and 222,523 gsf of commercial space.

As noted above, given Downtown Brooklyn's low office vacancy rate, increasing attractiveness to innovative and creative industries, and relative affordability to other office markets in the greater City, developers have responded with plans for several new office projects, including the construction of 625 Fulton Street, a 36-story, approximately 610,000 sf tower containing retail and office uses. Tishman Speyer is constructing a 620,000-sf office tower without a major tenant on top of the Macy's department store at 422 Fulton Street in Downtown Brooklyn, which will be ready for occupancy in mid-2019. In addition, the construction of One Willoughby Square will add a 500,000-sf office tower, and the Pioneer Building at 41 Flatbush Avenue was recently converted from a former self-storage facility to a 260,000-sf office building. This surge in office development follows a period of a significant residential development, a trend initiated following the 2004 Downtown Brooklyn Redevelopment Project, which has created mixed-use area that supports an area to live, work, and visit.

The proposed actions would extend an existing C6-4 zoning district across Fleet Place, which, in combination with the proposed zoning text amendment to ZR Appendix F to establish the rezoning area as an MIH Area and to ZR Article X, Chapter 1, Appendix E to update the boundary maps of the Special DB District to include the entirety of the rezoning area, would increase the rezoning area's allowable density. As described in **Attachment C, "Land Use, Zoning, and Public Policy,"** the proposed zoning designation and associated increased density is appropriate, given the area's location in Downtown Brooklyn and proximity to public transit. The proposed actions would facilitate the construction of the Proposed Project, which would consist of a 14-story, 209,354-gsf commercial office building.

As described above, the study area already includes a substantial amount of commercial development, and is part of the City's established Downtown Brooklyn office market. The proposed actions would not be introducing any new uses or economic activities to the study area, nor are they expected to alter existing economic patterns. The proposed office use would be consistent with the existing and anticipated mix of residential, commercial, and institutional land uses in the study area. The Proposed Project would reflect, rather than alter or accelerate, existing economic patterns in the study area and larger Downtown Brooklyn office market, and is expected to be absorbed by the study area due to the area's attractiveness to innovative and creative industries.

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

The proposed actions would not directly displace uses that offer critical support services to the remaining local businesses, or that draw a substantial customer base to the study area relative to the overall consumer draw within the study area. The proposed actions under either RWCDS would directly displace a single firm, the Duffield Children's Center, a child care and pre-K program operated by Brooklyn Community Services (BCS), which employs an estimated 37 workers at the development site. This firm does not draw large volumes of customers to its locations relative to the overall customer draw within the study area, nor is firm relied upon exclusively for services in the study area. Therefore, the potential direct displacement of this firm is not expected to have an adverse effect on the remaining businesses in the study area.

Would the proposed action and subsequent development directly or indirectly displace residents, workers or visitors who form a customer base of existing businesses in the study area?

The proposed actions would not directly or indirectly displace residents, workers, or visitors who form a substantial portion of the customer base of existing businesses in the study area. In the future with the proposed actions, the Proposed Project is expected to introduce a significant amount of office space that would increase the customer base in the area.

Based on the above consideration of *CEQR Technical Manual* criteria, this preliminary assessment finds that the proposed actions would not add a new economic activity or add concentration of a particular sector of the local economy enough to significantly alter or accelerate existing economic patterns. The proposed redevelopment of the development site would not directly or indirectly displace uses that provide critical support to customer base for local businesses. As such, the proposed actions would not result in significant adverse socioeconomic impacts due to indirect business displacement, and no further assessment is warranted.

Adverse Effects on Specific Industries

Per the *CEQR Technical Manual*, a significant adverse impact may occur if an action would measurably diminish the viability of a specific industry that has substantial economic value to the City's economy. An example, as cited in the *CEQR Technical Manual*, would be new regulations that prohibit or restrict the use of certain processes that are critical to certain industries. The *CEQR Technical Manual* indicates that a more detailed examination is appropriate if the following considerations cannot be answered with a clear "no":

- ***Would the proposed project significantly affect business conditions in any industry or category of business within or outside of the study area?***

As described above, the existing institutional use that would be displaced does not represent a critical mass of businesses within any City industry, category of business, or category of employment. Although all businesses and institutional uses are valuable to the City's economy, the services officered by the displaced establishment could be found elsewhere within the socioeconomic study area, within the broader trade area, and within the City as a whole. Furthermore, as discussed under the "Indirect Business

Displacement" section of this attachment, the products and services offered by the child care and pre-K program that would be displaced are not expected to be essential to the viability of other businesses within or outside the study area. Therefore, the proposed actions would not affect business conditions in any specific industry within or outside the study area.

- ***Would the proposed project indirectly substantially reduce employment or impair the economic viability of an industry or category of business?***

As described in the "Indirect Business Displacement" analysis, above, the proposed actions would not result in significant indirect business displacement. Therefore, the proposed actions would not indirectly reduce employment or have an impact on the economic viability in any specific industry or category of business. Based on this preliminary assessment, the proposed actions would not result in significant adverse impacts due to adverse effects on specific industries.

ATTACHMENT E

COMMUNITY FACILITIES AND SERVICES

I. INTRODUCTION

The *City Environmental Quality Review* (CEQR) *Technical Manual* defines community facilities as public or publicly-funded facilities including schools, libraries, child care centers, health care facilities, and fire and police protection services. This attachment examines the potential effects of the proposed actions on the capacity and provision of services by those community facilities by the 2021 analysis year.

A project can affect community facility services when it physically displaces or alters a community facility (direct effect) or causes a change in population that may affect the services delivered by a community facility (indirect effect), which could happen if a facility is already over utilized, or if a project is large enough to create a demand that could not be met by the existing facility/facilities. The CEQR analysis examines potential impacts on existing facilities and generally focuses in detail on those services that the City is obligated to provide to any member of the community. This analysis is not a needs assessment for new or additional services. Service providers like schools or libraries conduct their own needs assessments on a continuing basis.

As described in **Attachment A, "Project Description,"** the applicant, Fleet Center Inc., is seeking a series of discretionary actions from the New York City Planning Commission (CPC), including zoning map and text amendments, to facilitate the development of a commercial building at 101 Fleet Place. As the development site is currently occupied by a publicly-funded child care facility, an assessment of the direct effects of the proposed actions on this existing community facility is also provided in this attachment.

As presented in **Attachment B, "Supplemental Screening,"** the proposed actions would not exceed any of the indirect community facility impact analysis thresholds. Therefore, no significant adverse indirect impacts on community facilities or services are anticipated, and this attachment focuses solely on the potential for the proposed actions to result in significant adverse direct impacts on community facilities.

II. PRINCIPAL CONCLUSIONS

Direct Effects

The proposed actions would result in the direct displacement of the Duffield Children's Center, a child care facility currently located on the development site. As such, a detailed direct effects assessment was prepared. In addition, as the displacement of the existing child care facility could place additional demand on other nearby facilities, the potential for indirect effects was also evaluated. As presented herein, while study area child care facilities would operate above capacity in the future with the proposed actions, the Alternate Residential Scenario would only increase the child care utilization rate by 3.0 percent, which is less than the five percent *CEQR Technical Manual* impact threshold. As such, the direct displacement of the existing child care center on the development site would not represent a significant adverse direct impact.

Indirect Effects

The proposed actions would not exceed any of the indirect community facility impact analysis thresholds. Therefore, no significant adverse indirect impacts on community facilities or services are anticipated.

III. DIRECT EFFECTS

Methodology

The *CEQR Technical Manual* states that if a proposed project would displace or alter a community facility, it is expected that the affected agency may conduct its own assessment to determine the impact of the proposed project on its facility and its constituents. The CEQR analysis should be coordinated with the affected agency's assessment. At a minimum, the analysis should document the name and location of the facility, as well as its type (e.g., school, library), the service it provides, its size (e.g., 600 seats, square footage), and its hours of operation. The population and/or area served by the facility (e.g., income level, age groups, residents vs. workers, repeat or one-time users) and the facility's capacity, including excess or deficiency of capacity (e.g., school seats, volumes per capita), should be determined. Based on how the project would change the affected facility, the next step is determining the extent to which service would be disrupted or precluded. If elimination or disruption of service would place additional demand on other nearby facilities, it may be appropriate to examine the indirect effects on those facilities caused by the initial direct impact, following the indirect impact assessment methodology presented in the *CEQR Technical Manual.*

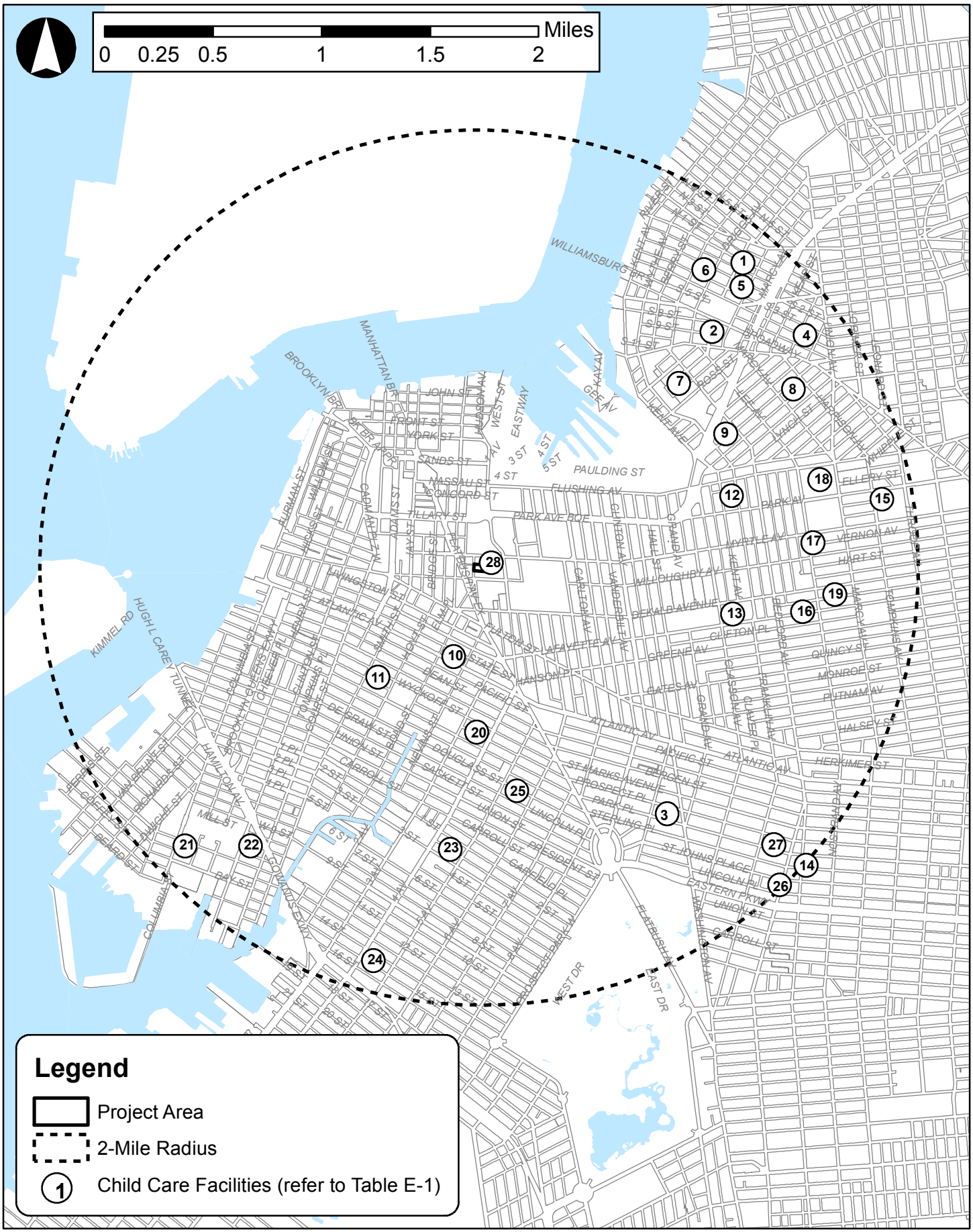
As the proposed actions would result in the direct displacement of the Duffield Children's Center, a child care facility currently located on the development site, a detailed direct effects assessment is provided below. In addition, as the displacement of the existing child care facility could place additional demand on other nearby facilities, the potential for indirect effects is also provided.

Existing Conditions

The development site is currently occupied by the 16,482-gsf Duffield Children's Center, a publicly-funded child care facility operated by Brooklyn Community Services (BCS) that has been located on the development site for 20 years. The facility provides high quality, affordable services, including child care and pre-K, for children ages 2.9 to 4.5 and prepares each child for the academics of kindergarten and elementary school. These services are provided free to those eligible for subsidies, on a sliding-scale, and private pay basis for families in the Brooklyn community. Duffield Children's Center utilizes the nationally recognized, evidence-based, Creative Curriculum model. Staff at the Duffield Children's Center include teachers, a nurse intern, a social work intern, a mental health consultant, a nutritionist, and volunteers. Based on June 2017 data from the Administration of Children's Services (ACS), the Duffield Children's Center has an existing operating capacity of 49 slots, with 47 students enrolled, for an overall utilization rate of approximately 96 percent.

While enrollment in child care facilities is not limited to a geographic area, **Figure E-1** shows the location of all publicly-funded child care facilities within two miles of the development site, and **Table E-1** presents their existing capacity, enrollment, and utilization rates. According to *CEQR Technical Manual* guidance,

Child Care Facilities within Two Miles of the Project Area



the typical study area boundary for child care facilities is 1.5 miles. However, the size of the study area may, in consultation with the lead agency and ACS, be expanded if a project site is located in a transit-rich area. The development site is located in Downtown Brooklyn, a transit-rich area of the City. As such, the study area boundary was slightly expanded by approximately half a mile to two miles. As shown in **Table E-1** and **Figure E-1**, in addition to the Duffield Children's Center, there are 27 other publicly-funded child care facilities within two miles of the development site. Combined, the 28 facilities have a utilization rate of 87.1 percent with 280 available slots.

Table E-1: Publicly-Funded Child Care Facilities within Two-Mile Radius

Map No.[1]	Contractor Name	Program Address	Total Capacity	Total Enrollment	Available Slots	Utilization (%)
1	Bushwick United Housing Development Fund Corp.	243 South 2nd Street	55	44	11	80.0
2	Labor & Industry for Education, Inc.	321 Roebling Street	80	77	11	87.5
3	Sunny Skies Prospect Corp.	720 Washington Avenue	30	17	13	56.7
4	Nuestros Ninos Day Care Center, Inc.	384 South 4th Street	140	106	34	75.7
5	Nuestros Ninos Day Care Center, Inc.	243 South 2nd Street	70	63	7	90.0
6	Nuestros Ninos Day Care Center, Inc.	161 South 3rd Street	35	26	9	74.3
7	Sheltering Arms Children & Family Services	110 Taylor Street	45	32	13	71.1
8	United Academy	60 Harrison Avenue	103	100	3	97.1
9	Yeshiva Kehilath Yakov	638-644 Bedford Avenue	70	66	4	94.3
10	Strong Place Day Care Center, Inc.	460 Atlantic Avenue	100	90	10	90.0
11	Sunset Bay Community Services, Inc.	343 Warren Street	69	55	14	79.7
12	B'Above Worldwide Institute, Inc.	799 Kent Avenue	112	104	8	92.9
13	Billy Martin Child Development Day Care Center	333 Classon Avenue	49	43	6	87.8
14	Friends of Crown Heights Educational Centers, Inc.	813 Sterling Place	165	144	21	87.3
15	Brooklyn Kindergarten Society, Inc.	730 Park Avenue	82	80	2	97.6
16	Friends of Crown Heights Educational Centers, Inc.	34 Kosciusko Street	175	144	31	82.3
17	Our Children the Leaders of Tomorrow, Inc.	756 Myrtle Avenue	50	47	3	94.0
18	Sheltering Arms Children & Family Services	494 Marcy Avenue	49	43	6	87.8
19	The Salvation Army	110 Kosciusko Street	32	19	13	59.4
20	Alonzo A. Daughty Memorial Day Care Center	565 Baltic Street	34	31	3	91.2
21	BumbleBees R Us, Inc.	76 Lorraine Street	33	33	0	100.0
22	Strong Place Day Care Center, Inc.	595 Clinton Street	100	87	13	87.0
23	Strong Place Day Care Center, Inc.	333 Second Street	70	66	4	94.3
24	Sunset Bay Community Services, Inc.	199 14th Street	55	48	7	87.3
25	University Settlement Society of NY, Inc.	71 Lincoln Place	85	78	7	91.8

26	Friends of Crown Heights Educational Centers, Inc.	1491 Bedford Avenue	77	65	12	84.4
27	Friends of Crown Heights Educational Centers, Inc.	671 Prospect Place	142	129	13	90.8
28	Brooklyn Bureau of Community Services	101 Fleet Place (Development Site)	49	47	2	95.9
		Totals	***2,164***	***1,884***	***280***	***87.1***

Source: ACS June 2018 enrollment data.
Notes:
[1] Refer to **Figure E-1**.

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

In the future without the proposed actions, the existing Duffield Children's Center would continue to operate at the development site, and it is assumed that no changes to its capacity would occur. However, demand for publicly funded child care services is expected to increase with the completion of several planned residential developments that are expected to include affordable units. Specifically, as shown in **Figure E-2** on the following page, a total of 1,393 units affordable to households earning at or below 80 percent of Area Median Income (AMI) are expected to be completed in the child care study area by the 2021 analysis year, introducing a total of 248 new publicly-funded child care-eligible students[1]. While residents of these units would have access to child care across the City, and may choose, for example, to enroll their child in a child care center closer to their place of work, for analysis purposes, it is assumed that these additional 248 children would enroll in the 28 study area child care facilities, increasing the study area child care enrollment to 2,132 from 1,884 and the combined utilization rate to 98.5 percent from 87.1 percent. As such, in the No-Action condition, 32 slots would be available in the child care study area (refer to **Table E-3**).

[1] Based on child care multiplier of 0.178 children under six years old per unit for developments in Brooklyn (2014 *CEQR Technical Manual* Table 6-1b)

Table E-2: No-Action Developments

Map No.[1]	Project	Market-rate DUs	Affordable DUs	Commercial (sf)	Hotel Rooms	Community Facility (sf)	Industrial (sf)	Parking Spaces	# of Floors	Build Year[2]
Secondary Study Area										
1	141 Willougby St.	189	81	143,710	-	-	-	-	49	2019
2	137 Willoughby St.	458	-	68,000	-	-	-	-	57	2020
3	86 Fleet Place	440	29	10,813	-	-	-	143	32	2018
4	167 Willoughby St.	28	-	-	-	-	-	3	8	-
Subtotal		**1,115**	**110**	**222,523**	**-**	**-**	**-**	**146**		
Within a Quarter-Mile Radius										
5	420 Albee Sq./1 Willoughby St.	-	-	324,804	-	60,656	-	-	36	2020
6	436 Albee Sq.	150	-	23,740	-	-	-	30	28	2018
7	237 Duffield St.	88	22	9,923	-	-	-	-	21	2018
8	9 DeKalb Ave.	417	-	92,694	-	-	-	92	73	2021
9	9 Hoyt St. (Macy's Garage)	476	-	99,652	-	-	-	150	51	2021
10	625 Fulton St.	-	-	610,000	-	-	-	-	36	-
11	61 DeKalb Ave.	336	140	-	-	183,530	-	564	34	-
12	112 St. Edwards St.	-	146	-	-	-	-	-	18	2019
13	202-208 Tillary St.	104	79	13,723	-	-	-	44	23	2020
Subtotal		**1,571**	**387**	**1,174,536**	**-**	**244,186**	-	**880**		
Within a Half-Mile Radius										
14	Admiral's Row Development	-	-	165,000	-	-	356,000	700	5	2019
15	399 Sands St.	-	-	43,000	-	-	172,000	430	9	-
16	260 Gold Street	286	-	-	-	-	-	115	13	-
17	203 Jay St.	270	-	57,904	-	1,744	-	114	33	2018
18	22 Chapel St.	180	-	2,000	-	15,280	-	87	20	2020
19	City Tech/285 Jay St.	-	-	-	-	358,233	-	20	8	2018
20	370 Jay St.	-	-	-	-	530,000	-	-	12	2019
21	Seven Boerum Pl.	122	-	21,016	-	-	-	49	21	-
22	117 Livingston St./415 Red Hook	86	22	13,475	-	-	-	-	21	2018
23	71 Smith St./265 State St.	128	-	-	198	-	-	40	19	2018
24	210 Livingston St.	294	74	24,998	-	-	-	129	25	2018
25	211 Schermerhorn St.	48	-	10,536	-	-	-	-	14	2019
26	422 Fulton Street (Macy's)	-	-	620,000	-	-	-	-	15	2019
27	33 Bond St.	571	143	55,938	-	-	-	132	25	2018
28	285 Schermerhorn St.	84	21	17,406	-	-	-	-	14	-
29	61 Bond St.	-	-	-	285	-	-	-	13	2019
30	10 Nevins St.	184	-	9,730	-	-	-	37	27	2018
31	540 Fulton St.	-	-	221,039	-	-	-	-	19	2020
32	319 Schermerhorn St.	74	-	5,100	-	-	-	-	21	2018
33	333 Schermerhorn St.	600	150	42,000	-	-	-	120	54	2018
34	465 Pacific St.	38	-	7,256	-	-	-	17	7	2018
35	1 Flatbush Ave.	146	37	25,375	-	-	-	-	19	2018
36	570 Fulton St.	97	42	102,279	-	-	-	-	40	2021
37	250 Ashland Pl.	304	282	27,914	-	-	-	-	52	2018
38	620 Fulton St.	-	-	91,593	-	64,112	-	-	11	2018
39	280 Ashland Pl./15 Lafayette Ave.	74	49	2,800	-	21,400	-	-	12	2018
40	300 Ashland Pl.	302	76	65,863	-	49,743	-	175	32	2018
41	37 Lafayette Ave.	6	-	6,473	-	210	-	-	9	-
Subtotal		**3,894**	**896**	**1,638,695**	**483**	**1,040,722**	**528,000**	**2,165**		
TOTAL		**6,580**	**1,393**	**3,035,754**	**483**	**1,284,908**	**528,000**	**3,191**		

Notes:

[1]Refer to **Figure C-3 in Attachment C, "Land Use, Zoning, and Public Policy."**

Sources: New York City Department of Buildings (DOB) Building Information System (BIS); Articles from *Curbed NY, Brownstoner, YIMBY,* and *The Real Deal*; and environmental review documents.

Table E-3: 2021 No-Action Condition Study Area Child Care Utilization

	Capacity	Enrollment	Available Slots	Utilization (%)
Existing Conditions	2,164	1,884	280	87.1
Increment	-	+248	-240	+9.7
No-Action Condition	2,164	2,132	32	98.5

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

As noted above, in the future with the proposed actions, it is anticipated that the existing 49-slot Duffield Children Care Center would be displaced from the development site, reducing the study area child care capacity to 2,115 slots. In addition, while the Proposed Project would not include any residential units, under the Alternative Residential RWCDS, up to 78 affordable units would be introduced on the development site, increasing the study area child care enrollment by 14 to 2,146. As presented in **Table E-4**, with the displacement of the Duffield Children's Center and the increase in child care demand anticipated under the Alternate Residential RWCDS, study area child care facilities would operate with a utilization rate of 101.5 percent with a shortfall of 31 slots. While study area child care facilities would operate above capacity in the future with the proposed actions, the Alternate Residential Scenario would only increase the child care utilization rate by 3.0 percent, which is less than the five percent *CEQR Technical Manual* impact threshold.

Table E-4: 2021 With-Action Condition Study Area Child Care Utilization

	Capacity	Enrollment	Available Slots	Utilization (%)
No-Action Condition	2,164	2,132	32	98.5
Increment	-49	+14	-63	+3.0
With-Action Condition	2,115	2,146	-31	101.5

As such, the direct displacement of the existing child care center on the development site would not represent a significant adverse direct impact.

ATTACHMENT F

OPEN SPACE

I. INTRODUCTION

An open space assessment may be necessary if a proposed action could potentially have a direct or indirect effect on open space resources in the project area. A direct effect would "physically change, diminish, or eliminate an open space or reduce its utilization or aesthetic value." An indirect effect may occur when the population generated by a proposed development would be sufficient to noticeably diminish the ability of an area's open space to serve the existing or future population. According to 2014 *City Environmental Quality Review* (CEQR) *Technical Manual* guidance, if a project is located in an area considered neither under-served nor well-served by open space, an analysis of indirect effects on open space is warranted if a proposed action would add more than 200 residents or 500 employees. The development site at 101 Fleet Place is located in an area considered neither under-served nor well-served by open space.

The Proposed Project is expected to result in an incremental increase of 209,354 gsf of commercial space over the 2021 No-Action condition. This would result in an increase of 800 employees, which exceeds the *CEQR Technical Manual* threshold for a preliminary indirect non-residential open space analysis. In addition, the Alternate Residential reasonable worst-case development scenario (RWCDS) would introduce approximately 521 residents[1] over the 2021 No-Action condition, exceeding the CEQR threshold for a preliminary indirect residential open space analysis. As such, 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 and worker populations.

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. A five percent or greater decrease in the open space ratio is considered to be "substantial," and a decrease of less than one percent is generally considered to be insignificant unless open space resources are extremely limited. The open space study area analyzed in this attachment is located in an area that is considered neither under-served nor well-served by open space as defined in the 2014 *CEQR Technical Manual Appendix: Open Space Maps*.

As two RWCDS were identified for the proposed actions, the 2021 With-Action condition was analyzed separately for the Proposed Project and the Alternate Residential RWCDS. As discussed below, the detailed analysis shows that the Proposed Project would decrease the non-residential study area passive open space ratio by 7.39 percent from the No-Action condition, which would be above the *CEQR Technical Manual* threshold of five percent. While the non-residential study area's passive open space ratio would

[1] Based on the average household size of 2.01 for Brooklyn Community District (CD) 2, 2010 Census.

decrease by more than five percent from No-Action conditions, it would remain well above the City's guideline ratio of 0.15 acres per 1,000 workers, at 1.78 acres per 1,000 workers. Therefore, the Proposed Project would not result in a significant adverse open space impact. The detailed analysis for the Alternate Residential RWDS shows that the residential study area total, passive, and active open space ratios would each decrease by 0.80 percent from the No-Action condition. As the total, passive, and active open space ratios would decrease by less than five percent, no significant adverse open space impacts would result.

III. METHODOLOGY

The analysis of open space resources has been conducted in accordance with 2014 *CEQR Technical Manual* guidance. Using CEQR methodology, the adequacy of open space in the study area is assessed quantitatively using a ratio of usable open space acreage to the study area population, referred to as the open space ratio. This quantitative measure is then used to assess the changes in the adequacy of open space resources by the 2021 build year, both without and with the proposed actions. In addition, qualitative factors are considered in making an assessment of the proposed actions' effects on open space resources.

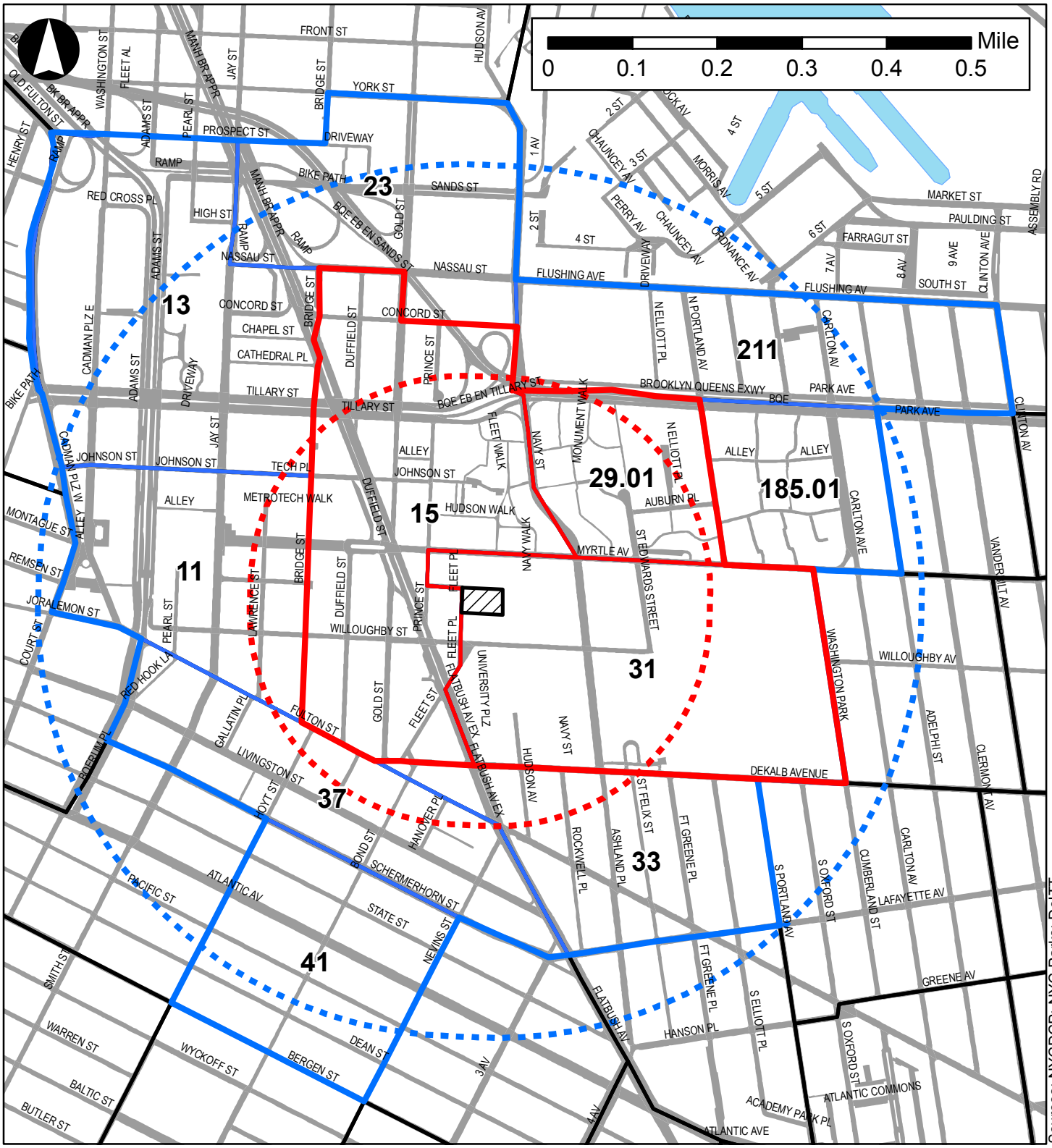
In accordance with *CEQR Technical Manual* guidance, the open space study area is generally defined by a reasonable walking distance that users would travel to reach local open space and recreational resources. That distance is typically a half-mile radius for residential projects and a quarter-mile radius for commercial projects with a worker population. As discussed in **Attachment A, "Project Description,"** the Proposed Project would introduce approximately 800 employees to the project area compared to the 2021 No-Action condition. In addition, the Alternate Residential RWCDS would introduce approximately 521 residents to the project area compared to the 2021 No-Action condition. Because the proposed actions have to potential to significantly increase both the local residential and worker populations, an open space assessment for both the residential and non-residential populations generated by the proposed actions is warranted.

Open Space Study Areas

Pursuant to *CEQR Technical Manual* guidance, two study areas were evaluated: a non-residential (worker) study area based on a quarter-mile distance from the project area, and a residential study area based on a half-mile distance from the project area. These two study areas were adjusted to include all census tracts with at least 50 percent of their area within the quarter-mile or half-mile boundary, as recommended in the *CEQR Technical Manual*. In this way, the study areas allow analysis of both the open spaces in the area, as well as the population data.

As shown in **Figure F-1**, the quarter-mile non-residential study area is generally bounded by portions of the Brooklyn Queens Expressway (BQE), Concord Street, and Nassau Street to the north, DeKalb Avenue and Fulton Street to the south, North Portland Avenue and Washington Park to the east, and Bridge Street to the west. The half-mile residential study area is generally bounded by Flushing Avenue, Prospect Street and York Street to the north, Bergen Street, Lafayette Avenue, and Schermerhorn Street to the south, Adelphi Street, Clinton Avenue, South Portland Avenue, and Washington Park to the east, and Boerum Place and Cadman Plaza West to the west (refer to **Figure F-1**).

Figure F-1
Open Space Study Areas



Legend

- Project Area
- 1/2-Mile Radius
- Half-Mile Residential Study Area
- 1/4-Mile Radius
- Quarter-Mile Non-Residential Study Area
- 2010 Census Tracts

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 (1) there are no publicly-accessible open space resources within the project area, and (2) the proposed actions would not result in significant adverse shadow, air quality, noise, or construction impacts on area open space resources, the proposed actions would not have any direct effects on open space resources and no further analysis is warranted.

Indirect Effects Analysis

Indirect effects occur to an area's open space resources when a proposed action would add enough population, either 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 project area is located in an area that is not considered well-served or under-served by open space.

With an inventory of available open space resources and potential users, the adequacy of open space in the study areas can be assessed both quantitatively and qualitatively. The quantitative approach computes the ratio of open space acreage to the population in the study areas 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 areas, the availability of private recreational facilities, and the demographic characteristics of the study areas' population. Specifically, the analysis in this attachment includes:

- Characteristics of the two open space user groups: residents and workers. To determine the number of residents in the study areas, 2010 Census data have been compiled for census tracts comprising the non-residential and residential open space study areas. Because the study areas are characterized by a workforce population that may also use open spaces, the number of employees in the study areas has also been calculated, based on reverse journey-to-work census data provided by Census Transportation Planning Products (CTPP), which is based on 2006-2010 estimates from the American Community Survey (ACS).
- An inventory of all publicly accessible passive and active recreational facilities in the non-residential and residential open space study areas.
- An assessment of the quantitative ratio of open space in the two study areas by computing the ratio of open space acreage to the population in each study area and comparing this open space ratio with certain guidelines. For the residential population, there are generally two guidelines that are used to evaluate residential open space ratios. The *CEQR Technical Manual* generally recommends a comparison to the median ratio for community districts in New York City, which is 1.5 acres of open space per 1,000 residents. However, the *CEQR Technical Manual* planning guidance is 2.5 acres of

open space per 1,000 residents, including 2.0 acres of active open space and 0.5 acres of passive open space. According to *CEQR Technical Manual* guidance, a ratio of 0.15 acres of passive open space per 1,000 workers represents a reasonable amount of open space. The needs of workers and residential populations are also considered together in each study area because it is assumed that both will use the same passive open spaces. Therefore, a weighted average is also considered for the analysis that balances the amount of open space necessary to meet the guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 workers. Because this ratio changes depending on the proportion of residents and workers in each study area, the tables summarizing the open space ratios outline the amount of open space needed in each condition in each study area, and calculate the weighted average ratio of passive open space acres per 1,000 combined residents and workers.

- An evaluation of qualitative factors affecting open space use.
- A final determination of the adequacy of open space in the non-residential and residential open space study areas.
- An assessment of expected changes in future levels of open space supply and demand in the 2021 analysis year, based on other planned development projects and anticipated background growth rates within the open space study areas. To estimate the population expected in the study areas in the future without the proposed actions, both background growth and study area No-Action developments are accounted for. Any new open space or recreational facilities that are anticipated to be operational by the analysis year are also accounted for. Open space ratios are calculated for future No-Action conditions and compared with existing ratios to determine changes in future levels of open space adequacy.
- As two RWCDS were identified for the proposed actions, the 2021 With-Action condition is analyzed separately for the Proposed Project and the Alternate Residential RWCDS. The Proposed Project, which would exceed the indirect non-residential open space analysis threshold, is analyzed for the non-residential study area open space assessment, while the Alternate Residential Scenario, which would exceed the indirect residential open space analysis threshold, is analyzed for the residential study area open space assessment.

IV. DETAILED ANALYSIS

Study Area Population

Non-Residential (¼-Mile) Study Area

As shown in **Table F-1**, based on ACS reverse journey-to-work census data compiled by CTPP, the existing worker population for the non-residential open space study area is estimated at approximately 7,005 workers. As also shown in **Table F-1**, 2010 Census data indicate that the non-residential study area has a residential population of approximately 9,211 residents. Within the non-residential study area, the total population (residents plus workers) is estimated at 16,216 (refer to **Table F-1**). Although this analysis conservatively assumes that the residents and employees are separate populations, it is possible that some of the residents live near their workplace or work from home. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

Table F-1: Study Area Residential and Non-Residential Populations

Census Tract	Residential Population	Non-Residential (Worker) Population	Total Population
1/4-Mile Non-Residential Study Area			
15	3,521	3,800	7,321
29.01	3,218	830	4,048
31	2,472	2,375	4,847
1/4-Mile Study Area Total	**9,211**	**7,005**	**16,216**
1/2-Mile Residential Study Area			
11	84	30,545	30,629
13	2,275	7,435	9,710
23	4,247	275	4,522
33	2,327	7,955	10,282
37	390	19,445	19,835
41	3,598	2,465	6,063
185.01	3,827	150	3,977
211	1,210	1,560	2,770
¼- to ½-Mile Subtotals	*17,958*	*69,830*	*87,788*
½-Mile Study Area Totals	***27,169***	***76,835***	***104,004***

Source: U.S. Census Bureau, 2010 Census; U.S. Census Bureau, ACS 2006-2010 Five-Year Estimates. Special Tabulation: Census Transportation Planning.

Residential (½-Mile) Study Area

As shown in **Table F-1**, 2010 Census data indicate that the residential study area has a residential population of approximately 27,169 residents. As also shown in **Table F-1**, based on ACS reverse journey-to-work census data compiled by CTPP, the existing worker population for the larger residential open space study area is estimated at approximately 76,835 workers, for a combined residential study area population of 104,004.

As shown in **Table F-2**, people between the ages of 20 and 64 make up the majority (approximately 65.6 percent) of the residential population in the ½-mile study area. Children and teenagers (0 to 19 years old) account for approximately 23.4 percent of the residential study area population, and persons 65 years and over account for approximately 11.0 percent of the residential study area population. As also presented in **Table F-2**, the ½-mile study area includes a lower population of children and teenagers and, concurrently, a higher population of adults aged 20 to 64 and seniors compared to Brooklyn and New York City as a whole.

However, the residential study area exhibits a lower median age than that of both Brooklyn and New York City as a whole. It should also be noted that the median age varies by census tract, with census tract 37 exhibiting the lowest median age (27.8) and census tract 13 exhibiting the highest median age (40.0).

Within a given area, the age distribution of a population affects the way open spaces are used and the need for various types of recreational facilities. Typically, children four years old or younger use traditional playgrounds that have play equipment for toddlers and preschool-aged children. Children ages five

through nine typically use traditional playgrounds, as well as grassy and hard-surfaced open spaces, which are important for activities, such as ball playing, running, and skipping rope. Children ages ten through 14 use playground equipment, court spaces, Little League fields, and ball fields. Teenagers' and young adults' needs tend toward court game facilities, such as basketball and field sports. Adults between the ages of 20 and 64 continue to use court game facilities and fields for sports, as well as more individualized recreation, such as rollerblading, biking, and jogging, requiring bike paths, promenades, and roadways. Adults also gather with families for picnicking, ad hoc active sports, 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.

Table F-2: Residential Study Area Population Age Breakdown

Census Tract	Total Residential Population	Age Distribution												Median Age
		Under 5		5 to 9		10 to 14		15 to 19		20 to 64		65 and Over		
		#	%	#	%	#	%	#	%	#	%	#	%	
11	84	5	6.0	1	1.2	4	4.8	5	6.0	62	73.8	7	8.3	33.6
13	2,275	73	3.2	48	2.1	23	1.0	29	1.3	1,802	79.2	300	13.2	40.0
15	3,521	220	6.2	137	3.9	134	3.8	218	6.2	2,602	73.9	210	6.0	32.1
23	4,247	269	6.3	258	6.1	412	9.7	448	10.5	2,446	57.6	414	9.7	31.7
29.01	3,218	274	8.5	247	7.7	285	8.9	323	10.0	1,761	54.7	328	10.2	28.9
31	2,472	65	2.6	42	1.7	34	1.4	407	16.5	1,315	53.2	609	24.6	38.8
33	2,327	144	6.2	68	2.9	60	2.6	77	3.3	1,855	79.7	123	5.3	33.1
37	390	13	3.3	10	2.6	13	3.3	10	2.6	330	84.6	14	3.6	27.8
41	3,598	199	5.5	148	4.1	133	3.7	83	2.3	2,584	71.8	451	12.5	36.6
185.01	3,827	316	8.3	244	6.4	284	7.4	323	8.4	2,248	58.7	412	10.8	31.1
211	1,210	48	4.0	58	4.8	94	7.8	73	6.0	821	67.9	116	9.6	35.4
½-Mile Study Area	***27,169***	***1,626***	***6.0***	***1,261***	***4.6***	***1,476***	***5.4***	***1,996***	***7.3***	***17,826***	***65.6***	***2,984***	***11.0***	***33.6***
Total for Brooklyn	*2,504,700*	*177,198*	*7.1*	*159,391*	*6.4*	*156,563*	*6.3*	*170,684*	*6.8*	*1,553,231*	*62.0*	*287,633*	*11.5*	*34.1*
Total for NYC	*8,175,133*	*517,724*	*6.3*	*473,159*	*5.8*	*468,154*	*5.7*	*535,833*	*6.6*	*5,187,105*	*63.4*	*993,158*	*12.1*	*35.5*

Source: U.S. Census Bureau, 2010 Census.

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*, publicly accessible open space is defined as facilities open to the public at designated hours on a regular basis and is assessed for impacts using both a quantitative and a qualitative analysis, whereas private open space is not accessible to the general public on a regular basis and is considered only qualitatively.

An open space is determined to be active or passive by the uses that the design of the space allows. Active open space is the part of a facility used for active play, such as sports or exercise, and may include playground equipment, playing fields and courts, swimming pools, skating rinks, golf courses, 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 lawn or riverfront walkway, which can also be used for ball playing, jogging, or rollerblading.

Within the open space study areas, 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 September 2017; the New York City Department of Parks and Recreation's (NYC Parks) website; and the New York City Open Accessible Space

Information System (OASIS) database and other secondary sources of information, 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 and 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 F-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 open space study areas, as well as their condition and utilization. **Figure F-2** maps their location within the study areas.

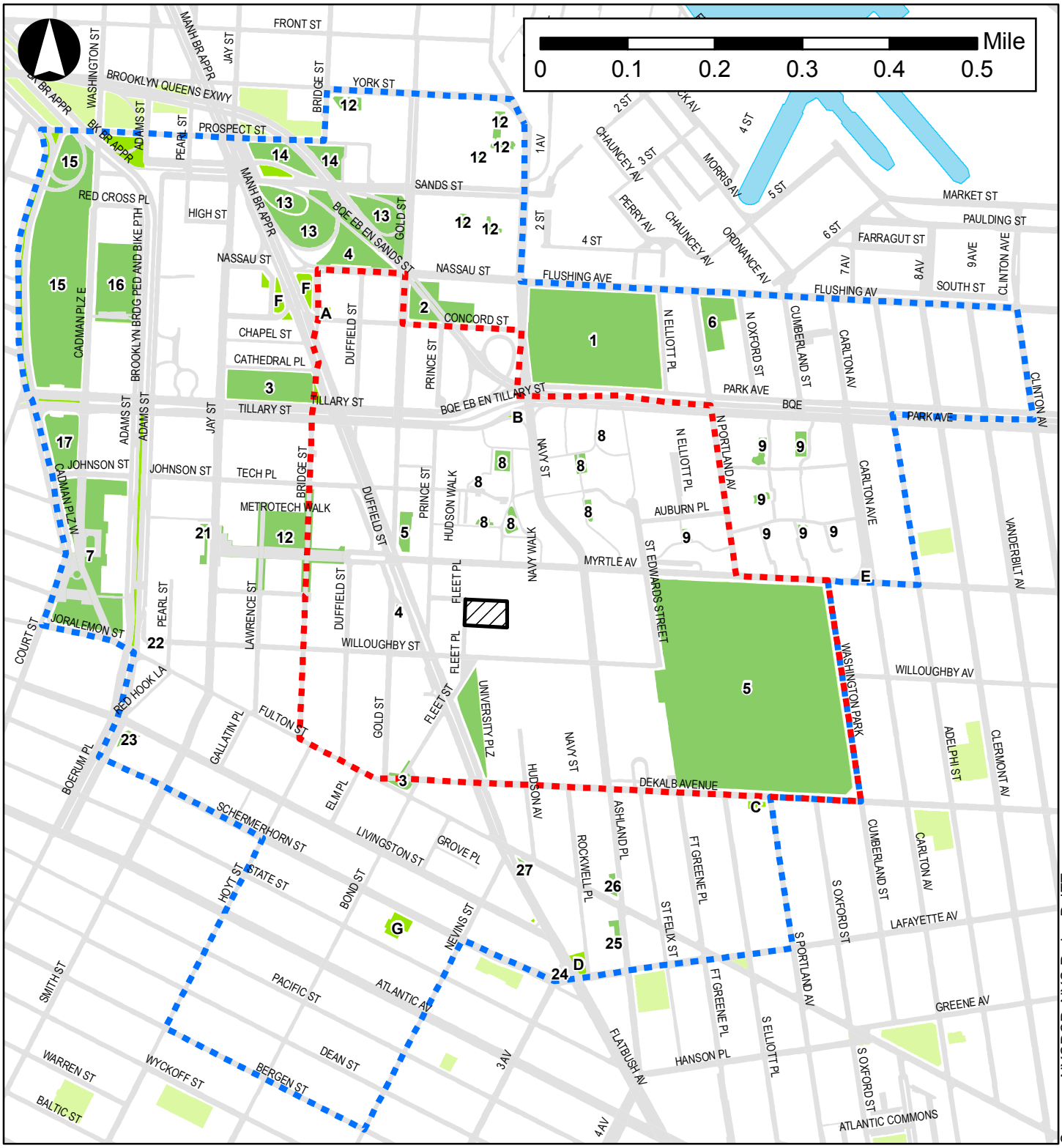
Non-Residential (¼-Mile) Study Area

As shown in **Table F-3**, the non-residential study area contains a total of 34.99 acres of open space, of which approximately 18.30 acres (52.3 percent) comprises passive open space uses and approximately 16.69 acres (47.7 percent) comprises active open space uses. As shown in **Figure F-2** and **Table F-3**, seven publicly accessible open space and recreational resources are located within the non-residential study area.

A majority of the non-residential study area’s open space acreage is located within Fort Greene Park (Map #1), a 30.17-acre open space resource located along the study area’s southeastern border. Fort Greene Park, which is owned and operated by NYC Parks, is programmed with both active and passive open space uses. Active uses include tennis courts, basketball courts, playgrounds, spray showers, and a dog park, and passive uses include the Prison Ship Martyrs Monument, a nature center, barbecue and picnic areas, walking paths, benches, and a variety of landscaped and forested areas.

The six remaining open space resources within the non-residential study area are below three acres in size. The 1.16-acre University Place (Map #2) is a triangular-shaped open space resource located along Flatbush Avenue and Fleet Street, to the south of the project area. This open space resource primarily provides passive uses, including a landscaped plaza and benches. Open space resources are also present within the grounds of two New York City Housing Authority (NYCHA) developments: Ingersoll Houses (Map #3) and a portion of the Walt Whitman Houses (Map #4). Together, these developments provide 3.03-acres of active and passive open space uses, including multiple playgrounds and basketball courts, as well as walking paths and benches.

Figure F-2
Open Space Resources



Sources: NYCDCP; NYC Parks; DoITT

Legend

- Project Area
- Quarter-Mile Non-Residential Study Area
- Half-Mile Residential Study Area
- 1 — Quantitative Open Space Resources
- A — Non-Quantitative Open Space Resources
- Open Space Resources Outside of Study Area

Table F-3: Open Space Resources within the ¼-Mile and ½-Mile Open Space Study Areas

Map No.[1]	Name	Location	Owner/ Agency[2]	Amenities	Hours of Operation	Acreage	Active		Passive		Condition	Utilization
							Acres	%	Acres	%		
¼-Mile Non-Residential Study Area												
1	Fort Greene Park	Myrtle Ave. & DeKalb Ave. btwn. Washington Park & St. Edward's St.	NYC Parks	Barbecuing Areas, Basketball Courts, Bathrooms, Dog Parks, Walking Paths, Nature Center, Monument, Playgrounds, Spray Showers, Tennis Courts, Wifi Access, Benches	6AM to 1AM	30.17	15.09	50	15.09	50	Excellent	Moderate
2	University Place	Flatbush Ave. at Fleet St.	NYC Parks	Landscaped plaza, Benches	6AM to Dusk	1.16	0.06	5	1.10	95	Good	Moderate
3	Albee Square	DeKalb Ave. & Fulton St.	DOT	Landscaped plaza, Tables, Benches	24 Hours	0.11	0.00	0	0.11	100	Excellent	High
4	Plaza	Gold St., Flatbush Ave. Ext., & Willoughby St.	HPD	Plaza with plantings, Benches, Trees	24 Hours	0.08	0.00	0	0.08	100	Good	Low
5	Fort Greene Plaza	Tillary St., Park Ave., & Navy St.	AvalonBay Communities, Inc.	Landscaped plaza, Lawn, Benches	24 Hours	0.44	0.00	0	0.44	100	Excellent	Low
6	Ingersoll Houses	Bounded by Prince St., Park Ave., St. Edwards St., & Myrtle Ave.	NYCHA	Playgrounds, Basketball Courts, Benches	6AM to Dusk	2.96	1.48	50	1.48	50	Fair	Low
7	Walt Whitman Houses	Bounded by N. Portland Ave., Park Ave., Carlton Ave., & Myrtle Ave.	NYCHA	Playground & Benches	6AM to Dusk	0.07	0.06	90	0.01	10	Good	Low

Table F-3 (continued): Open Space Resources within the ¼-Mile and ½-Mile Open Space Study Areas

¼-Mile Study Area Totals						***34.99***	***16.69***	***47.7***	***18.30***	***52.3***		
½-Mile Residential Study Area												
Map No.[1]	**Name**	**Location**	**Owner/ Agency[2]**	**Amenities**	**Hours of Operation**	**Acreage**	**Active**		**Passive**		**Condition**	**Utilization**
							Acres	**%**	**Acres**	**%**		
8	Walt Whitman Houses	Bounded by N. Portland Ave., Park Ave., Carlton Ave., & Myrtle Ave.	NYCHA	Playgrounds, Basketball Courts, Benches	6AM to Dusk	0.93	0.47	50	0.47	50	Good	Low
9	Oxport Playground	Flushing Ave. btwn. N. Portland Ave. & N. Oxford St.	NYC Parks/ DOE	Basketball Courts, Fitness Equipment, Playgrounds, Spray Showers, Benches	6AM to Dusk	1.03	0.93	90	0.10	10	Good	Moderate
10	Commodore Barry Park	Nassau St. & Park Ave., between Navy St. & N. Elliot Pl.	NYC Parks	Baseball Fields, Basketball Courts, Bathrooms, Football Fields, Handball Courts, Outdoor Swimming Pool, Playgrounds, Spray Showers, Benches	6AM to 9PM	10.39	9.35	90%	1.04	10%	Good	Low
11	Golconda Playground	Gold St. btwn. Nassau St. & Concord St.	NYC Parks	Playgrounds, Basketball Courts, Handball Courts, Benches, Skate Park	6AM to Dusk	1.50	1.35	90	0.15	10	Good	Low
12	Farragut Houses	Bounded by Gold & Bridge Sts., York St., Navy St., & Nassau St.	NYCHA	Playgrounds, Basketball Courts, Benches	6AM to Dusk	1.22	0.61	50	0.61	50	Fair	Low
13	Trinity Park	Nassau St., Sands St. btwn. Manhattan Bridge & Gold St.	NYC Parks	Checkers/Chess Tables, Benches, Landscaping, Trees	6AM to Dusk	0.35	0.00	0	0.35	100	Poor	Low

Table F-3 (continued): Open Space Resources within the ¼-Mile and ½-Mile Open Space Study Areas

½-Mile Residential Study Area												
Map No.[1]	Name	Location	Owner/ Agency[2]	Amenities	Hours of Operation	Acreage	Active		Passive		Condition	Utilization
							Acres	%	Acres	%		
14	Bridge Park 3	Sands St., Prospect St. btwn. Bridge St. & Manhattan Bridge	NYC Parks	Basketball Courts, Play Areas, Plaza, Plantings, Benches	6AM to Dusk	1.93	1.83	95	0.10	5	Good	Low
15	Cadman Plaza Park	Cadman Plaza West, Cadman Plaza East btwn. BQE & Tillary St.	NYC Parks	Bathrooms, Dog Parks, Gardens, Lawn, Memorial, Walking Paths, Wifi Access, Benches	6AM to 11PM	10.38	4.15	40	6.23	60	Excellent	Moderate
16	Walt Whitman Park	Cadman Plaza East, Adams St. btwn. Red Cross Pl. & Tillary St.	NYC Parks	Gardens, Lawn, Statue, Walking Paths, Benches	6AM to Dusk	2.91	0.44	15	2.47	85	Excellent	Moderate
17	Korean War Veterans Plaza	Cadman Plaza West, Cadman Plaza East btwn. Tillary St. & Johnson St.	NYC Parks	Gardens, Monument, Seating Areas	6AM to Dusk	1.20	0.00	0	1.20	100	Excellent	Moderate
18	Columbus Park	Adam St., Court St., Cadman Plaza West btwn. Johnson St. & Fulton St.	NYC Parks	Bathrooms, Eateries, Gardens, Seating Areas, Walking Paths	6AM to Dusk	4.14	0.21	5	3.93	95	Excellent	High
19	Metrotech Commons	Myrtle Ave., Lawrence St., Bridge St., & Jay St. btwn. Tech Pl. & Willoughby St.	City of New York, DOT, & HPD	Landscaped plaza, Pedestrian Mall, Benches	24 Hours	3.80	0.38	10	3.42	90	Excellent	High

Table F-3 (continued): Open Space Resources within the ¼-Mile and ½-Mile Open Space Study Areas

½-Mile Residential Study Area												
Map No.[1]	Name	Location	Owner/ Agency[2]	Amenities	Hours of Operation	Acreage	Active		Passive		Condition	Utilization
							Acres	%	Acres	%		
20	McLaughlin Park	Jay St. & Bridge St. btwn. Tillary St. & Cathedral Pl.	NYC Parks	Basketball Courts, Bathrooms, Fitness Equipment, Handball Courts, Playgrounds, Spray Showers, Wifi Access, Benches	6AM to 10PM	1.98	1.58	80	0.40	20	Good	High
21	350 Jay Street Plaza	Jay St. btwn. Johnson & Willoughby Sts.	MUSS & MUSS	Paved plaza, Benches, Planters, Trees	24 Hours	0.73	0.00	0	0.73	100	Excellent	Low
22	Willoughby Plaza	Willoughby St. btwn. Pearl & Adams Sts.	DOT	Pedestrian Plaza, Tables, Seating, Plantings	24 Hours	0.17	0.00	0	0.17	100	Excellent	High
23	130 Livingston Street Plaza	Livingston St., Schermerhorn St., Smith St., & Boerum Pl.	MTA	Landscaped plaza, Seating	24 Hours	0.24	0.00	0	0.24	100	Good	Low
24	Temple Square	Flatbush Ave. & Schermerhorn St.	DOT	Paved plaza, Seating, Trees	24 Hours	0.07	0.00	0	0.07	100	Fair	Low
25	Visual Arts Plaza	Ashland Pl. btwn. Fulton & Lafayette Sts.	HPD	Paved plaza, Seating, Trees	24 Hours	0.37	0.00	0	0.37	100	Excellent	Low
26	230 Ashland Place Plaza	Ashland Pl. & Fulton St.	Private Owner	Paved plaza, Seating, Trees	24 Hours	0.11	0.00	0	0.11	100	Excellent	Low
27	Fox Square Plaza	Flatbush Ave. & Fulton St.	DOT	Paved plaza, Seating, Trees	24 Hours	0.44	0.00	0	0.44	100	Good	Moderate
¼-Mile to ½-Mile Subtotals						***43.39***	***20.92***	***48***	***22.47***	***52***		
½-Mile Study Area Totals						***78.38***	***37.60***	***48***	***40.78***	***52***		

Table F-3 (continued): Open Space Resources within the ¼-Mile and ½-Mile Open Space Study Areas

Resources Not Included in Quantitative Assessment (¼-Mile Study Area)										
Map No.[1]	Name	Location	Owner/ Agency[2]	Amenities	Hours of Operation	Acreage	Active		Passive	
							Acres	%	Acres	%
A	Bridge Plaza Community Garden	153 Concord St.	New York Restoration Project	Plantings, plant beds, benches	No Listed Hours	0.07	0.00	0	0.07	100
B	Arbor Place	Tillary St., Park Ave., & Navy St.	NYC Parks/DOT	Plantings and Trees	-	0.07	0.00	0	0.07	100
Total Additional ¼-Mile Study Area Open Space Not Included						***0.14***	***0.00***	***0***	***0.14***	***100***
Resources Not Included in Quantitative Assessment (½-Mile Study Area)										
C	Greene Garden	2 South Portland Ave.	Brooklyn Queens Land Trust	Plantings, plant beds, benches	Monday-Friday: 11AM to 6PM; Saturday & Sunday: 11AM to 3PM	0.08	0.00	0	0.08	100
D	Brooklyn Bears/Rock well Place Community Garden	65-73 Flatbush Ave.	NYC Parks	Plantings, plant beds, benches	No Listed Hours	0.08	0.00	0	0.08	100
E	JW Person Square	Carlton Ave. & Myrtle Ave.	NYC Parks/DOT	Plantings and Trees	-	0.06	0.00	0	0.06	100
F	Park	Bridge Plaza Ct., Bridge St., & Manhattan Bridge btwn. Nassau St. & Concord St.	NYC Parks/ DOT	Plantings and Trees	-	0.50	0.00	0	0.50	100
G	P.S. 369 Playground	274 Schermerhorn St.	DCAS/DOE	Asphalt Play Areas, Multipurpose Sports Field, Playgrounds	Currently in use as a parking lot	0.36	0.36	100	0.00	0
Total Additional ½-Mile Study Area Open Space Not Included						***1.22***	***0.36***	***30***	***0.86***	***70***

Source: OASIS, NYC Parks, 2016 Primary Land Us Tax Lot Output (PLUTO) data, site visits conducted in September 2017.

Notes:

[1] Refer to Figure F-2.

[2] NYC Parks = New York City Department of Parks and Recreation; DOT= New York City Department of Transportation; DOE = New York City Department of Education; DCAS = New York City Department of Citywide Administrative Services.

In addition, there are two open space resources that are conservatively not included in the quantitative analysis because they do not provide consistent public hours or do not include seating or other amenities. Together, these two resources, a community garden and a street triangle, comprise approximately 0.14 acres of open space.

Residential (½-Mile) Study Area

The residential study area includes all open space resources included in the non-residential study area, as well as 20 additional resources (refer to **Table F-3** and **Figure F-2**). As shown in **Table F-3**, the residential study area contains a total of approximately 78.38 acres of publicly accessible open space (including all of the open space resources listed in the non-residential study area). Of this total, approximately 40.78 acres (52 percent) contain passive open space uses and 37.60 acres (48 percent) contain active space uses.

The largest open space resource in the residential study area, as in the non-residential study area, is Fort Greene Park (described in the preceding section). The remaining open space resources located within the residential study area (but outside of the non-residential study area) are clustered in the northern and western portions of the study area. Other significant open space resources located in the residential study area include the 10.39-acre Commodore Barry Park (Map #7), which is located along the northern border of the study area, and the 10.38-acre Cadman Plaza Park (Map #12), which is located in the northwestern corner of the study area. Commodore Barry Park, which is operated by NYC Parks, is primarily programmed with a variety of active open space uses, including baseball and football fields, basketball and handball courts, an outdoor pool, playgrounds, and spray showers. The NYC Parks-operated Cadman Plaza Park is primarily programmed with passive open space amenities, including walking paths, a war memorial, and benches, as well as a central lawn and other landscaped areas.

With the exception of these two open space resources, the remaining open space resources located within the residential study area (but outside of the non-residential study area) are below seven acres in size and include a variety of passive (lawn, landscaped areas, walking paths, and benches) and active (basketball and handball courts, fitness equipment, playgrounds, skate park, and spray showers) open space uses.

In addition, there are seven open space resources that are conservatively not included in the quantitative analysis because they do not provide consistent public hours or do not include seating or other amenities. These seven resources consist of community gardens, street triangles, and Greenstreets, and, together, comprise approximately 1.22 acres of open space.

Assessment of Existing Open Space Adequacy

Non-Residential (¼-Mile) Study Area

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

Quantitative Assessment

The non-residential study area includes a total of 34.99 acres of open space, of which approximately 18.30 acres contain passive uses. A total of 7,005 people work within the non-residential study area boundary, and 9,211 residents live within this study area; the combined residential and non-residential population is 16,216.

Based on *CEQR Technical Manual* methodology, the non-residential study area has a passive open space ratio of 2.61 acres per 1,000 workers, which is 17 times greater than the City's guideline of 0.15 acres (see **Table F-4**). As such, workers in the non-residential study area are well-served by open space resources under existing conditions. Similarly, the combined workers and residents passive open space ratio is 1.13 acres per 1,000 residents and workers, more than three times greater than the recommended weighted average ratio of 0.349 acres per 1,000 combined users (refer to **Table F-4**).

Table F-4: Adequacy of Open Space Resources: Existing Conditions

Population		Open Space Acreage			Open Space Ratios per 1,000 People			*CEQR Technical Manual* Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (¼-Mile) Study Area										
Workers	7,005	34.99	18.30	16.69	N/A	2.61	N/A	N/A	0.15	N/A
Combined Workers & Residents	16,216				N/A	1.13	N/A	N/A	0.349[1]	N/A
Residential (¼-Mile) Study Area										
Residents	27,169	78.38	40.78	37.60	2.88	1.50	1.38	2.50	0.50	2.00
Combined Workers & Residents	104,004				N/A	0.39	N/A	N/A	0.241[1]	N/A

Notes:

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

Qualitative Assessment

As shown in **Table F-3**, a majority of the non-residential study area open space resources are in good or excellent condition and feature low to moderate utilization levels. The non-residential study area includes many passive open space uses, such as plazas with seating and shade trees, lawns and landscaped areas, barbecue and picnic areas, walking paths, and benches, all of which are suitable for use by the non-residential population in the study area.

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

Residential (½-Mile) Study Area

Quantitative Assessment

With a total of 78.38 acres of open space, of which approximately 40.78 acres contain passive uses and approximately 37.60 acres contain active uses, and a total residential population of 27,169, the residential study area has an overall open space ratio of 2.88 acres per 1,000 residents, which is greater than the City's planning guideline of 2.5 acres of combined active and passive open space per 1,000 residents (see **Table F-4**) and the citywide community district median of 1.5 acres per 1,000 residents. With a residential passive open space ratio of 1.50 acres per 1,000 residents, the residential study area, similarly, exceeds the *CEQR Technical Manual* guidance of 0.5 acres of passive open space per 1,000 residents. While the active open space ratio of 1.38 acres per 1,000 residents is lower than the City's planning guideline of 2.0 acres of active open space per 1,000 residents, it is greater than the citywide community district median. As such, residents in the residential study area are well-served by open space resources under existing conditions.

With a combined worker and residential population of 104,004, the combined passive open space ratio in the residential study area is 0.39 acres per 1,000 users, which similarly exceeds the recommended weighted average guideline ratio of 0.241 acres per 1,000 residents and workers.

Qualitative Assessment

The residential study area exhibits a total open space ratio that is above the median ratios for community districts in New York City (1.5 acres of open space per 1,000 residents) and the City's optimal benchmark for large-scale proposals (2.5 acres of open space per 1,000 residents). In addition, as shown in **Table F-3**, open space resources within the residential study area include a variety of active open spaces uses appropriate for each residential user group, including an outdoor pool, multiple playgrounds, basketball and handball courts, spray showers, baseball and football fields, fitness equipment, skate park, and walking paths. Furthermore, and as noted in **Table F-3**, the majority of the study area open space resources exhibit low to moderate utilization rates.

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

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

Study Area Population

As discussed in **Attachment C, "Land Use, Zoning, and Public Policy,"** there are 41 known and anticipated developments within a half-mile of the project area; 36 of these developments are located within the open space study areas. In total, the 36 combined No-Action developments are expected to introduce approximately 14,934 residents and 13,062 employees to the ½-mile residential study area; 2,735 employees and 6,017 residents are expected to be added to the ¼-mile non-residential study area. In addition, residential and non-residential background growth rates were developed based on recent

Census and employment trends. These growth rates were applied to the existing residential and non-residential populations to account for general background growth anticipated in the study areas. As indicated in **Table F-5**, the anticipated No-Action developments, combined with the residential and non-residential growth rates, are expected to increase the ¼-mile non-residential study area population to 10,022 workers and 32,970 combined workers and residents. The ½-mile residential study area population is expected to increase to 64,874 residents and 157,869 combined workers and residents.

Table F-5: No-Action Open Space Study Area Population[1]

	Existing Population	No-Action Population resulting from General Background Growth[1]	Additional Population on No-Action Development Sites[2]	2021 No-Action Population
Non-Residential (¼-Mile) Study Area				
Workers	7,005	282	2,735	10,022
Combined Workers & Residents	16,216	8,002	8,752	32,970
Residential (½-Mile) Study Area				
Residents	27,169	22,771	14,934	64,874
Combined Workers & Residents	104,004	25,869	27,996	157,869

Notes:

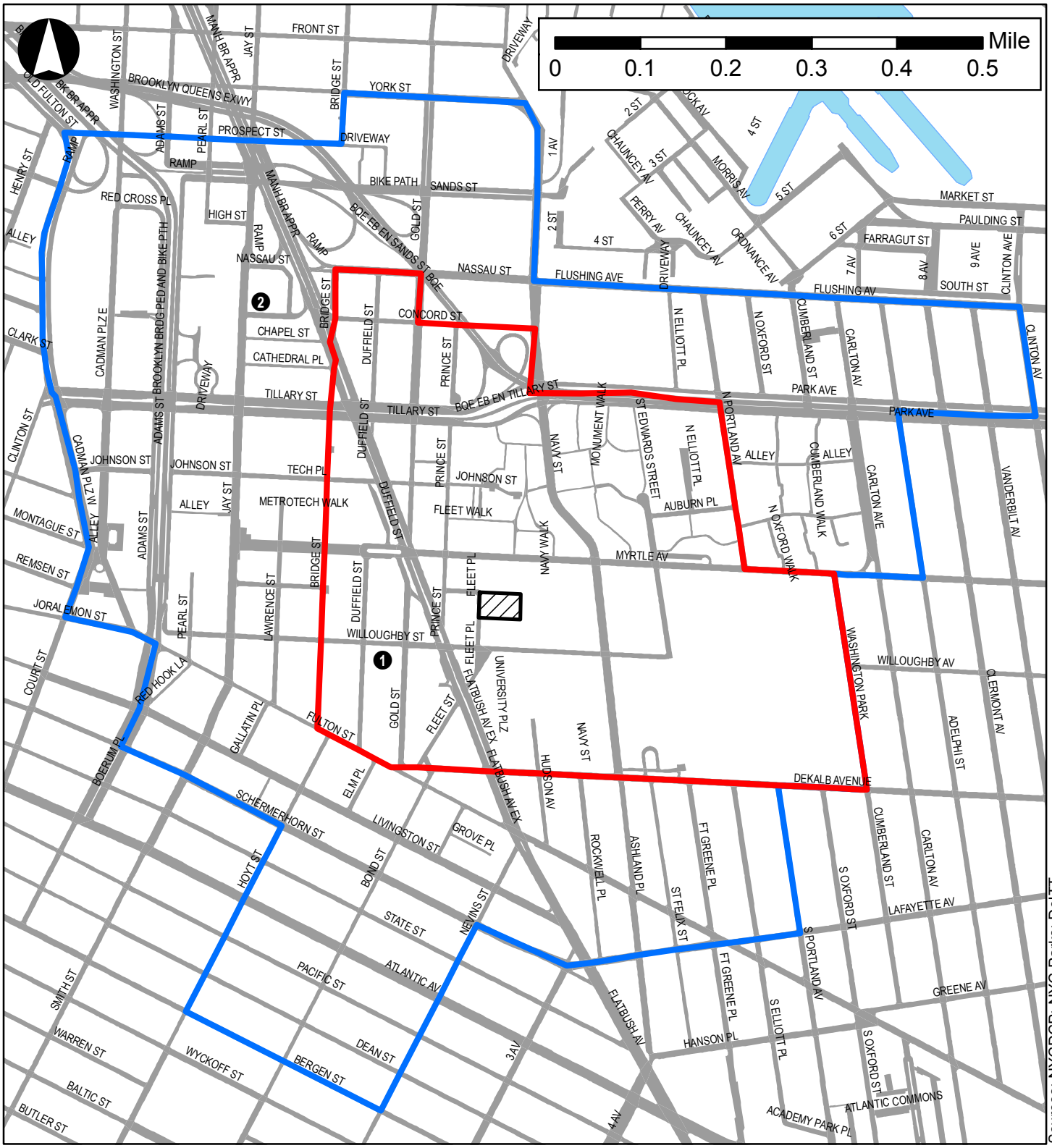
[1] Based on annual compound residential population growth rate of 5.69 percent (2010 Census and 2012-2016 ACS Five-Year Estimates) and non-residential growth rate of 0.36 percent (CTPP 2000 and 2010 data).

[2] Refer to **Table C-2** in **Attachment C, "Land Use, Zoning, and Public Policy"**; only includes No-Action developments within the study areas.

Open Space Resources

NYC Parks has several reconstruction and renovation projects planned within the open space study areas. In Cadman Plaza Park, NYC Parks plans to reconstruct a comfort station; the reconstruction project is currently in the design phase, which began in December 2017. Also in Cadman Plaza Park, NYC Parks plans to renovate the Brooklyn War Memorial building located in the park and retrofit the memorial with a handicap accessible ramp and elevator; while the renovation of the memorial building is currently in the design phase, which began in December 2017, the ramp and elevator construction project is in the procurement phase, which is expected to be completed in May 2018. In Fort Greene Park, NYC Parks plans to reconstruct the oval and lower plazas located within the park, as well as the sidewalks surrounding the park. The project will incorporate pavement, drainage, and handrail reconstruction, as well as the addition of new plantings, water features, lighting, seating, barbecues, and adult fitness equipment; the project is currently in the design phase, which is expected to be completed by May 2018. It is anticipated that these improvement projects will be fully implemented by the 2021 No-Action condition. While these anticipated projects would not add any additional open space acreage to the study areas, they would improve the conditions and usability of study area open space.

In addition, as shown in **Figure F-3**, two new open space resources are expected to be completed by the 2021 No-Action condition, introducing a total of approximately 1.52 acres of open space programmed with passive uses. In the non-residential study area, the commercial development located at 420 Albee Square (Map No. 1) will provide a one-acre open space featuring pedestrian paths, benches, lawns, and landscaping, while the mixed-use commercial/residential development located at 203 Jay Street will provide a 0.52-acre public plaza featuring landscaping and seating in the residential study area.



Sources: NYCDCP; NYC Parks; DoITT

Legend

- Project Area
- Quarter-Mile Non-Residential Study Area
- Half-Mile Residential Study Area
- ❶ Future Open Space Resources

Assessment of Open Space Adequacy

Non-Residential (¼-Mile) Study Area

As noted above, it is anticipated that new development and background growth in the non-residential study area will result in an increase in the population in the future without the proposed actions. As a result of these anticipated No-Action changes, while the ratio of open space per 1,000 workers would decrease to 1.93 (from 2.61 under existing conditions), it will continue to be well above the City's planning guideline ratio of 0.15 acres (see **Table F-6**). Similarly, while the ratio for the combined population of residents and workers would decrease to 0.59 (from 1.13 under existing conditions), it will continue to exceed the calculated No-Action recommended weighted ratio of 0.394.

Table F-6: Adequacy of Open Space Resources: No-Action Condition

	2021 No-Action Population	Open Space Acreage[2]			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (¼-Mile) Study Area										
Workers	10,022	35.99	19.30	16.69	N/A	1.93	N/A	N/A	0.15	N/A
Combined Workers & Residents	32,970				N/A	0.59	N/A	N/A	0.394[1]	N/A
Residential (½-Mile) Study Area										
Residents	64,874	79.90	42.30	37.60	1.23	0.65	0.58	2.50	0.50	2.00
Combined Workers & Residents	157,869				N/A	0.27	N/A	N/A	0.294[1]	N/A

Notes:

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

[2] Reflects additional one acre of planned open space in the non-residential study area and additional 1.52 acres of passive open space in the residential study area.

Residential (½-Mile) Study Area

In the 2021 No-Action condition, the additional population introduced to the residential study area would increase the demand on the area's open space resources (i.e., would reduce the residential open space ratios). As indicated in **Table F-6**, the No-Action total, passive, and active open space ratios per 1,000 residents are expected to decrease to 1.23, 0.65, and 0.58, respectively, from 2.88, 1.50, and 1.38, respectively, under existing conditions. As such, the residential study area total and active open space ratios would be less than the City's community district median and the City's optimal planning guidelines for total and active open space ratios, while the passive open space ratio would remain greater than the City's optimal passive open space ratio guideline. The combined passive open space ratio in the ½-mile residential study area is also expected to decrease in the 2021 No-Action condition, to 0.27 acres per 1,000 combined residents and workers, which would be slightly less than the calculated recommended weighted ratio of 0.294.

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

As discussed in **Attachment A, "Project Description,"** two RWCDS were identified for the proposed actions: the Proposed Project, which would introduce 800 employees over the No-Action condition, and the Alternate Residential Scenario, which would introduce 521 residents over the No-Action condition. While the Proposed Project and Alternate Residential RWCDS would incorporate a small setback area, which would be improved with plantings and, potentially, integrated seating, as the design is still preliminary, it is conservatively not included as additional open space acreage for purposes of the indirect open space impact assessment.

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 or the Alternate Residential RWCDS 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 resource so that it no longer serves the same user population; and would not limit public access to an open space resource. In addition, as presented in **Attachment B, "Supplemental Screening," Attachment G, "Shadows,"** and **Attachment K, "Noise,"** the proposed actions would not result in significant adverse shadow, air quality, noise, or construction impacts on area open space resources.

Indirect Effects Analysis

As noted above, two RWCDS were identified for the proposed actions. As one (the Proposed Project) would exceed the indirect non-residential open space analysis threshold, while the other (the Alternate Residential Scenario) would exceed the indirect residential open space analysis threshold, separate analyses for each RWCDS are provided below.

Study Area Population

Proposed Project

In the 2021 future with the Proposed Project, 800 additional employees would be introduced in the project area. As indicated in **Table F-7**, this additional population is expected to increase the non-residential study area's worker population to 10,822 and the combined worker and residential population to 33,770.

Table F-7: With-Action Non-Residential (1/4-Mile) Open Space Study Area Population - Proposed Project

	No-Action Population	Additional Population in Project Area	2021 With-Action Population
Workers	10,022	800	10,822
Combined Workers & Residents	32,970	800	33,770

Alternate Residential RWCDS

In the 2021 future with the Alternate Residential RWCDS, 521 additional residents would be introduced in the rezoning area, and number of employees in the rezoning area would decrease by 27. As indicated in **Table F-8**, this additional population is expected to increase the ½-mile residential study area's residential population to 65,395, and the ½-mile residential study area's combined worker and residential population is expected to increase to 158,363.

Table F-8: With-Action Residential (Half-Mile) Open Space Study Area Population - Alternate Residential Scenario

	No-Action Population	Additional Population in Rezoning Area	2021 With-Action Population
Residents	64,874	521	65,395
Combined Workers & Residents	157,869	494	158,363

Assessment of Open Space Adequacy

Proposed Project: Non-Residential (¼-Mile) Study Area

Quantitative Assessment

As presented in **Table F-9**, in the future with the Proposed Project, while the ratio of passive open space per 1,000 workers would decrease to 1.78 (from 1.93 under No-Action conditions), it would continue to be well above the City's guideline ratio of 0.15 acres. Similarly, the passive open space ratio for the combined population of residents and workers would decrease to 0.57 (from 0.59 under No-Action conditions) and would continue to exceed the calculated With-Action recommended weighted ratio of 0.388.

Table F-9: Adequacy of Non-Residential Study Area Open Space Resources: With-Action Condition – Proposed Project

	2021 With-Action Population	Open Space Acreage			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Workers	10,822	35.99	19.30	16.69	N/A	1.78	N/A	N/A	0.15	N/A
Combined Workers & Residents	33,770				N/A	0.57	N/A	N/A	0.388[1]	N/A

Notes:

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

Qualitative Assessment

In the future with the Proposed Project, the worker and combined residential/worker passive open space ratios in the non-residential study area would remain well above the City's planning guideline and recommended weighted ratios of 0.15 acres and 0.388 acres, respectively. Moreover, a majority of the

non-residential study area open spaces are in good condition and use levels are characterized by low to moderate utilization.

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

Alternate Residential RWCDS: Residential (½-Mile) Study Area

Quantitative Assessment

Under the With-Action condition for the Alternate Residential Scenario, the total open space ratio in the residential study area would decrease to 1.22 acres per 1,000 residents, from 1.23 acres per 1,000 residents under No-action conditions, and would remain below the City's guideline ratio of 2.5 acres per 1,000 residents (see **Table F-10**). The active open space ratio would remain at 0.58 acres per 1,000 residents, unchanged from No-Action conditions, and would continue to be below the City's guidance ratio of 2.0 acres per 1,000 residents. The passive open space ratio would remain at 0.65 acres per 1,000 residents, unchanged from No-Action conditions, and would continue to be above the City's guideline ratio of 0.50 acres per 1,000 residents. The passive open space ratio for the combined residential and worker population would also remain unchanged from No-Action conditions, at 0.27 acres per 1,000 users, and would remain slightly below the calculated guidance ratio of 0.295.

Table F-10: Adequacy of Residential Study Area Open Space Resources: With-Action Condition – Alternate Residential RWCDS

	2021 With-Action Population	Open Space Acreage			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Optimal Planning Goal		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Residents	65,395	79.90	42.30	37.60	1.22	0.65	0.58	2.50	0.50	2.00
Combined Workers & Residents	158,363				N/A	0.27	N/A	N/A	0.295[1]	N/A

Notes:

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

Qualitative Assessment

In the future with the Alternate Residential RWCDS, while the residential study area total and active open space ratios would remain less than the City's 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. A majority of the study area open space resources included in the quantitative analysis were found to be in good or excellent condition. In addition, a wide variety of passive and active options are available, ranging from sitting areas and walking paths to playgrounds, fitness equipment, basketball and handball courts, and ball fields.

Determining Impact Significance

A significant adverse open space impact may occur if a proposed action would reduce the open space ratio by more than five percent in areas that are currently below the citywide community district median open space ratio of 1.5 acres per 1,000 residents. In areas that are extremely lacking in open space, a reduction of as little as one percent may be considered significant, depending on the area of the City. Conversely, in areas that are well-served by open space, a greater percentage of change (more than five percent) may be tolerated. These reductions may result in the overburdening of existing facilities or further exacerbating a deficiency in open space. **Tables F-11** and **F-12** display the non-residential and residential study area open space ratio percentage changes from the No-Action to the With-Action conditions under the Proposed Project and the Alternate Residential RWCDS, respectively.

Table F-11: Non-Residential Study Area Open Space Ratios Summary – Proposed Project

Ratio	*CEQR Technical Manual* Open Space Optimal Planning Goal (acres per 1,000)	Open Space Ratios per 1,000			Percent Change (Future No-Action to Future With-Action)
		Existing	No-Action	With-Action	
Passive – Workers	0.15	2.61	1.93	1.78	-7.39

Table F-12: Residential Study Area Open Space Ratios Summary – Alternate Residential RWCDS

Ratio	*CEQR Technical Manual* Open Space Optimal Planning Goal (acres per 1,000)	Open Space Ratios per 1,000			Percent Change (Future No-Action to Future With-Action)
		Existing	No-Action	With-Action	
Total – Residents	2.5	2.88	1.23	1.22	-0.80
Passive – Residents	0.5	1.50	0.65	0.65	-0.80
Active - Residents	2.0	1.38	0.58	0.58	-0.80

Proposed Project: Non-Residential (¼-Mile) Study Area

As presented in **Table F-11**, in the future with the Proposed Project, while the non-residential study area's passive open space ratio would decrease by more than five percent from No-Action conditions (7.39 percent), it would remain well above the City's guideline ratio of 0.15 acres per 1,000 workers, at 1.78 acres per 1,000 workers. Therefore, workers in the ¼-mile study area would continue to be well-served by passive open space resources, and there would be no significant adverse impact on open space in the non-residential study area as a result of the Proposed Project.

Alternate Residential RWCDS: Residential (½-Mile) Study Area

In the future with the Alternate Residential RWCDS, the residential total, passive, and active open space ratios would each decrease by 0.80 percent from the No-Action condition. As the total, passive, and active open space ratios would decrease by less than one percent, no significant adverse impacts would result.

ATTACHMENT G

SHADOWS

I. INTRODUCTION

This attachment assesses the potential for the proposed actions to result in incremental shadows long enough to reach any nearby publicly accessible open spaces or other sunlight-sensitive resources. According to the *City Environmental Quality Review* (CEQR) *Technical Manual*, a shadows assessment is required if a proposed action would result in structures (or additions to existing structures) of 50 feet in height or greater, or those that would be located adjacent to, or across the street from, a sunlight sensitive resource. As discussed in **Attachment A, "Project Description,"** the proposed actions would facilitate a proposal by the applicant to construct a 196-foot-tall building; in addition, an alternate reasonable worst-case development scenario (RWCDS) was identified (the "Alternate Residential RWCDS"), which would comprise a new building rising to a maximum building height of 380 feet. As the proposed actions would facilitate the development of a new building greater than 50 feet in height, a detailed shadows analysis was prepared to determine the potential for the proposed actions to result in significant adverse impacts on sunlight-sensitive resources. For worst-case analysis purposes, the analysis assesses the potential for shadow impacts from the 380-foot-tall Alternate Residential RWCDS.

II. PRINCIPAL CONCLUSIONS

The Alternate Residential RWCDS would result in incremental shadow coverage (i.e. additional, or new, shadow coverage) on portions of three sunlight-sensitive open space resources: Fort Greene Park, the Gold Street and Flatbush Avenue Extension Plaza, and the New York City Housing Authority (NYCHA) Ingersoll Houses open spaces. The extent and duration of the incremental shadows on these open space resources would generally (1) not significantly reduce or completely eliminate direct sunlight exposure on any of the sunlight-sensitive features found within these two open spaces; and (2) would not significantly alter the public's use of the playgrounds or threaten the viability of vegetation or other elements located within the open spaces. Therefore, incremental shadows from the Alternate Residential RWCDS on these sunlight-sensitive resources would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

III. METHODOLOGY

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

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

are considered to be sunlight-sensitive resources[1]:

- *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. Sunlight 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 of an architectural resource are considered in a shadows analysis. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depends on the contrast between light and dark (e.g., deep recesses or voids, such as open galleries, arcades, recessed balconies, deep window reveals, and prominent rustication); elaborate, highly carved ornamentation; stained glass windows; exterior building materials and color that depend on direct sunlight for visual character (e.g., the polychromy [multicolored] features found on Victorian Gothic Revival or Art Deco facades); historic landscapes, such as scenic landmarks, including vegetation recognized as an historic feature of the landscape; and structural features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as an historic landmark.
- *Natural resources where the introduction of shadows could alter the resource's condition or microclimate.* Such resources could include surface water bodies, wetlands, or designated resources, such as coastal fish and wildlife habitats.

The preliminary screening assessment consists of three tiers of analysis. The first tier determines a simple radius around the proposed buildings representing the longest shadow that could be cast. 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 – or the additional, or new, shadow that a building or other built structure resulting from a proposed project would cast on a sunlight-sensitive resource during the year – resulting from the project. Incremental shadows are determined by establishing a baseline condition (the No-Action condition) and comparing it to the future condition resulting from the proposed actions (the With-Action condition), thus illustrating the shadows cast by existing or future buildings and distinguishing the

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

additional (incremental) shadows cast by a proposed project. In accordance with the *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 resources.

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

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

- *Vegetation:* a substantial reduction in sunlight available to sunlight-sensitive features of the resource to less than the minimum time necessary for its survival (when there would be sufficient sunlight in the future without the 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 shadow impact occurs when the incremental shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

IV. PRELIMINARY SCREENING

Tier 1 Screening Assessment

According to the *CEQR Technical Manual*, the longest shadow that a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. As discussed in **Attachment A, "Project Description,"** the proposed actions would facilitate a proposal by the applicant to construct a 196-foot-tall building; in addition, an alternate RWCDS was identified (the "Alternate Residential RWCDS"), which would comprise a new residential building rising to a maximum building height of 380 feet. For worst-case analysis purposes, the analysis assesses the potential for shadow impacts from the 380-foot-tall Alternate Residential RWCDS. For the proposed actions, the maximum height of the 380 feet (including an additional 20 feet of bulkhead) was used to determine the maximum shadow radius of 1,634 feet (Tier 1 Assessment). Within this longest shadow study area, there are 17 potentially sunlight-sensitive open space resources. Therefore, further screening was warranted in order to determine whether any resources could be affected by project-generated shadows at the proposed development site.

Tier 2 Screening Assessment

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

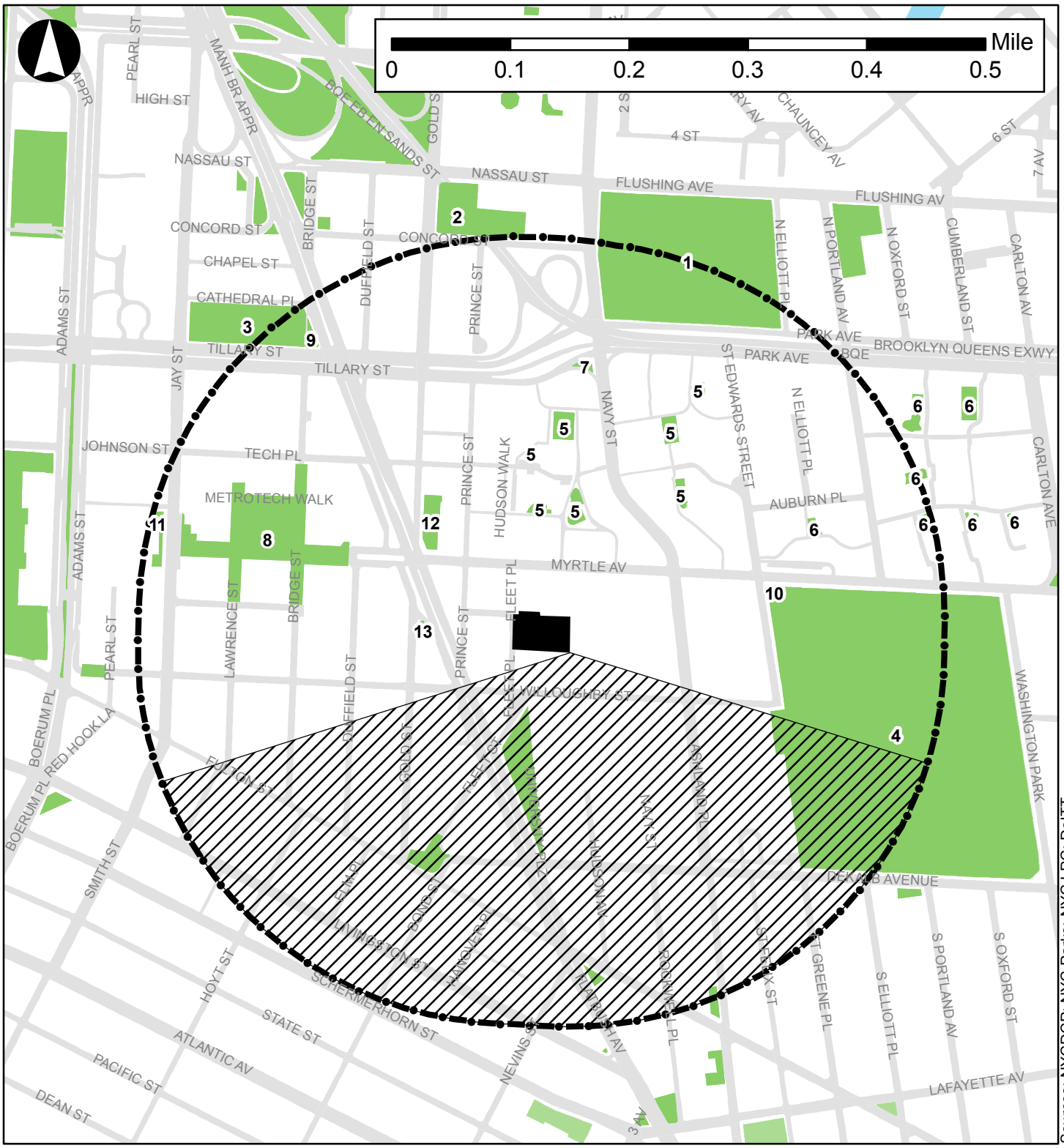
Figure G-1 provides a base map illustrating the results of the Tier 1 and Tier 2 screening assessments (i.e., the portion of the longest shadow study area lying within -108 degrees from the true north and +108 degrees from true north as measured from the southernmost corner of the development site). As a result of the Tier 2 screening assessment, 13 open space resources were identified as sunlight-sensitive resources that warranted further assessment. These resources are listed in **Table G-1**.

Tier 3 Screening Assessment

According to the *CEQR Technical Manual*, a Tier 3 screening assessment should be performed to determine if, in the absence of intervening buildings, shadows resulting from a proposed project can reach a sunlight-sensitive resource, thereby warranting a detailed shadow analysis. The Tier 3 screening assessment is used to determine if shadows resulting from a proposed 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 a number of sunlight-sensitive resources, a Tier 3 assessment was performed using three dimensional (3D) computer mapping software. A 3D model of the Alternate Residential RWCDS 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 Alternate Residential RWCDS. At this stage of the assessment, surrounding buildings within the study area were not included in the model so that it may be determined whether project-generated shadows would reach any sunlight sensitive resources.

Tier I and II Shadows Assessment



Legend

- Project Area
- 1 Open Space Resources
- Tier 1: Longest Shadow Study Area
- Tier 2: Area That Cannot Be Shaded

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

No.[1]	Open Space Resources
1	Commodore Barry Park
2	Golconda Playground
3	McLaughlin Park
4	Fort Greene Park[2]
5	NYCHA – Ingersoll Houses Open Spaces
6	NYCHA – Walt Whitman Houses Open Spaces
7	Arbor Place
8	MetroTech Commons
9	Flatbush Avenue & Tillary Street Greenstreet
10	St. Edwards Street Greenstreet
11	350 Jay Street Plaza
12	Fort Greene Plaza
13	Plaza (Gold Street & Flatbush Avenue)

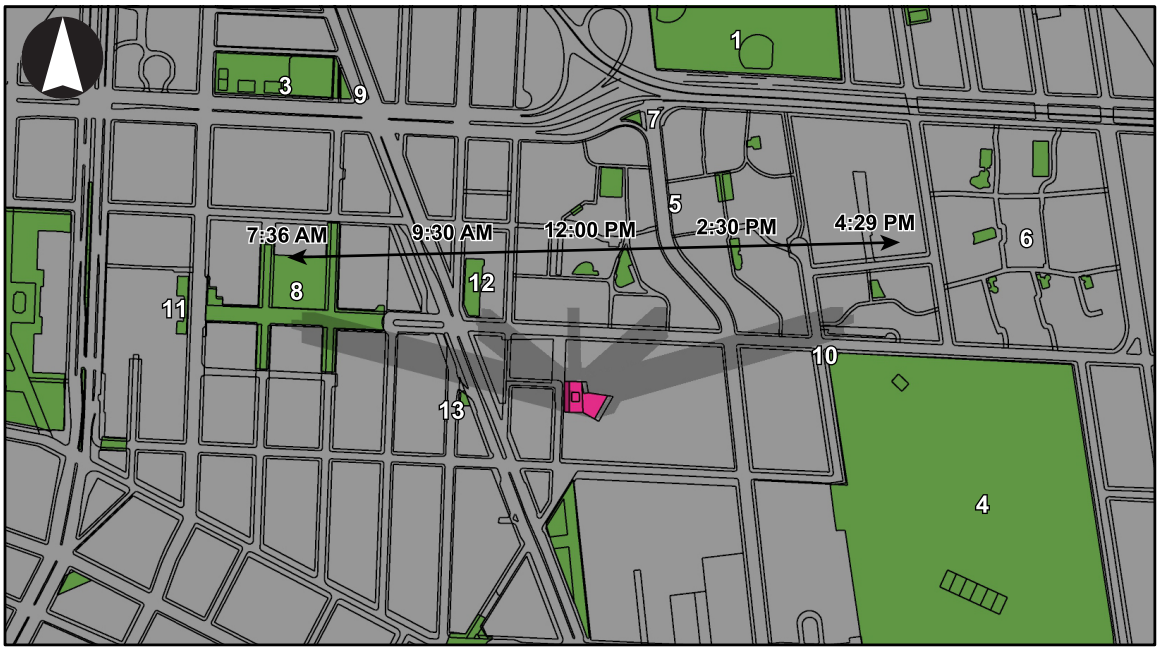
Notes:
[1] Numbers keyed to **Figure G-1.**
[2] Fort Greene Park is included in the Fort Green Historic District designated by the Landmarks Preservation Commission (LPC), and thus, is also considered a historic resource.

As shown in **Figures G-2a** and **G-2b**, the Tier 3 results determined that six sunlight-sensitive open space resources would receive project-generated shadows on at least one of the four analysis days and, therefore, require further analysis. **Table G-2** presents a summary of the Tier 3 assessment, showing the six sunlight-sensitive open space resources that could, in the absence of intervening buildings, receive project-generated shadows in the future with the Alternate Residential RWCDS, and on which analysis days the new shadows could occur. As presented in **Table G-2**, based on the Tier 3 screening assessment, the potential for new incremental shadows to be cast on McLaughlin Park, Fort Greene Park, the NYCHA Ingersoll Houses open spaces, MetroTech Commons, Fort Greene Plaza, and the Gold Street and Flatbush Avenue Extension Plaza on at least one of the four analysis days could not be ruled out, and a detailed shadows analysis is warranted for these sunlight-sensitive resources.

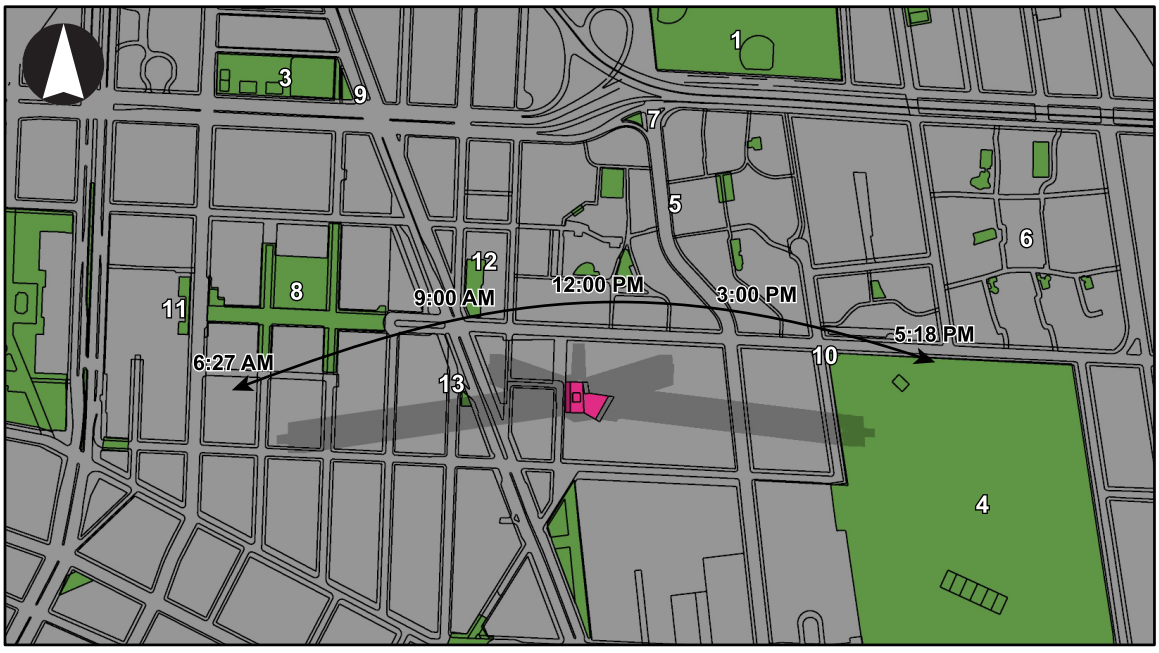
V. DETAILED ANALYSIS OF SHADOW IMPACTS

Per *CEQR Technical Manual* guidelines, a shadow analysis was performed for the nine sunlight-sensitive open space 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 shadows over the course of the year. As noted previously, *CEQR Technical Manual* guidelines define the temporal limits of a shadow analysis period to fall from 1.5 hours after sunrise to 1.5 hours before sunset. The results of the shadows analysis show the incremental difference in shadow impact between the No-Action and Alternate Residential RWCDS With-Action conditions, the results of which are summarized in **Table G-3**.

As shown in **Table G-3**, in the future with the Alternate Residential RWCDS incremental project-generated shadows would reach six of the sunlight-sensitive open space resources identified in the Tier 3 assessment. Increases in shadow coverage would occur at Fort Greene Park, Fort Greene Plaza, and the Gold Street and Flatbush Avenue Extension Plaza on two of the four representative analysis days, at MretroTech Commons on the March 21/September 21 representative analysis day, and at McLaughlin Park and the NYCHA Ingersoll Houses open spaces on the December 21 representative analysis day**.**



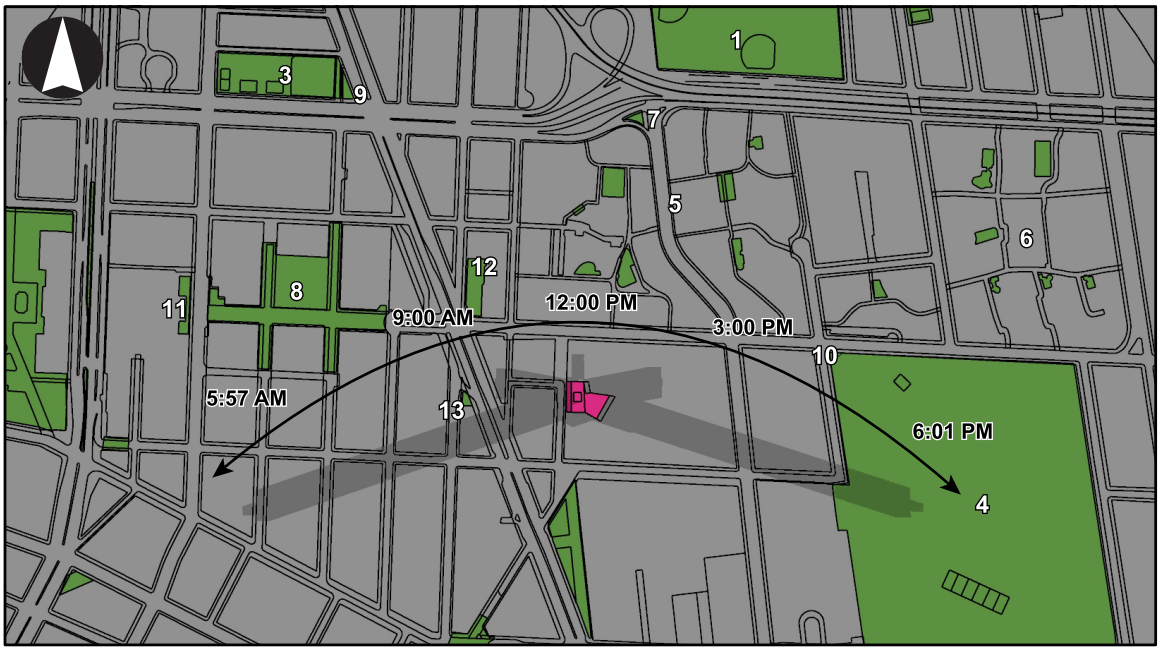
MARCH 21/SEPTEMBER 21



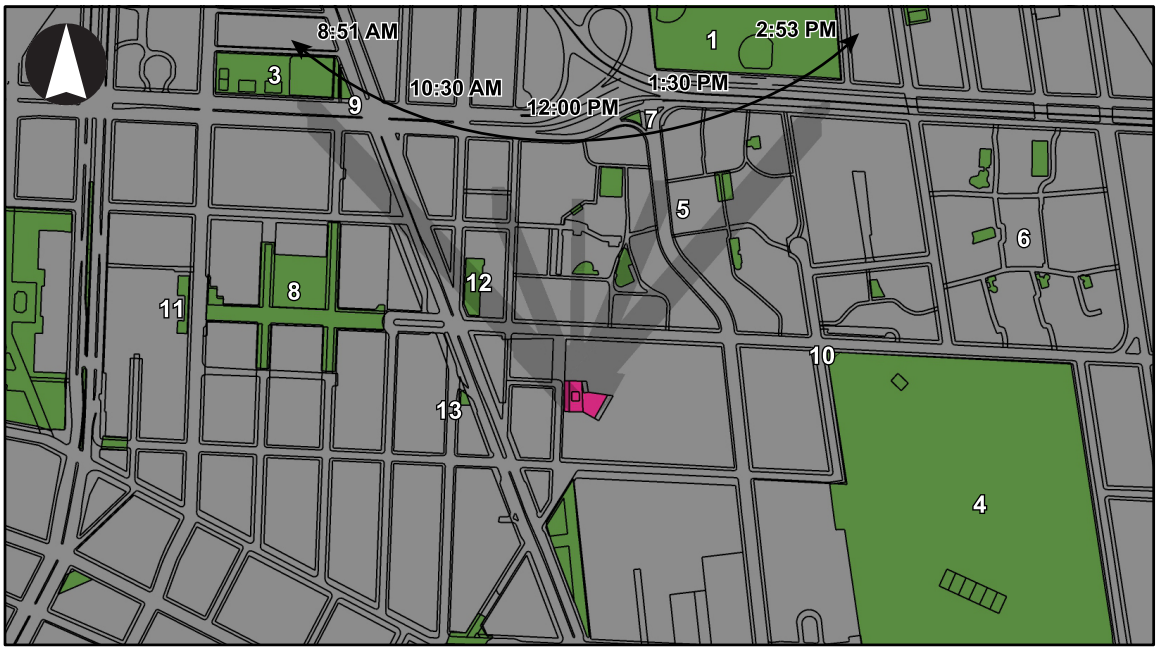
MAY 6/AUGUST 6

Alternate Residential RWCDS 1 **Open Space** **Incremental Shadow**

Note: Resources keyed to Table G-1



JUNE 21



DECEMBER 21

Alternate Residential RWCDS **1 Open Space** **Incremental Shadow**

Note: Resources keyed to Table G-1

Figures G-3 through **G-7** (all provided at the end of this chapter) show representative shadow views at each of the sunlight-sensitive resources on each of the representative analysis days on which incremental shadows would occur (refer to **Table G-3**).

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

No.[1]	Name	March 21/ Sept. 21 7:36 AM - 4:29 PM	May 6/August 6 6:27 AM - 5:18 PM	June 21 5:57 AM - 6:01 PM	December 21 8:51 AM - 2:53 PM	Number of Analysis Days
1	Commodore Barry Park	NO	NO	NO	NO	0
2	Golconda Playground	NO	NO	NO	NO	0
3	McLaughlin Park	NO	NO	NO	**YES**	**1**
4	Fort Greene Park	NO	**YES**	**YES**	NO	**2**
5	NYCHA – Ingersoll Houses Open Spaces	NO	NO	NO	**YES**	**1**
6	NYCHA – Walt Whitman Houses Open Spaces	NO	NO	NO	NO	0
7	Arbor Place	NO	NO	NO	NO	0
8	MetroTech Commons	**YES**	NO	NO	NO	**1**
9	Flatbush Avenue & Tillary Street Greenstreet	NO	NO	NO	NO	0
10	St. Edwards Street Greenstreet	NO	NO	NO	NO	0
11	350 Jay Street Plaza	NO	NO	NO	NO	0
12	Fort Greene Plaza	**YES**	NO	NO	**YES**	**2**
13	Gold Street & Flatbush Avenue Ext. Plaza	NO	**YES**	**YES**	NO	**2**

Notes:

[1]Numbers keyed to **Figure G-1.**

Table G-3: Duration of Alternate Residential RWCDS Shadows on Sunlight Sensitive Resources (Increment Compared to No-Action)

Resource	Analysis Day	March 21/Sept. 21 7:36 AM – 4:29 PM	May 6/August 6 6:27 AM – 5:18 PM	June 21 5:57 AM – 6:01 PM	December 21 8:51 AM – 2:53 PM
McLaughlin Park	Shadow enter-exit time				-
	Incremental shadow duration				-
Fort Greene Park	Shadow enter-exit time		-	5:41 – 6:01 PM	
	Incremental shadow duration		-	20 minutes	
NYCHA – Ingersoll Houses Open Spaces	Shadow enter-exit time				12:00 – 12:21 PM 12:49 – 1:31 PM
	Incremental shadow duration				21 minutes 42 minutes
Metrotech Commons	Shadow enter-exit time	-			
	Incremental shadow duration	-			
Fort Greene Plaza	Shadow enter-exit time	-			-
	Incremental shadow duration	-			-
Gold St. & Flatbush Ave. Ext. Plaza	Shadow enter-exit time		7:00 – 8:02 AM	7:44 – 8:22 AM	
	Incremental shadow duration		1 hour 2 minutes	38 minutes	

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

It should be noted that, per the *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 attachment for March 21/September 21, May 6/August 6, and June 21 need to have one hour added to reflect the Eastern Daylight Saving Time.

Resources Affected by Alternate Residential RWCDS-Generated Shadows

March 21/September 21

On March 21/September 21, the time period for shadows analysis begins at 7:36 AM and continues until 4:29 PM. March is considered the beginning of the growing season in New York City, and September 21, which has the same shadow patterns as March 21, is also within the growing season. On the March 21/September 21 analysis day, the Alternate Residential RWCDS's incremental shadows would not reach any portions of the sunlight-sensitive open space resources identified in the Tier 3 assessment above (i.e., MetroTech Commons and Fort Greene Plaza). As such, no sunlight-sensitive resources would experience incremental shadow coverage on this analysis day.

May 6/August 6

On May 6/August 6 (the midpoint between the equinoxes and solstices), the time period for shadows analysis begins at 6:27 AM and continues until 5:18 PM. On this analysis day, incremental shadows from the Alternate Residential RWCDS would reach portions of the Gold Street and Flatbush Avenue Extension Plaza. No other sunlight-sensitive resource would experience incremental shadow coverage on this analysis day.

Gold Street & Flatbush Avenue Extension Plaza

The 0.08-acre plaza located west of the development site is roughly bounded by Gold Street to the west, Flatbush Avenue Extension to the east, and Willoughby Street to the south, and occupies Block 2060, Lot 8. The plaza is owned and operated by the New York City Department of Housing Preservation and Development (HPD), and features plantings, bench seating, and trees. The plaza is open to the public 24-hours a day, seven days a week.

The Alternate Residential RWCDS would cast incremental shadows on portions of the plaza for a total duration of one hour and two minutes on the May 6/August 6 analysis day. Incremental shadows cast by the Alternate Residential RWCDS would enter the plaza at 7:00 AM and would continue until exiting the plaza at 8:02 AM. Prior to 7:00 AM and after 8:02 AM the plaza would not experience any incremental shadow coverage. As indicated in **Figure G-3a**, during the early morning hours incremental shadows would be limited to a small southern portion of the plaza's open space area. By 7:45 AM, incremental shadow coverage would increase slightly, moving in a northerly direction until exiting the plaza (see **Figure G-3b**). It should be noted that incremental shadows would result in a complete loss of sunlight between 7:00 and 7:39 AM for a total duration of 39 minutes. However, incremental shadow coverage would be minimal and the majority of the plaza would continue to receive direct sunlight throughout the day.

The areas of the Gold Street and Flatbush Avenue Extension Plaza that would experience incremental shadow coverage feature plantings, bench seating, and trees.

June 21

On June 21 (the summer solstice), the time period for shadows analysis begins at 5:57 AM and continues until 6:01 PM. On the summer solstice, which is the day of the year with the longest period of daylight, the sun is most directly overhead and generally shadows are shortest and move across the widest angular range from west to east. On this date, incremental shadows from the Alternate Residential RWCDS would be cast on portions of Fort Greene Park and the Gold Street and Flatbush Avenue Extension Plaza. No other sunlight-sensitive resource would experience incremental shadow coverage on this analysis day.

Fort Greene Park

Fort Greene Park, a 30.17-acre open space located east of the development site, was designed by Frederick Law Olmsted and Calvert Vaux in 1867 (originally Washington Park), making it the first designated public park in Brooklyn. The park is also included in the Fort Greene Historic District, which was designated by the New York City Landmarks Preservation Commission (LPC) in 1978. The park is bounded by Myrtle Avenue to the north, DeKalb Avenue to the south, Washington Park to the east, and St. Edwards Street to the west, occupying Brooklyn Block 2088, Lot 1. Fort Greene Park is owned and operated by New York City's Department of Parks and Recreation (NYC Parks), and features tennis courts, basketball courts, playgrounds, spray showers, a dog park, the Prison Ship Martyrs Monument, a nature center, barbecue and picnic areas, walking and recreational paths, bench seating, and a variety of landscaped and forested areas. The park's operating hours are from 6 AM to 1 AM.

The Alternate Residential RWCDS would cast incremental shadows on portions of the Fort Greene Park for a total duration of 20 minutes on the June 21 analysis day. Incremental shadows cast by the Alternate Residential RWCDS would enter the open space and historic resource at 5:41 PM and continue until the end of the analysis day (6:01 PM). Prior to 5:41 PM the park would not experience any incremental shadow coverage. As indicated in **Figure G-4a**, during the late afternoon hours incremental shadows would be limited to a small western portion of the park's open space area. By 6:00 PM, incremental shadow coverage would increase, moving in a southeasterly direction throughout the afternoon until the end of the analysis day. Incremental shadow coverage would be minimal and the majority of the park area would continue to receive direct sunlight.

The areas of Fort Greene Park that would experience incremental shadow coverage feature playgrounds, spray showers, barbecue and picnic areas, paved walking and recreational paths, bench seating, and portions of landscaped and forested areas.

Gold Street & Flatbush Avenue Extension Plaza

The Alternate Residential RWCDS would cast incremental shadows on portions of the Gold Street and Flatbush Avenue Extension Plaza for a total duration of 38 minutes on the June 21 analysis day. Incremental shadows cast by the Alternate Residential RWCDS would enter the plaza at 7:44 AM and would continue until exiting the plaza at 8:22 AM. Prior to 7:44 AM and after 8:22 AM the plaza would not experience any incremental shadow coverage. As indicated in **Figure G-3c**, during the early morning hours incremental shadows would be limited to a small southern portion of the plaza's open space area. By 8:15 AM, incremental shadow coverage would decrease slightly, moving in a northeasterly direction until exiting the plaza. It should be noted that incremental shadows would result in a complete loss of sunlight between 7:44 and 8:07 AM for a total duration of 23 minutes. However, incremental shadow coverage would be minimal and the majority of the plaza would continue to receive direct sunlight throughout the

day.

The areas of the Gold Street and Flatbush Avenue Extension Plaza that would experience incremental shadow coverage feature plantings, bench seating, and trees.

December 21

On the winter solstice (December 21), the day of the year with the shortest period of daylight, the sun is low in the sky and shadows are at their longest but move rapidly. On this date incremental shadows would be cast by the Alternate Residential RWCDS on portions of two playgrounds that are part of the NYCHA Ingersoll Houses open spaces. No other sunlight-sensitive resource would experience incremental shadow coverage on this analysis day.

NYCHA Ingersoll Houses Open Spaces

The NYCHA Ingersoll Houses contain approximately 0.92 acres of public open space. The NYCHA Ingersoll Houses campus is roughly bounded by Park Avenue/Tillary Street to the north, Myrtle Avenue to the south, St. Edwards Street to the east, and Prince Street to the west, occupying Brooklyn Block 2034, Lot 1 and Block 2050, Lot 1. Several open space areas are scattered throughout the campus, and their features include playgrounds (i.e., jungle gyms, swings, slides, monkey bars), basketball courts, bench seating, and tree plantings. The open spaces' operating hours are from 6 AM to dusk.

The Alternate Residential RWCDS would cast incremental shadows on portions of two open space areas located within the NYCHA Ingersoll Houses campus for a total combined duration of one hour and three minutes on the December 21 analysis day. Initially, incremental shadows would enter a playground area located in the southwestern section of the NYCHA campus (see **Figure G-5a**) beginning at 12:00 PM and continuing until 12:21 PM, for a duration of 21 minutes. From 12:06 to 12:21 PM (15 minutes) incremental shadows would result in a complete loss of sunlight at this open space. At 12:49 PM, incremental shadows would enter a second playground area to the east and continue until 1:31 PM for a duration of 41 minutes (see **Figures G-5a** and **G-5b**). From 1:07 to 1:23 PM (16 minutes) incremental shadows would result in a complete loss of sunlight at this open space. As indicated by **Figures G-5a** and **G-5b**, incremental shadows would be limited in size and duration and would move quickly in an easterly direction in the afternoon until exiting all open space areas by 1:31 PM. Prior to 12:00 PM, between 12:21 PM and 12:49 PM, and following 1:31 PM, the open spaces located at the NYCHA Ingersoll Houses campus collectively would not experience any incremental shadow coverage.

The areas of the NYCHA Ingersoll Houses open spaces experiencing shadow coverage feature playgrounds, bench seating, and tree plantings.

Assessment

Fort Greene Park

The Alternate Residential RWCDS would cast incremental shadows on portions of Fort Greene Park on one of the four representative analysis days. Incremental shadow duration would be minimal, with incremental shadows lasting approximately 20 minutes on the June 21 representative analysis day. Shadow coverage would generally be limited to a small western portion of the park and would not be cast on a single part of the park for an extended period of time, allowing Fort Greene Park's sunlight-sensitive

open space and historic resources to receive adequate direct sunlight throughout the day (see **Figure G-4a**).

Incremental shadows would affect both active recreational uses, such as playgrounds and paved recreational paths, and passive recreation uses, such as bench seating and landscaped lawns. As shadows are not static and move from west to east throughout the day, the park's sunlight-sensitive features would continue to receive direct sunlight on these two representative analysis days (see **Figure G-4a**). At no point during any of the representative analysis days would an incremental shadow result in the complete loss of sunlight on the park. Additionally, incremental shadows on active recreational uses, such as the playgrounds and recreational paths, during the months surrounding the summer solstice when temperatures are warmer would not significantly affect the usability of the open space. Furthermore, the open space would continue to receive adequate sunlight during the growing season (at least the four- to six-hour minimum specified in the *CEQR Technical Manual*), and vegetation in the park would not be significantly affected. Therefore, as the extent and duration of the incremental shadows would (1) not significantly reduce or completely eliminate direct sunlight exposure on any of the sunlight-sensitive resources found within this open space and (2) would not significantly alter the public's use of the playground or threaten the viability of vegetation or other resources, incremental shadows from the Alternate Residential RWCDS on Fort Greene Park would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

Gold Street & Flatbush Avenue Extension Plaza

The Alternate Residential RWCDS would cast incremental shadows on portions of the Gold Street and Flatbush Avenue Extension Plaza on two of the four representative analysis days. Incremental shadow duration would be minimal, and would last for a duration of 38 minutes on the June 21 representative analysis day and one hour and two minutes on the May 6/August 6 representative analysis day. Shadow coverage would be limited to the southern portions of the plaza and would not be cast on a single part of the open space for an extended period of time, allowing the plaza's sunlight-sensitive features to receive adequate direct sunlight throughout the day (see **Figures G-3a** through G-**3c**).

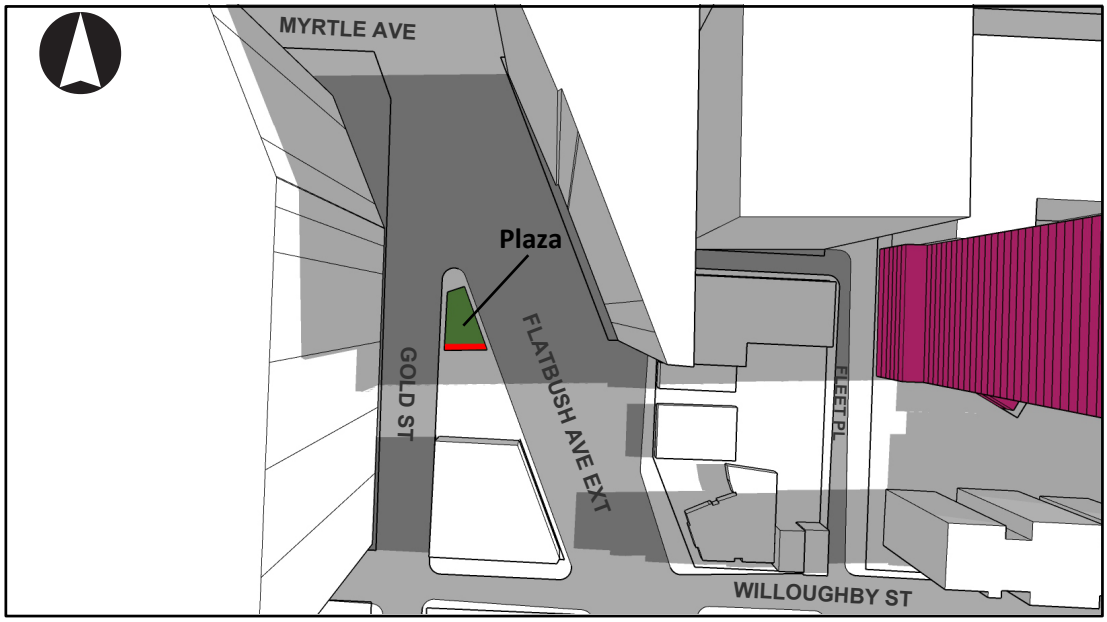
Incremental shadows would affect the plaza's passive recreational uses, including bench seating. As shadows are not static and move from west to east throughout the day, the plaza's sunlight-sensitive features would continue to receive direct sunlight on these two representative analysis days (see **Figures G-3a** through **G-3c**). Though incremental shadows would result in the complete loss of sunlight on the plaza on both the May 6/August 6 and June 21 representative analysis days for a duration of 39 and 23 minutes, respectively, incremental shadow coverage would generally be minimal and the majority of the plaza would continue to receive direct sunlight throughout each analysis day. Furthermore, the open space would continue to receive adequate sunlight during the growing season (at least the four- to six-hour minimum specified in the *CEQR Technical Manual*) and vegetation in the plaza would not be significantly affected. Therefore, as the extent and duration of the incremental shadows would (1) not significantly reduce or completely eliminate direct sunlight exposure on any of the sunlight-sensitive resources found within this open space and (2) would not significantly alter the public's use of the plaza or threaten the viability of vegetation or other resources, incremental shadows from the Alternate Residential RWCDS on the Gold Street and Flatbush Avenue Extension Plaza would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

NYCHA Ingersoll Houses Open Spaces

The Alternate Residential RWCDS would cast incremental shadows on portions of two open spaces located on the NYCHA Ingersoll Houses campus on one of the four representative analysis days. Though incremental shadow duration would last for a total of one hour and three minutes on December 21, each individual open space would not experience an incremental shadow duration for an extended period of time, as shadow durations would range from 21 minutes to 42 minutes. Shadow coverage would generally occur in the late afternoon hours for a limited period of time and would not be cast on a single part of the park for an extended period of time, allowing the NYHCA campus' sunlight-sensitive open space to receive adequate direct sunlight throughout the day (see **Figures G-5a** and **5b**).

Incremental shadows would affect both active recreational uses, including playgrounds, as well as passive recreation uses, including bench seating. As shadows are not static and move from west to east throughout the day, the open spaces sunlight-sensitive features would continue to receive direct sunlight on the December 21 representative analysis day (see **Figures G-5a** and **G-5b**). Incremental shadows would result in the complete loss of sunlight on the two affected open spaces located on the Ingersoll Houses campus. However, incremental shadow durations resulting in a complete loss of sunlight on the open spaces would be minimal, ranging from 15 minutes to 16 minutes. Additionally, as the December 21 analysis day falls outside the plant growing season defined by the *CEQR Technical Manual*, vegetation would not be affected. Therefore, as the extent and duration of the incremental shadows would not significantly alter the public's use of the open space or threaten the viability of vegetation or other resources, incremental shadows from the Alternate Residential RWCDS on the NYCHA Ingersoll Houses open spaces would not be considered a significant adverse impact, in accordance with *CEQR Technical Manual* methodology.

Gold Street & Flatbush Avenue Ext. Plaza
Incremental Shadows on May 6/August 6



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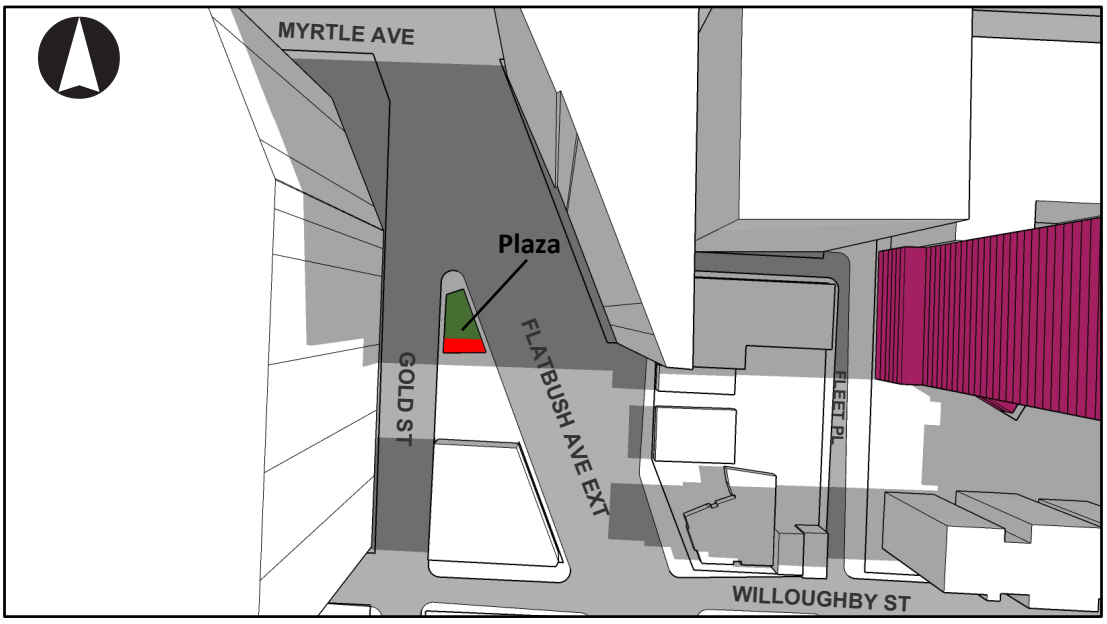
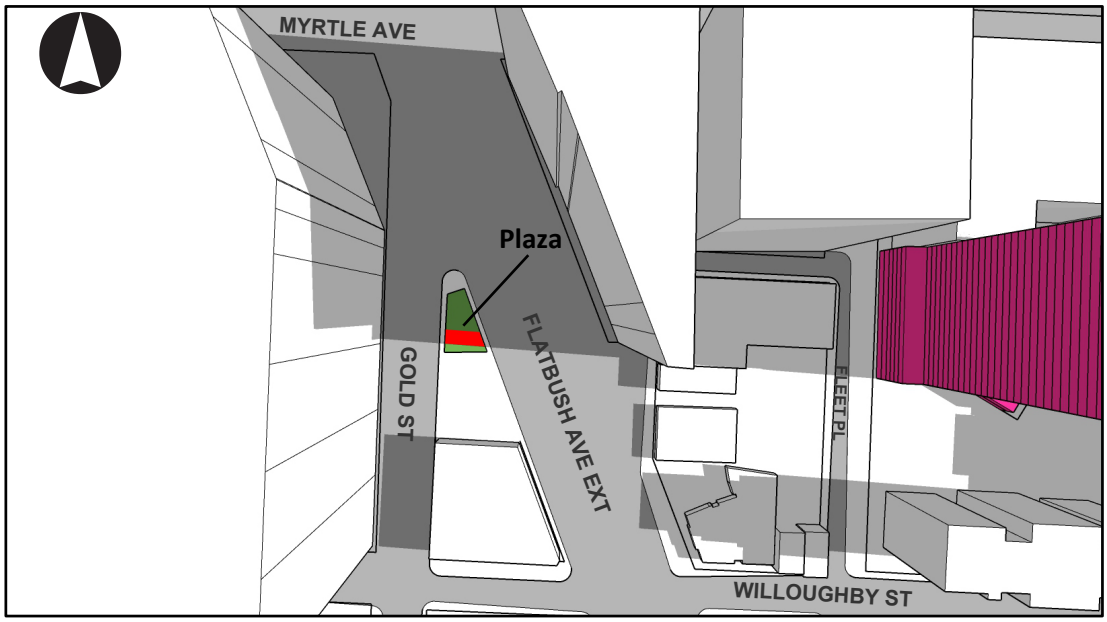


7:30 AM

Alternate Residential RWCDS **Open Space** **Incremental Shadow**

Gold Street & Flatbush Avenue Ext. Plaza
Incremental Shadows on May 6/August 6



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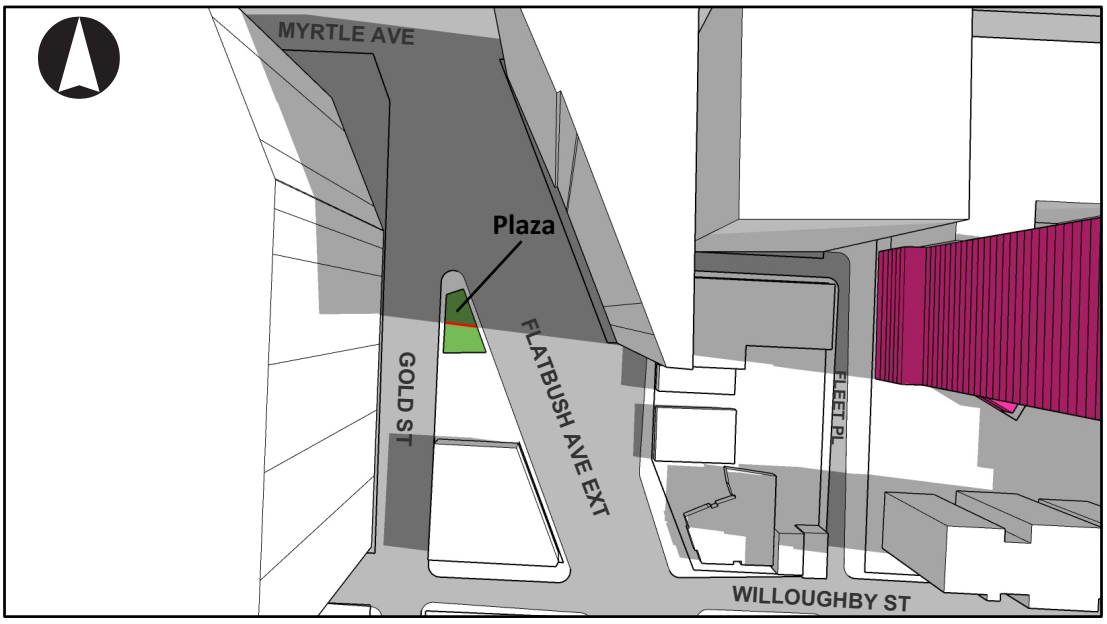
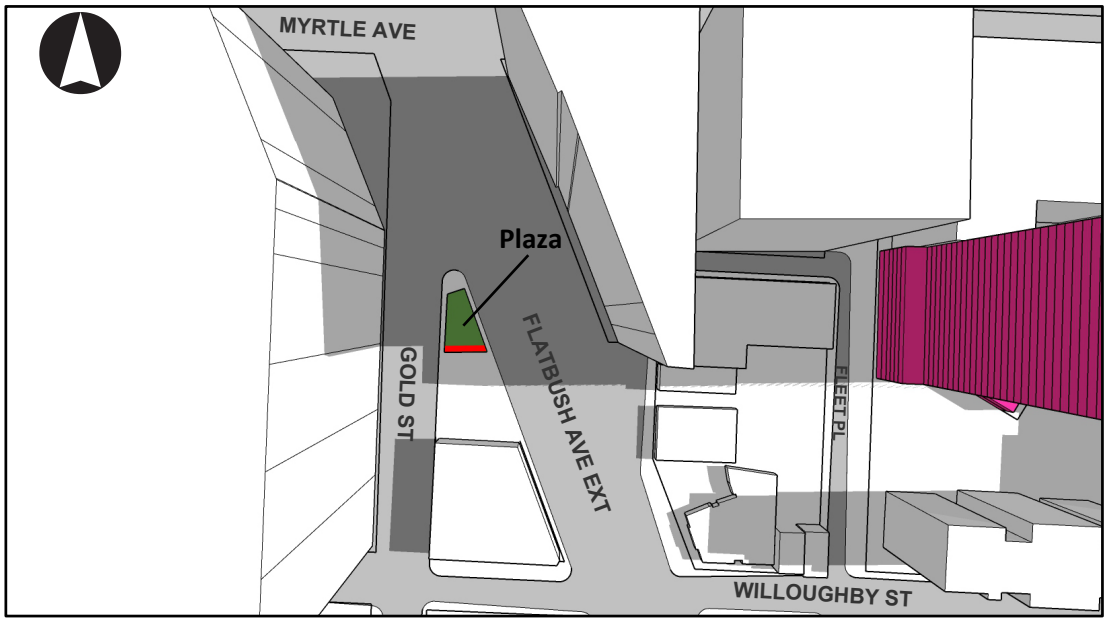


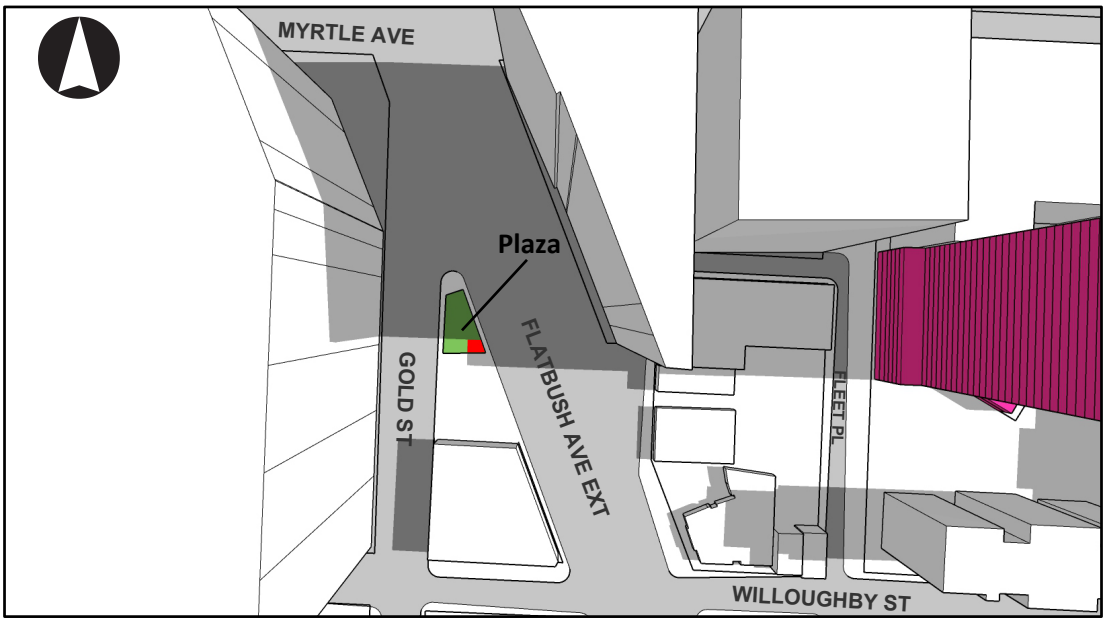
8:00 AM

Alternate Residential RWCDS **Open Space** **Incremental Shadow**

Figure G-3c
Gold Street & Flatbush Avenue Ext. Plaza
Incremental Shadows on June 21



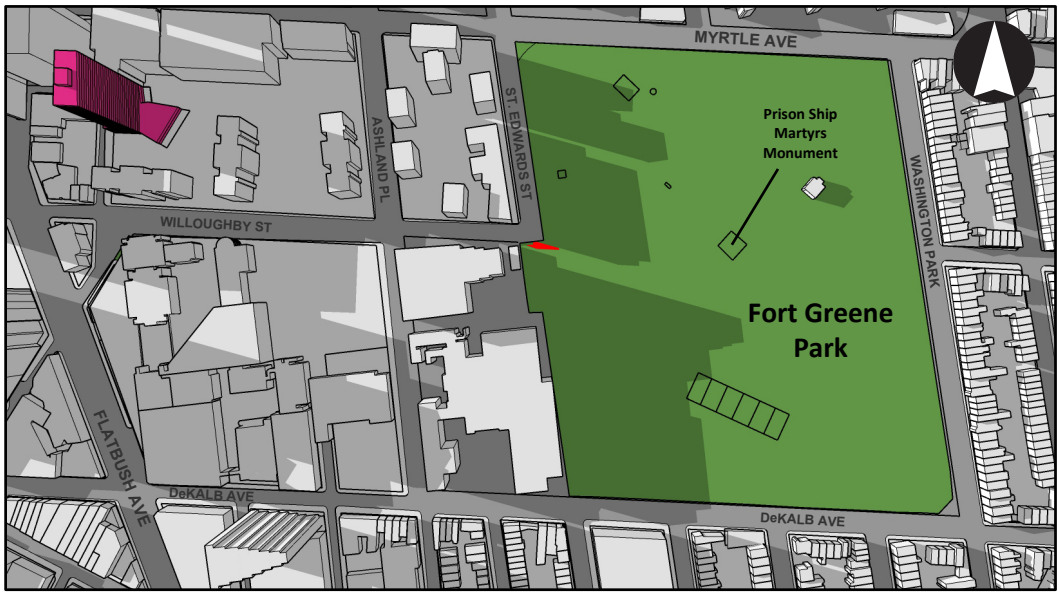
8:00 AM



8:15 AM

Alternate Residential RWCDS **Open Space** **Incremental Shadow**

Fort Greene Park
Incremental Shadows on June 21



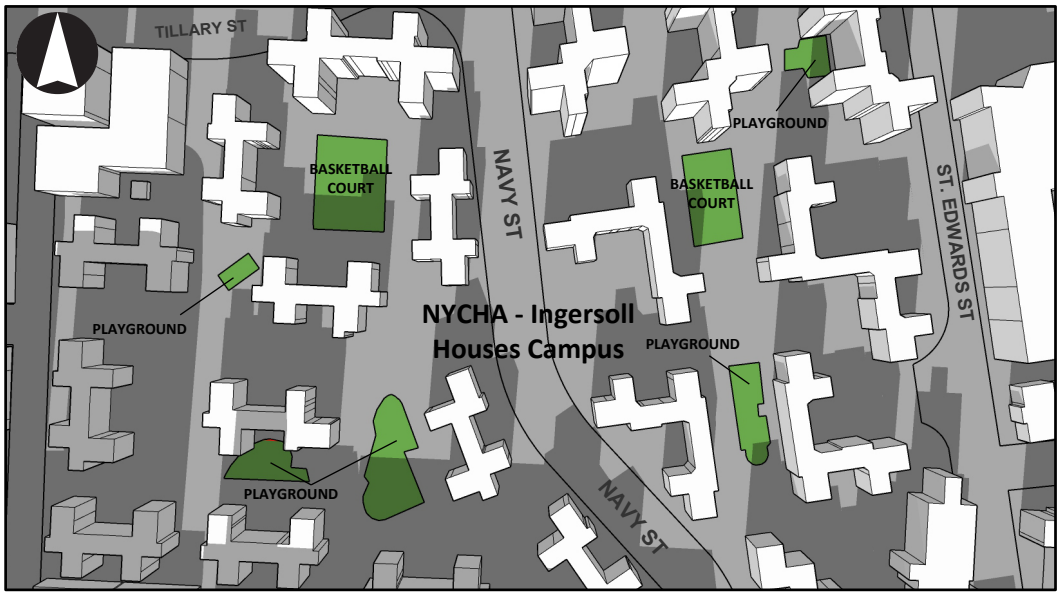
5:45 PM



6:00 PM

Alternate Residential RWCDS **Open Space** **Incremental Shadow**

Figure G-5a
NYCHA Ingersoll Houses Open Spaces
Incremental Shadows on December 21



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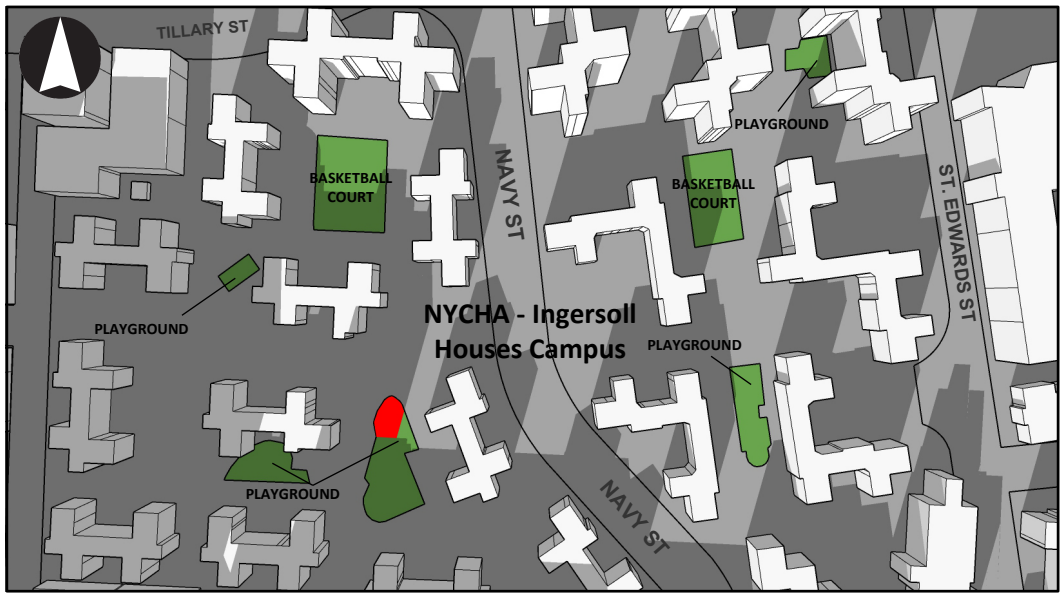

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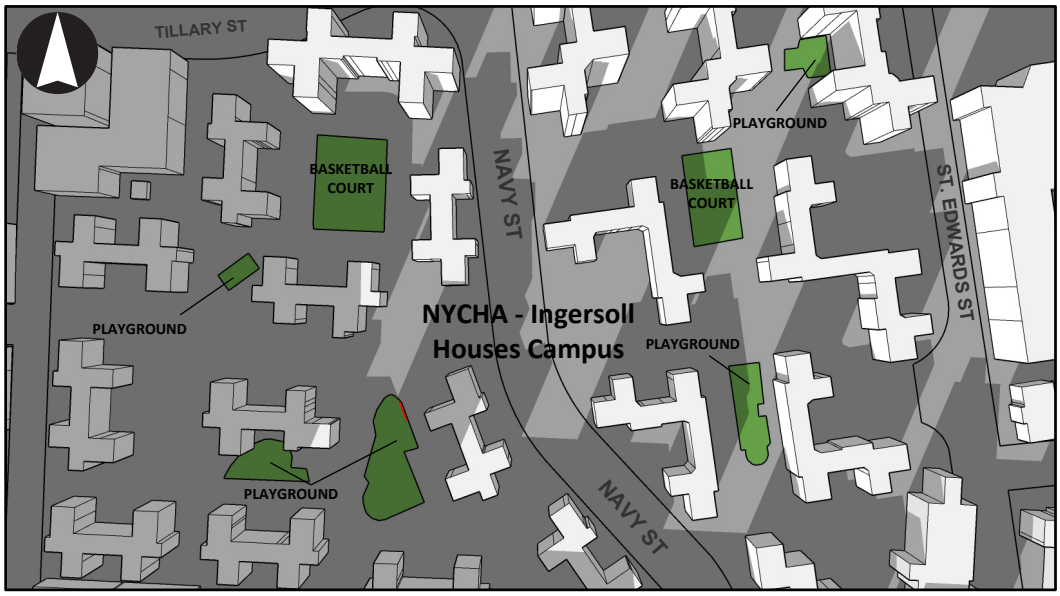
Alternate Residential RWCDS **Open Space** **Incremental Shadow**

NYCHA Ingersoll Houses Open Spaces
Incremental Shadows on December 21



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Alternate Residential RWCDS **Open Space** **Incremental Shadow**

ATTACHMENT H

URBAN DESIGN AND VISUAL RESOURCES

I. INTRODUCTION

The 2014 *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: (i) a zoning map amendment to rezone a portion of Brooklyn Block 2061 (the "rezoning area") from an R6 district to a C6-4 district; and (ii) a zoning text amendment to Appendix F of the *Zoning Resolution of the City of New York* (ZR) to designate the rezoning area as a Mandatory Inclusionary Housing (MIH) Area and to ZR Article X, Chapter 1, Appendix E to update the boundary maps of the Special DB District to include the entirety of the rezoning area. The proposed actions would result in a development that would differ from what is permitted as-of-right, and, as such, an analysis of urban design and visual resources is appropriate.

As discussed in **Attachment A, "Project Description,"** the applicant is proposing to redevelop the development site (101 Fleet Place) with a 14-story (196-foot tall), approximately 209,354-gsf commercial office building (the "Proposed Project").

While the applicant intends on developing the Proposed Project described above, as the proposed rezoning would also increase the permitted residential FAR, an alternate reasonable worst-case development scenario (RWCDS), known as the Alternate Residential RWCDS, was also developed. Under the Alternate Residential RWCDS, a 34-story (380-foot tall), approximately 258,904-gsf residential space building containing 259 dwelling units (DUs) and 36 accessory parking spaces would be constructed on the development site. As two RWCDS were identified, each scenario is assessed herein.

This attachment considers the potential for the proposed actions to affect the urban design characteristics and visual resources of the rezoning area and the surrounding secondary study area. The technical analysis presented below follows *CEQR Technical Manual* guidance and addresses each of the above-listed characteristics for existing conditions, the future without the proposed actions (the No-Action scenario), and the future with the proposed actions (the With-Action scenario) for a 2021 analysis year.

II. PRINCIPAL CONCLUSIONS

Urban Design

The proposed zoning map and text amendments would allow a development that differs from what is permitted as-of-right. However, neither the Proposed Project nor the Alternate Residential RWCDS would

result in significant adverse impacts on urban design as determined by guidance for determining impact significance set forth in the *CEQR Technical Manual*. In the future with the proposed actions, the visual appearance within the project area would be enhanced and thus the pedestrian experience of the development site would change; 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 rezoning area such that the alteration would negatively affect a pedestrian's experience of the area.

Visual Resources

Flatbush Avenue Extension serves as a significant view corridor in the secondary study area. Flatbush Avenue Extension provides users with vantage points to view the surrounding built environment of the secondary study area and Downtown Brooklyn, including a view of the Manhattan Bridge to the north. Neither the Proposed Project nor the Alternate Residential RWCDS would obstruct nor eliminate any public views or affect the Flatbush Avenue Extension view corridor 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 *CEQR Technical Manual* guidance, this analysis considers the effects of the proposed actions 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.

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 rezoning area beyond the bulk, form, and height currently permitted as-of-right, they have 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 rezoning area. The following urban design analysis follows *CEQR Technical Manual* guidance.

Per criteria of Section 230 of the *CEQR Technical Manual*, a wind condition analysis is not warranted for the proposed actions. The development site 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

As shown in **Figure H-1**, 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. For the purpose of this assessment, the primary study area consists of the project area. The secondary study area extends approximately 400-feet from the boundary of the project area and encompasses areas that have the potential to experience indirect impacts as a result of the proposed actions. It is generally bounded by Myrtle Avenue to the north, Willoughby Street to the south, Ashland Place to the east, and Flatbush Avenue Extension to the west. Both the primary and secondary study areas have been established in accordance with *CEQR Technical Manual* guidance.

The analysis of urban design and visual resources is based on November 2017 field visits, photography, and computer imaging of the project area and the surrounding 400-foot secondary study area.

IV. PRELIMINARY ASSESSMENT

Existing Conditions

Primary Study Area (Project Area)

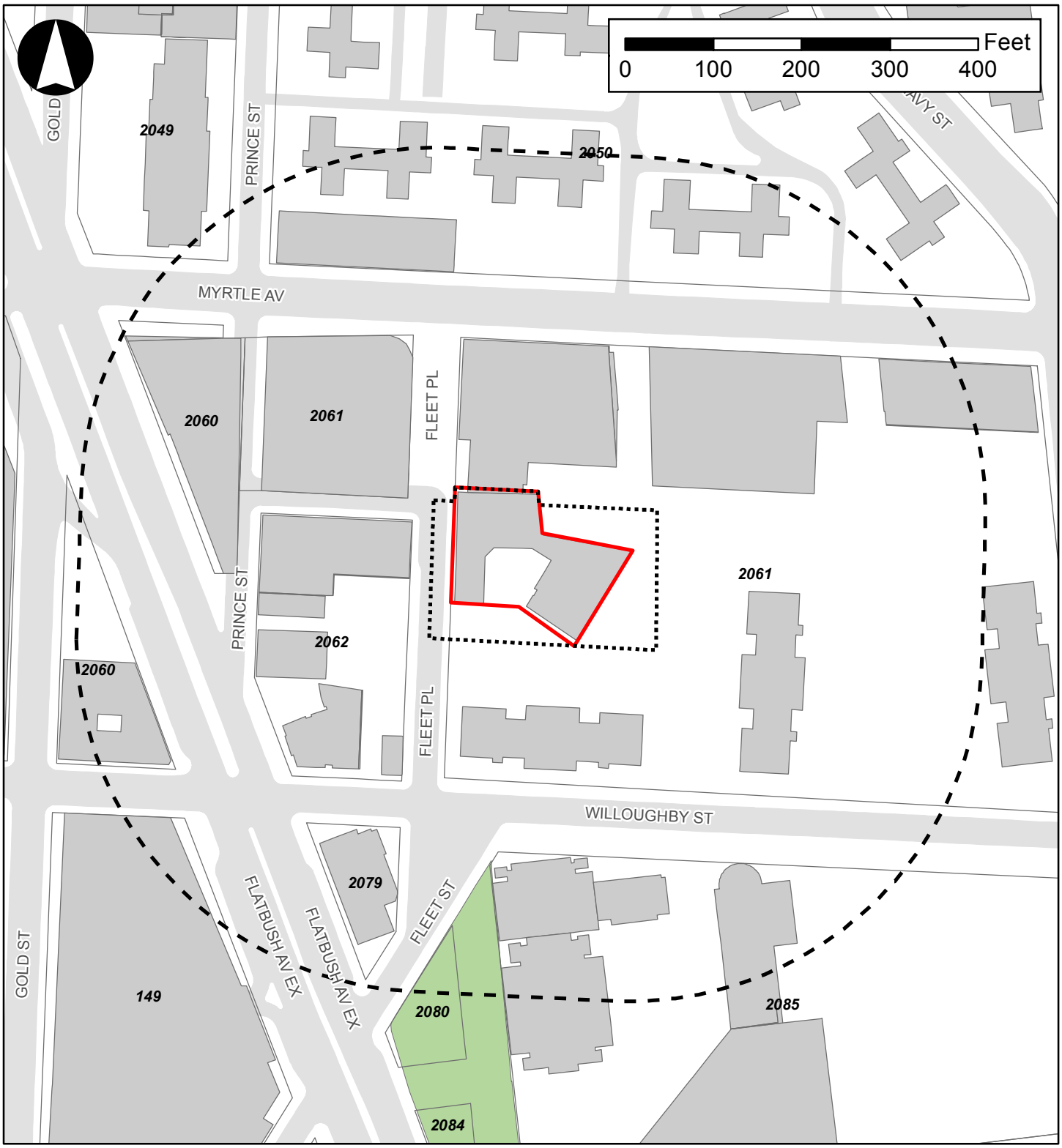
Urban Design

The approximately 33,039-sf rezoning area contains 164'-4" of frontage on the east side of Fleet Place between Myrtle Avenue (to the north) and Willoughby Street (to the south) and extends to the east of Fleet Place to a depth of 200 feet. In addition to a 19,388-sf portion of the applicant-owned Lot 100, the rezoning area encompasses portions of Lots 80 and 110 on Block 2061. An 11,528-sf portion of Lot 80, an approximately 78,478 sf corner lot with frontage on both Fleet Place and Willoughby Street, is located in the rezoning area. A 2,130-sf portion of Lot 110, an approximately 33,656 sf corner lot with frontage on both Fleet Place and Myrtle Avenue, is located in the rezoning area. An approximately 1,148 sf portion of the Lot 100 (the development site) extends outside the boundaries of the rezoning area. Combined the rezoning area and the development site comprise the project area/primary study area (refer to **Figure H-1**).

Buildings

The applicant-owned development site at 101 Fleet Place (Brooklyn Block 2061, Lot 100) is a midblock interior lot with approximately 128 feet of western frontage along Fleet Place (refer to **Figure H-2**). The approximately 20,536-sf development site is currently occupied by a one-story (20-foot-tall) masonry building, which was constructed in 1952 and is currently occupied by Duffield Children's Center, a child care and pre-K program operated by Brooklyn Community Services (BCS); the center has operated from the development site for 20 years. The existing building comprises approximately 16,482 sf, representing a built floor area ratio (FAR) of 0.80. Although the development site contains no parking uses, an existing curb cut is present along Fleet Place. Duffield Children's Center features three entrance/exit points along

Figure H-1
Urban Design Study Area



Legend

- Primary Study Area (Project Area)
- Secondary Study Area (400-Foot Radius)
- Proposed Development Site
- Existing Building Footprints
- Open Space

Source: DoITT; NYCDCP



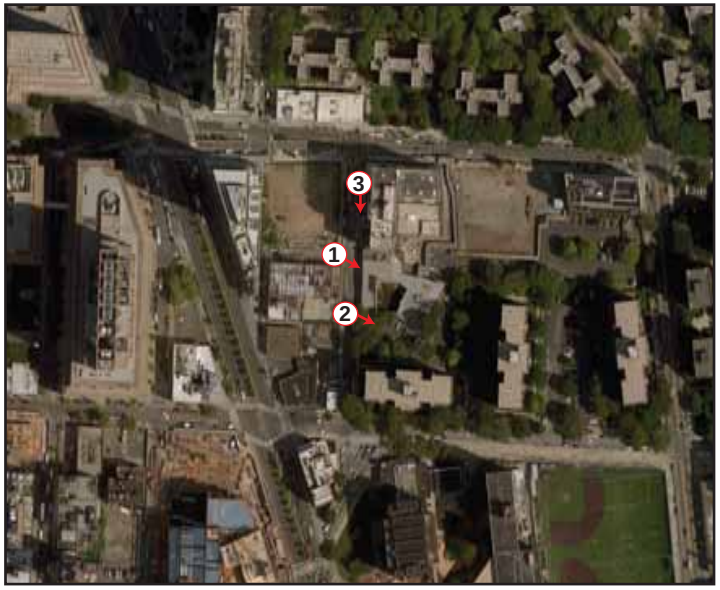
1. View of development site (Block 2061, Lot 100) looking southeast along Fleet Place.



2. Looking southeast towards the University Towers development (Block 2061, Lot 80) from Fleet Place.



3. View of study area looking south near the intersection of Fleet Place and Myrtle Avenue.



Photos taken November 2017

Fleet Place, as well as two entrances/exits in the rear of the building. The building is irregularly-shaped, as it is not setback from the boundaries of Lot 100, and features an interior courtyard that serves as a recreational and play area for students (not visible from the street). As shown in **Figure H-2**, a chain-link security fence is present along the roofline of Duffield Children's Center.

Street Pattern and Streetscape

The project area fronts Fleet Place, a one-block-long street that extends from Willoughby Street (to the south) to Myrtle Avenue (to the north). Fleet Place is a one-way, northbound street with a mapped width of 60 feet. The street was extended north to intersect with Myrtle Avenue and widened to its current mapped width of 60 feet as part of the 2004 Downtown Brooklyn Redevelopment Project; prior to 2004, Fleet Place did not extend north of Fair Street (the approximate northern border of the development site). While mapped at 60 feet, he original span of Fleet Place (south of Fair Street) remains 50 feet wide. Existing pedestrian and vehicular flows are light along Fleet Place. Lots within the rezoning area adjoin the public sidewalk along Fleet Place, which is generally 13 feet in width; however, the width of the sidewalk is ten feet adjacent to the northernmost and southernmost portion of the rezoning area. Streetscape elements include standard street signs, cobra head lampposts with LED lighting, and street trees (see **Figure H-2**).

Natural Features and Open Space

There are no natural features or open space resources located within the project area.

View Corridors and Visual Resources

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

Secondary Study Area

Urban Design

Buildings

Table C-1 in **Attachment C, "Land Use, Zoning, and Public Policy,"** summarizes the existing generalized land uses within the 400-foot study area by land area and built square footage. Overall, as reflected in **Table C-1** and in **Figures H-3** through **H-6**, the secondary study area contains primarily high-density residential buildings, high-density mixed commercial/residential buildings, and public facilities and institutions, as well as a small number of commercial buildings and parking facilities. As shown in **Figures H-7** and **H-8**, high-density multi-family residential development (ten or more floors) is primarily present in the eastern and southeastern portions of the secondary study area, and includes the University Tower development, a complex of three 15-story towers completed in 1958 that is located on the southern, central, and eastern portions of Block 2061 along Willoughby Street and Ashland Place. High-density mixed-use commercial/residential development (ten or more floors) is concentrated along Myrtle Avenue, in the northern portion of the secondary study area, and features multi-family residential uses located above ground-level commercial and retail uses. Many of the mixed-used commercial/residential developments present in the secondary study area have been constructed since 2004, facilitated by the



4. View of mixed-use commercial/residential buildings looking southwest along Myrtle Avenue.



5. Looking northwest towards the University Towers development from Willoughby Street.



6. View of study area looking southwest from Fleet Place, in front of the rezoning area.



Photos taken November 2017



7. View of study area looking north from University Place (open space resource) and Fleet Street.



8. Looking west towards Flatbush Avenue Extension from Willoughby Street.



9. Looking northeast from Flatbush Avenue Extension towards the rezoning area.



Photos taken November 2017



10. View of study area looking north from Flatbush Avenue Extension and Prince Street.



11. Looking northwest along the Flatbush Avenue Extension View Corridor (Manhattan Bridge visible on righthand side of photo).



12. Looking east towards the mixed-use commercial/residential buildings along Myrtle Avenue.



Photos taken November 2017



13. Looking northwest along the Flatbush Avenue Extension View Corridor.



14. Looking east towards the mixed-use commercial/residential buildings along Myrtle Avenue.

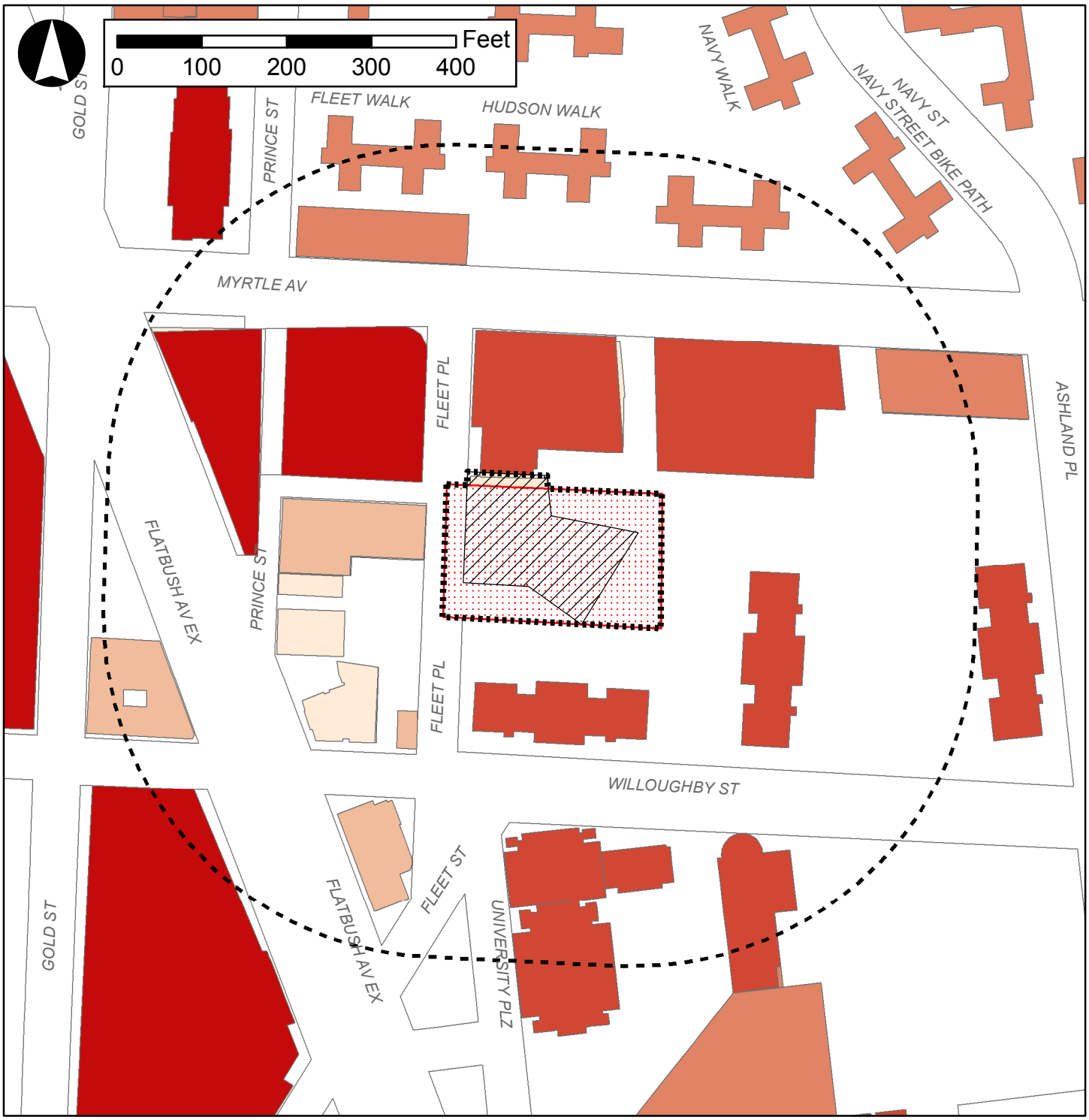


15. Looking north along Fleet Place. The rezoning area is located to the right.



Photos taken November 2017

Figure H-7
Study Area Building Heights



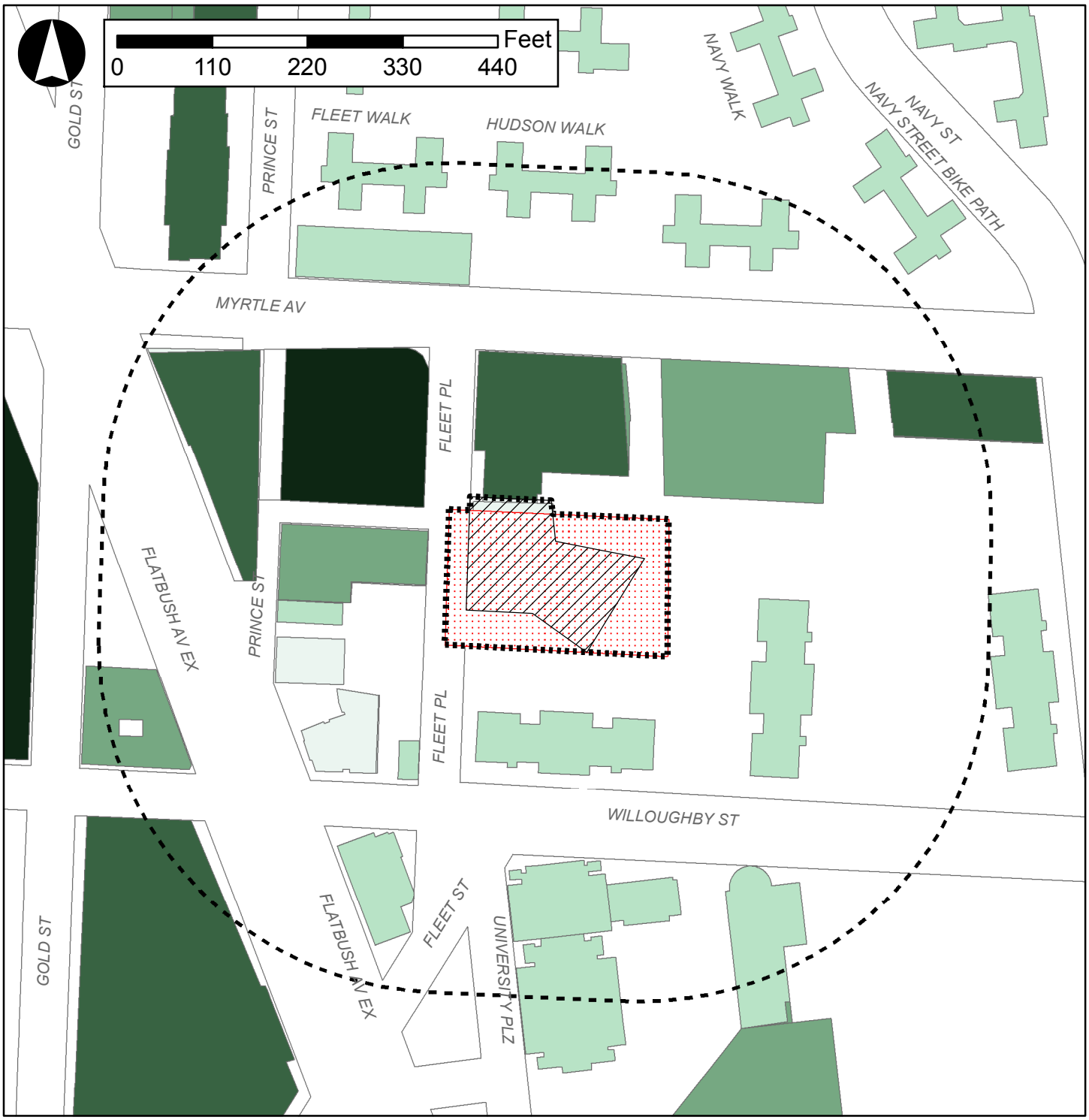
Legend

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

Building Height

- Up to 2 Stories
- 2 to 5 Stories
- 5 to 10 Stories
- 10 to 20 Stories
- Over 20 Stories

Figure H-8
Study Area Building Density



Legend

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

Built FAR

- Up to 1.0 FAR
- 1.0 to 3.0 FAR
- 3.0 to 6.0 FAR
- 6.0 to 12.0 FAR
- Over 12.0 FAR

2004 Downtown Brooklyn Redevelopment Project. Toren, a 38-story tower located in the northwest corner of the secondary study area, was completed in 2010, representing one of the first development projects to rise after passage of the 2004 rezoning, while the Eagle, a 32-story development located at 86 Fleet Place, to the northwest of the rezoning area, was completed in 2017 but is not yet fully occupied, representing one of the latest development projects to be completed within the secondary study area.

In addition to the public facility and institutional use located on the development site (Duffield Children's Center), three additional public facility and institutional uses are located in the southern portion of the secondary study area. Boys Town of New York, an at-risk children and youth center, is located in a four-story, 4,560-gsf brick building at 167 Willoughby Street (Block 2062, Lot 23), to the south of the rezoning area. Fort Greene Health Center, a New York City Health immunization clinic, is located in a five-story, 30,250-gsf brick building at 295 Flatbush Avenue Extension (Block 2079, Lot 21), to the south of the rezoning area. The health center occupies the entire irregular-shaped Block 2079. The Brooklyn campus of Long Island University (LIU), a private higher education facility, is located on the superblock bounded by Willoughby Street to the north, DeKalb Avenue to the south, Ashland Place to the east, and Flatbush Avenue Extension, Fleet Place, and Fleet Street to the west. The university campus, located to the south of the rezoning area, encompasses 1,242,378 gsf of built area located in 13 predominately brick buildings, which range in height from five to 16 stories.

Street Pattern and Streetscape

The street pattern in the secondary study area is composed of rectilinear blocks within a street grid system; however, Flatbush Avenue Extension, which transects the southwestern corner of the secondary study area, disrupts the street grid, creating triangular blocks and lots in the western portion of the secondary study area. All streets within the secondary study area, apart from Flatbush Avenue Extension and Myrtle Avenue, are one-way streets. Flatbush Avenue Extension is a wide, six-lane thoroughfare that runs north-south connecting Downtown Brooklyn to the Belt Parkway and Floyd Bennet Field, traversing the entire borough of Brooklyn along its route. Two demapped streets, Fair Street and Prince Street, are located in the secondary study area, to the west of the rezoning area. These streets, which were demapped and closed to vehicular traffic as part of the 2004 Downtown Brooklyn Redevelopment Project, currently provide service space for loading and construction activities for adjacent properties. Streetscape elements include standard street signs, cobra head and ornamental cast-iron lampposts, fire hydrants, United States Postal Service (USPS) collection boxes, benches, trash receptacles, landscaping, street trees, and circular bike racks. In addition, several Metropolitan Transportation Authority (MTA) bus stop shelters fabricated from tempered glass are present in various locations in the secondary study area, and a cast-iron subway station entrance/exit for the DeKalb Avenue Subway Station (B, Q, and R trains) is located in the southern portion of the secondary study area, near the intersection of Flatbush Avenue Extension and Fleet Street.

Natural Features and Open Space

There is one publicly accessible open space resource located within the secondary study area: University Place. University Place, located along the southern boundary of the secondary study area, to the west of the LIU-Brooklyn campus, is a 1.16-acre park that features a landscaped plaza with benches and pedestrian walkways.

View Corridors and Visual Resources

As highlighted above in "Natural Features and Open Space" and shown in **Figures H-1 and H-4 (Photo No. 7)**, University Place is a visual resource located along the southern border of the secondary study area. In addition, Flatbush Avenue Extension serves as a significant view corridor in the secondary study area. Flatbush Avenue Extension provides users with vantage points to view the surrounding built environment of the secondary study area and Downtown Brooklyn, including a view of the Manhattan Bridge to the north, which is a defining feature of the Brooklyn waterfront. The Manhattan Bridge, which opened in 1909, is a suspension bridge that spans the East River, connecting Lower Manhattan to Downtown Brooklyn. Although the bridge is not a New York City Landmark or listed on the State or National Register (S/NR) of Historic Places, the Manhattan Bridge is recognized as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers (ASCE).

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

Primary Study Area (Project Area)

In the future without the proposed actions, the rezoning area's existing zoning designation would remain in place and it is anticipated that the applicant would not pursue redevelopment on the development site. As such, the existing one-story 16,482-sf building occupied by Duffield Children's Center would remain on the development site in the No-Action condition.

Secondary Study Area

As discussed in **Attachment C, "Land Use, Zoning, and Public Policy,"** there are four known projects that could be completed and occupied within 400 feet of the project area in the future without the proposed actions. A 49-story mixed-use building containing 270 DUs is planned at 141 Willoughby Street, to the west of the project area. An eight-story residential building containing 28 DUs is planned at 167 Willoughby Street, to the southwest of the project area. A 57-story, mixed-use building containing 458 DUs is under construction at 137 Willoughby Street, to the south of the project area. It is also anticipated that the recently completed 32-story mixed-use development located at 86 Fleet Place would be fully occupied by the 2021 No-Action condition.

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 2021 and evaluates the potential for the proposed actions to result in significant adverse impacts. Although the applicant plans to develop the Proposed Project under the With-Action condition, because the Alternate Residential Scenario under the With-Action condition could result in a larger development than the Proposed Project, both the Proposed Project and the Alternate Residential RWCDS are analyzed for their potential to result in significant adverse urban design and visual resources impacts.

Proposed Project

As shown in **Figure H-9**, in the future with the proposed actions, the applicant would redevelop the development site with a 14-story (196-foot tall), approximately 209,354-gsf commercial office building.

Alternate Residential RWCDS

As shown in **Figure H-9**, under the Alternate Residential RWCDS, the applicant could redevelop the development site with a 34-story (380-foot tall), approximately 258,904-gsf residential building containing 259 DUs and 36 accessory parking spaces (located on the cellar level).

Primary Study Area (Project Area)

Urban Design

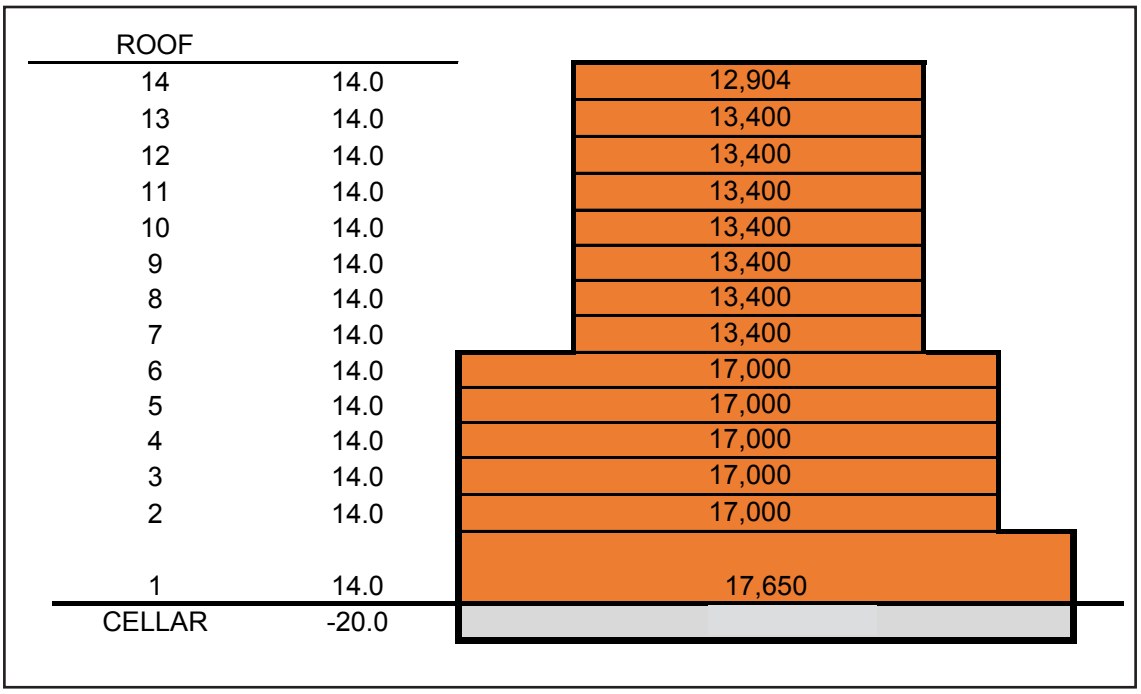
Both the Proposed Project and the Alternate Residential RWCDS would alter the urban design character of the rezoning area. The Proposed Project would introduce an approximately 209,354-gsf, 196-foot-tall building, and the Alternate Residential RWCDS would introduce an approximately 258,904-gsf, 380-foot-tall building. The height and bulk of each building would be larger than the existing building located on the development site, which would remain in the No-Action condition. 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 project area compared to the No-Action condition. Both the Proposed Project and the Alternate Residential RWCDS would be designed to complement the built character of the surrounding area, which is comprised of predominantly high density residential and mixed-use commercial/residential development (see **Figures H-7** and **H-8**). As shown in **Figure H-7**, existing buildings to the north (along Myrtle Avenue) and to the east (along Ashland Place) of the project area contain ten or more habitable floors.

The proposed actions would result in streetscape changes along Fleet Place, as the building entrance under both the Proposed Project and the Alternate Residential RWCDS would be recessed from the lot line to provide additional pedestrian sidewalk space. In addition, a new curb cut would be established at the northern end of the lot under both the Proposed Project and the Alternate Residential RWCDS to access a loading dock and accessory parking, respectively. Under both the Proposed Project and the Alternate Residential RWCDS, the proposed actions would not alter the arrangement or orientation of streets surrounding the project area.

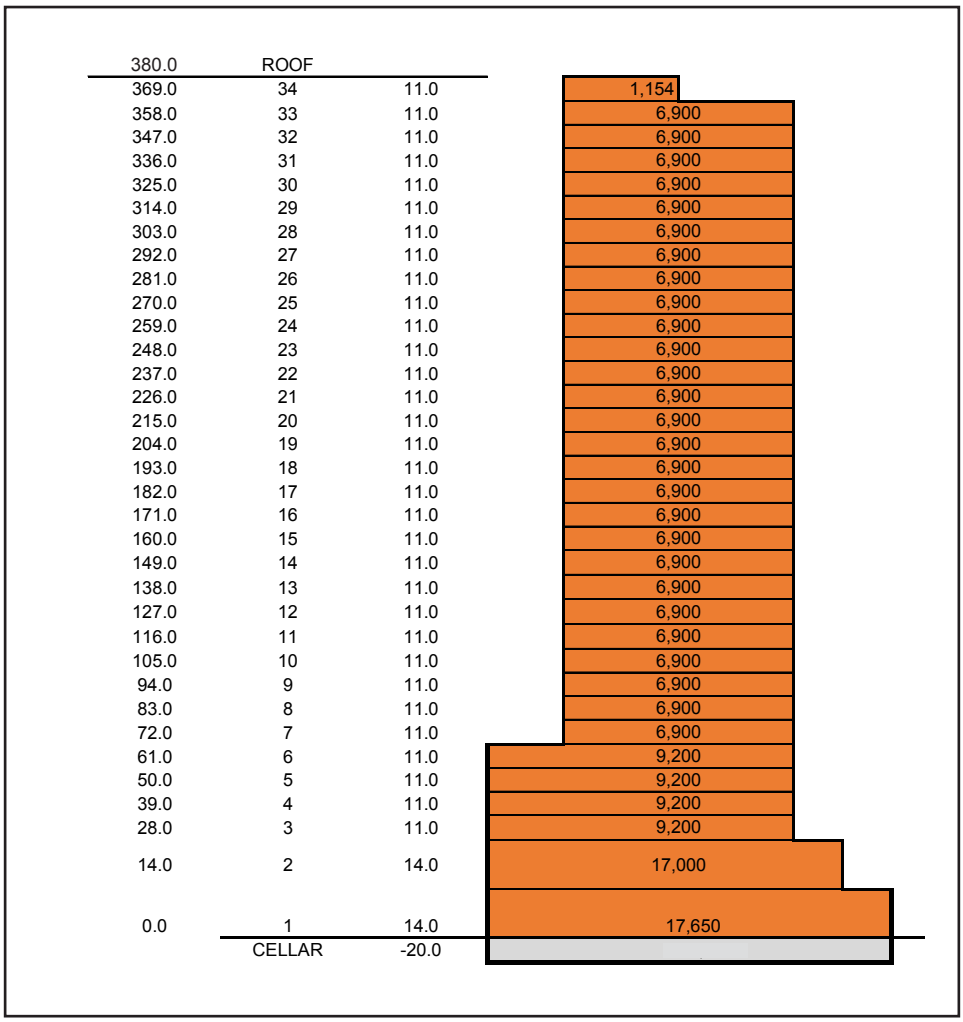
Visual Resources and View Corridors

There are no visual resources, nor any view corridors that can be seen from the project area. 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 project area would change. However, both the Proposed Project and the Alternate Residential RWCDS would not meet the *CEQR Technical Manual* threshold for a significant adverse urban design impact in that neither scenario would not alter the arrangement, appearance, or functionality of the project area in so that the alteration would negatively affect a pedestrian's experience of the project area. As such, neither the Proposed Project or the Alternate Residential RWCDS would result in significant adverse impacts to visual resources and view corridors within the project area.

FOR ILLUSTRATIVE PURPOSES ONLY **RWCDS Massings**



Proposed Project



Alternate Residential RWCDS

Secondary Study Area

Urban Design

The high density commercial uses that would be developed in the project area in the future with the Proposed Project would complement existing land uses in the secondary study area, as well as reflecting the commercial office uses that dominate much of Downtown Brooklyn outside of the secondary study area. Alternatively, the high density residential uses that would be developed in the future with the Alternate Residential RWCDS would be both reflective and complementary to the existing land uses within the secondary study area. There would be no change to building arrangement, bulk, use, or type in the secondary study area as a result of the proposed actions under either the Proposed Project or the Alternate Residential RWCDS. In addition, both the Proposed Project or the Alternate Residential RWCDS would be consistent with the street pattern and streetscape found throughout the secondary study area, and neither the Proposed Project and the Alternate Residential RWCDS would result in significant adverse urban design impacts on University Place, the public open space resource located in the secondary study area.

Visual Resources and View Corridors

As shown in **Figures H-10a** through **H-10c**, which illustrate three With-Action views of the project area, both the Proposed Project and the Alternate Residential RWCDS would be visible from the University Place visual resource and the Flatbush Avenue Extension view corridor. As illustrated, the Proposed Project and the Alternate Residential RWCDS would both be taller than neighboring buildings in the secondary study area. However, as also shown in **Figures H-10a** through **H-10c**, the Proposed Project and the Alternate Residential RWCDS would each be one of several tall, high density buildings in the secondary study area; a recently completed 32-story mixed-use building (The Eagle) is located at 86 Fleet Place, an existing 38-story mixed-use building (Toren) is located at 150 Myrtle Avenue, and a 57-story mixed-use building is under construction at 137 Willoughby Street (the final phase of the CityPoint development). Although both the Proposed Project and the Alternate Residential RWCDS would be visible from Flatbush Avenue Extension, no impacts to this view corridor or northern views to the Manhattan Bridge are anticipated to occur, as both the Proposed Project and the Alternate Residential RWCDS would not have any frontage along Flatbush Avenue Extension nor would either scenario impair the ability of the roadway to achieve its primary purpose as a major thoroughfare serving six lanes of vehicular traffic, as well as pedestrians. Therefore, the Flatbush Avenue Extension view corridor and northern views of the Manhattan Bridge would not be adversely impacted as a result of the proposed actions.



1. Existing & No-Action Conditions: Looking North from Fleet Place



2. With-Action Conditions - Proposed Project: Looking North from Fleet Place



3. With-Action Conditions - Alternate Residential RWCDS: Looking North from Fleet Place



1. Existing & No-Action Conditions: Looking Northwest from Willoughby Street



2. With-Action Conditions - Proposed Project: Looking Northwest from Willoughby Street

FOR ILLUSTRATIVE PURPOSES ONLY



3. With-Action Conditions - Alternate Residential RWCDS: Looking Northwest from Willoughby Street

FOR ILLUSTRATIVE PURPOSES ONLY



1. Existing & No-Action Conditions: Looking Northwest from Flatbush Avenue Extension



2. With-Action Conditions - Proposed Project: Looking Northwest from Flatbush Avenue Extension

FOR ILLUSTRATIVE PURPOSES ONLY



3. With-Action Conditions - Alternate Residential RWCDS: Looking Northwest from Flatbush Avenue Extension

FOR ILLUSTRATIVE PURPOSES ONLY

ATTACHMENT I

WATER AND SEWER INFRASTRUCTURE

I. INTRODUCTION

As defined in the *City Environmental Quality Review* (CEQR) *Technical Manual*, infrastructure comprises the physical systems that support populations and includes structures such as water mains and sewers, bridges and tunnels, roadways, and electrical substations. These structures are static and thus have defined capabilities that may be affected by growth in a particular area.

Given the size of New York City's water supply system and the City's commitment to maintaining adequate water supply and pressure, few actions have the potential to cause significant impacts on this system. Therefore, only very large developments or actions having exceptionally large water demands (e.g., more than one million gallons per day) would warrant a detailed water supply assessment. For wastewater and stormwater conveyance and treatment, the *CEQR Technical Manual* indicates that a preliminary assessment is needed if a project is located in a combined sewer area and would exceed the following incremental development of residential units or commercial space thresholds above the predicted No-Action scenario: (a) 1,000 residential units or 250,000 sf of commercial space or more in Manhattan; or (b) 400 residential units or 150,000 sf of commercial space or more in the Bronx, Brooklyn, Staten Island, or Queens.

As discussed in **Attachment A, "Project Description,"** two reasonable worst-case development scenarios (RWCDS) are being assessed for environmental review purposes: the Proposed Project, which would comprise a total 209,354 gsf of commercial office floor area, and the Alternate Residential RWCDS, which would comprise a total of 258,904 gsf (including 259 dwelling units (DUs). While the Alternate Residential RWCDS would not exceed the *CEQR Technical Manual* sewer infrastructure analysis threshold, the Proposed Project would exceed the applicable threshold of 150,000 sf of commercial space. As such, this attachment provides an evaluation of the potential effects of the Proposed Project on the City's water and sewer infrastructure. Other City infrastructure identified in the *CEQR Technical Manual*, including the transportation network and public transportation systems, are discussed in separate attachments of this EAS. Included is a description of the existing infrastructure in the study area, as well as changes to water and sewer infrastructure conditions that would occur in the 2021 future with and without the proposed actions.

II. PRINCIPAL CONCLUSIONS

The proposed actions would not result in significant adverse impacts on wastewater treatment or stormwater conveyance infrastructure. The Proposed Project is expected to generate approximately 20,935 gallons per day (gpd) of sanitary sewage. This would represent a net increase of 20,465 gpd compared to No-Action conditions and would not result in an exceedance of the Red Hook Water Pollution Control Plant's (WPCP's) permitted capacity. Therefore, the proposed actions would not result in a significant adverse impact to the City's sanitary sewage conveyance and treatment system.

Depending on the rainfall volume and duration, the total With-Action volume to the combined sewer system could be between 0.00 and 0.05 million gallons per day (mgd). Compared to existing conditions, this would represent an increase in combined sewer flows of up to 0.02 mgd, depending on rainfall intensities. With the incorporation of selected stormwater source control best management practices (BMPs) that would be required as part of the site connection approval process, subject to the review and approval of the New York City Department of Environmental Protection (DEP), the peaks stormwater runoff rates would be reduced. Overall, the Proposed Project would not result in significant adverse impacts on the City's sewage conveyance and treatment systems.

III. METHODOLOGY

This analysis follows the methodologies set forth in the *CEQR Technical Manual*. Pursuant to CEQR, a preliminary water analysis is needed if a project would result in an exceptionally large demand of water (over 1,000,000 gpd) or is located in an area that experiences low water pressure. The development site is located in Brooklyn Community District (CD) 2 and is not located in an area that experiences low water pressure (i.e., it is not located at the end of the water supply distribution system, such as the Rockaway Peninsula or Coney Island), nor would the Proposed Project or Alternate Residential RWCDS generate an incremental water demand of over one million gpd (including water related to sanitary and domestic uses) compared with the No-Action condition. Therefore, an analysis of water supply is not warranted since it is expected that there would be adequate water service to meet the incremental water demand and there would be no significant adverse impacts on the City's water supply.

A preliminary sewer analysis is warranted if a project site comprises more than five acres and would result in an increase of impervious surfaces on the site, or if a project is located in a combined sewer area and would result in the incremental development of at least 400 residential units or 150,000 sf or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens or at least 1,000 residential units or 250,000 sf or more of commercial space in Manhattan. As the development site is located in a combined sewer area in Brooklyn and the Proposed Project would exceed the CEQR commercial floor area threshold, a preliminary sewer analysis was conducted. As noted above, the Alternate Residential RWCDS, which would include 259 DUs would not exceed the CEQR analysis threshold, and, as such, this attachment focuses on the Proposed Project only.

Existing and future sanitary sewage generation is calculated for the development site based on use generation rates set forth in Table 13-2 of the *CEQR Technical Manual*. The DEP Volume Calculation Matrix is then used to calculate the overall combined sanitary sewage and stormwater runoff volume discharged to the combined sewer systems for four rainfall volume scenarios with varying durations. Stormwater runoff volumes are determined by estimating the amount of pervious and impervious surfaces on the development site. The ability of the City's water and sewer infrastructure to handle the estimated demand/generation that is anticipated from the proposed project is assessed by estimating existing, No-Action, and With-Action water demand and sewage generation. Future With-Action water demand and wastewater generation is compared to the No-Action condition, and future With-Action combined stormwater runoff and wastewater generation volumes are compared to existing conditions.

IV. EXISTING CONDITIONS

Conveyance System

The majority of New York City's wastewater treatment system is comprised of the sewer network beneath the streets and the fourteen WPCPs located throughout the City. The majority of New York City's sewers are called combined sewers as they received sanitary wastewater and stormwater runoff. Wastewater generated in a "drainage basin" (the area served by a WPCP) is conveyed through a network of combined sewers to the WPCP. As noted above, the development site is served by combined sewers that collect both sanitary sewage and stormwater. The development site is located within the drainage basin for the Red Hook WPCP, located approximately 0.7 miles to the north.

Collection sewers can be one to two feet in diameter on side streets, and three or four feet in diameter under larger roadways, which connect to trunk sewers, generally five to seven feet in diameter. During dry weather, regulators built into the combined sewer system direct flows to interceptor sewers leading to the WPCPs. These large interceptor sewers (often up to ten or twelve feet in diameter) bring the wastewater to the WPCPs for treatment. In the vicinity of the development site, there is a 12-inch combined sewer under Fleet Place, an 18-inch combined sewer directly north of the development site (running through portions of adjacent lots 110, 60, and 1), and a combined sewer directly east of the development site (running through adjacent lots 60 and 1).

At the Red Hook WPCP, wastewater is fully treated by physical and biological process before it is discharged into the East River. The quality of the treated wastewater (effluent) is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC), which establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants). Since the volume of flow to a WPCP affects the level of treatment a plant can provide, the maximum permitted capacity for the Newtown Creek WPCP is 60 million gallons per day (mgd). As presented in **Table I-1**, below, the average daily flows to the WPCP for the 12-month period ending in March 2018 was 28.67 mgd, which is well below the maximum permitted capacity of 60 mgd.

Table I-1: Existing Red Hook WPCP Average Daily Sewer Flows

Year	Month	Average Daily Flows (mgd)
2017	April	30
	May	30
	June	29
	July	27
	August	28
	September	25
2018	October	26
	November	24
	December	24
	January	29
	February	36
	March	36
12-Month Average		28.67

Source: DEP "Monthly Operating Efficiency" tables.

During and immediately after wet weather events, combined sewers can experience a much larger flow due to stormwater runoff collection. Stormwater runoff from impermeable surfaces is collected by catch basins along the street and conveyed by the City's combined sewer system to the Hunts Point WPCP. During storm events, the regulators built into the system allow only twice the dry weather design flow into interceptor sewers, and any excess flow is directed to outfalls into the local waterway (e.g., the East River, etc.) as combined sewer overflow (CSO).

Sanitary Flows

As described in **Attachment A, "Project Description,"** the existing 16,482-gsf building located on the development site is currently occupied by the Duffield Children's Center, a child care and pre-K facility. As presented in **Table I-2**, the existing building is estimated to generate approximately 470 gpd of daily sanitary sewage, with a total water demand of 4,165 gpd. Existing sanitary flows generated on the development site are conveyed to the Red Hook WPCP during dry weather events via the existing combined sewers serving the site.

Table I-2: Existing Water Consumption and Wastewater Generation on the Development Site

Land Use	Rate	Area (sf) & Population	Domestic Water/ Wastewater Generation (gpd)	A/C (gpd)
Child Care/Pre-K Center	Domestic: 10 gpd/student A/C: 0.17 gpd/sf	16,482 gsf 47 students	470	3,695
Total Water Consumption			4,165	
Total Wastewater Generation			470	

Stormwater Flows

The development site has a total area of approximately 20,536 sf. As noted above, the development site is currently occupied by the 16,482-gsf Duffield Children's Center, which is housed in a one-story structure occupying the approximately 80 percent of the site. The remaining approximately 20 percent of the development site is occupied by a playground/outdoor play area comprising both concrete and foam padding impervious surfaces. As such, the development site is currently comprised entirely of impervious surfaces and has an existing runoff coefficient of 0.97, as presented in **Table I-3**.

Table I-3: Existing Surface Types on the Proposed Development Site

Surface Type	Roof[1]	Pavement and Walks	Other	Grass and Softscape	Total
Area (%)	100	0	0	0	100
Surface Area (sf)	16,482	4,054	0	0	20,536
Runoff Coefficient[2]	1.0	0.85	0.85	0.20	0.97

Notes:
[1] Total roof area on site.
[2] Runoff coefficients for each surface type are as per DEP.

For this analysis, standard DEP runoff coefficients were used to calculate the amount of stormwater runoff for various rainfall intensities and durations, with rainfall ranging from 0.00 inches to 2.50 inches over durations of 3.80 to 19.50 hours. **Table I-4** shows the combined stormwater runoff and wastewater generation for the development site under existing conditions. As indicated in the table, the development

site currently generates between 0.00 and 0.03 mg of combined flows within the Red Hook WPCP for the different rainfall intensities.

Table I-4: Existing Combined Stormwater Runoff and Wastewater Generation

Rainfall (inches)	Duration (Hours)	Total Area (Acres)	Runoff Coefficient	Stormwater Runoff (MG)	Sanitary to CSS (MG)[1]	Total (MG)
0.00	3.80	0.47	0.97	0.00	0.00	0.00
0.40	3.80			0.00	0.00	0.00
1.20	11.30			0.01	0.00	0.01
2.50	19.50			0.03	0.00	0.03

Notes:
[1] Refer to **Table I-2**.
MG = million gallons

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

As described in **Attachment A, "Project Description,"** in the future without the proposed actions no changes to the development site are anticipated. As such, the development site would continue to generate approximately 470 gpd of sanitary sewage, have a total water demand of 4,165 gpd, and generate approximately 0.00 to 0.03 mg of combined flows to the Red Hook WPCP, depending on rainfall duration and intensity.

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

In the 2021 future with the Proposed Project, the development site would be redeveloped with an approximately 209,354-gsf commercial office building. The Proposed Project would occupy 86 percent (17,650 sf) of the development site's lot area.

Sanitary Flows

As described previously, the development site is located in an area served by combined sewers. In the future with the proposed actions, wastewater from the development site would continue to be treated by the Red Hook WPCP, which has an SPDES-permitted dry weather flow capacity of 60 mgd. As shown in **Table I-5**, the Proposed Project would generate approximately 20,935 gpd of sanitary sewage, with a total water demand of approximately 52,361 gpd. This sanitary sewage generation represents a net increase of approximately 20,465 gpd (0.02 mgd) over the No-Action condition and would not result in an exceedance of the Red Hook WPCP's permitted capacity of 60 mgd. In addition, in accordance with the New York City Plumbing Code (Local Law 33 of 2007), the Proposed Project would be required to utilized low-flow plumbing fixtures, which would reduce sanitary flows to the plant. Therefore, the Proposed Project would not result in a significant adverse impact to the City's sanitary sewage conveyance and treatment.

Table I-5: With-Action Water Consumption and Wastewater Generation on the Development Site

Land Use	Rate[1]	Area (gsf)	Domestic Water/ Wastewater Generation (gpd)	A/C (gpd)	Total Water Consumption
Commercial Office	Domestic: 0.10 gpd/sf A/C: 0.17 gpd/sf	209,354	20,935	35,590	52,361

Notes:
[1] Rates are from the *CEQR Technical Manual,* Table 13-2.

Stormwater Flows

In the future with the proposed actions, the amount of impervious surface area on the development site would increase slightly, as compared to existing conditions; as a result, the runoff coefficient would increase from 0.97 to 0.98. **Table I-6** compares the estimated combined flows (stormwater runoff and sanitary flows) to the combined sewer system under existing and With-Action conditions using the DEP Flow Volume Calculation Matrix. As shown in the table, depending on the rainfall volume and duration, the total With-Action volume to the combined sewer system could be between 0.00 and 0.05 mgd. Compared to existing conditions, this would represent an increase in combined sewer flows of up to 0.02 mgd.

Table I-6: Existing and With-Action Combined Stormwater Runoff and Wastewater Generation

		Existing Conditions			With-Action Condition			
Rainfall (inches)	Duration (Hours)	Stormwater Runoff (MG)	Sanitary to CSS (MG)	Total (MG)	Stormwater Runoff (MG)	Sanitary to CSS (MG)	Total (MG)	Increased Total Volume to CSS (MG)
0.00	3.80	0.00	0.00	0.00	0.00	0.003	0.00	0.00
0.40	3.80	0.00	0.00	0.00	0.01	0.003	0.01	0.01
1.20	11.30	0.01	0.00	0.01	0.02	0.010	0.03	0.02
2.50	19.50	0.03	0.00	0.03	0.03	0.017	0.05	0.02

Notes:
MG = million gallons

The Flow Volume Matrix calculations do not reflect the use of any sanitary and stormwater source control BMPs to reduce sanitary flow and stormwater runoff volumes to the combined sewer system. As noted above, the Proposed Project would incorporate low-flow plumbing fixtures to reduce sanitary flow in accordance with the New York City Plumbing Code. In addition, stormwater BMPs would be required as part of the DEP site connection approval process in order to bring the building into compliance with the required stormwater release rate. Based on the DEP Guidelines for the Design and Detention Facility Design, dated June 6, 2012, for new developments, the required stormwater release rate for the Proposed Project is required to be 0.25 cubic feet per second (cfs) or ten percent of the allowable flow. Specific BMP methods will be determined with further refinement of the building design and in consultation with DEP.

The incorporation of the appropriate sanitary flow and stormwater source control BMPs that would be required as part of the site connection approval process, with the review and approval of DEP, would reduce the overall volume of sanitary sewer discharge and stormwater runoff as well as the peak stormwater runoff rate from the development site. Sewer conveyance near the development site and the treatment capacity at the Red Hook WPCP is sufficient to handle wastewater flow resulting from the Proposed Project. Therefore, there would be no significant adverse impacts on wastewater treatment or stormwater conveyance infrastructure.

ATTACHMENT J

TRANSPORTATION

I. INTRODUCTION

This transportation attachment presents the findings of the analyses of traffic, parking, transit, and pedestrian conditions for the 101 Fleet Place proposal in Brooklyn Community District (CD) 2. As discussed in **Attachment A, "Project Description,"** the applicant is seeking zoning map and text amendments to facilitate the development of a commercial office building. For environmental review purposes, two reasonable worst-case development scenarios (RWCDSs) were identified for the proposed actions: the Proposed Project with approximately 209,354 gross square feet (gsf) of office uses and an Alternate Residential RWCDS, which assumes the development of 259 DUs in place of the proposed commercial office uses. Both the Proposed Project and the Alternate Residential RWCDS exceed the *City Environmental Quality Review* (CEQR) *Technical Manual* preliminary screening thresholds. As presented herein, the RWCDS that is expected to generate the greatest amount of trips is the focus of the detailed analysis.

The analysis year for the proposed actions is 2021. In the absence of the proposed actions (the "No-Action condition"), it is anticipated that the existing development site uses would remain. The assessment of the proposed action's potential transportation impacts is based on the methodologies set forth in the *CEQR Technical Manual.*

II. PRINCIPAL CONCLUSIONS

Based on the following detailed analysis, the anticipated level of new transportation demand generated by the proposed actions is not expected to result in any significant adverse impacts to traffic, parking, transit, or pedestrian conditions in the vicinity of the development site. Detailed traffic and transit (subway and bus) analyses were screened out, and three pedestrian elements were analyzed as part of the detailed pedestrian analysis. The detailed pedestrian analysis determined that all analyzed pedestrian elements would operate at level of service (LOS) C or better in the future with the proposed actions, and no significant adverse pedestrian impacts would result.

While one intersections located within the surrounding area was identified as high accident location, the proposed actions not expected to exacerbate safety concerns at this intersection.

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 to estimate the number of peak hour person and vehicle trips by mode expected to be generated by the proposed project. The peak hour person and vehicle trip estimates were then compared to the *CEQR Technical Manual* analysis thresholds to determine if a Level 2 screening and/or quantified operational analyses may be warranted. The travel demand assumptions used for the assessment are discussed below and a detailed travel demand forecast is provided.

The Level 1 screening assessment relies on the RWCDS uses. As discussed in **Attachment A, "Project Description,"** two RWCDS were identified for the proposed actions: (1) the Proposed Project, which maximizes the permitted commercial floor area ratio (FAR); and (2) an Alternate Residential RWCDS, which maximizes the permitted residential FAR. Level 1 trip generation forecasts were prepared for both scenarios to determine which represented the worst-case for environmental review purposes.

Transportation Planning Factors

The transportation planning factors used to forecast travel demand for the Proposed Project and Alternate Residential RWCDS land uses are summarized in **Tables J-1** and **J-2**, respectively, and are also discussed below. The trip generation rates, temporal distributions, modal splits, vehicle occupancies, and truck trip factor each of land use were primarily based on 2014 *CEQR Technical Manual*, census data, and studies that have been used in previous environmental review documents for projects with similar uses. Factors are shown for the weekday AM, midday, and PM and Saturday midday peak periods.

Office

The forecast of travel demand for the Proposed Project's office component used a weekday trip generation rate of 18.0 person trips per 1,000 sf, a Saturday trip generation rate of 3.9 person trips per DU, and temporal distributions of 12.0 percent, 15.0 percent, 14.0 percent, and 17.0 percent for the weekday AM, midday, and PM and Saturday midday peak hours, respectively, as per the *CEQR Technical Manual*. The modal splits, directional splits, and auto and taxi occupancy rates were also based on this 2014 FSEIS, as well as DOT mode choice surveys for Downtown Brooklyn. Truck trip generation rates were based on the *CEQR Technical Manual*.

Table J-1: Travel Demand Forecast Assumptions – Proposed Project

Land Use:		**Office**	
Size/Units:		209,354 gsf	
Trip Generation:		(1)	
	Weekday	18.0	
	Saturday	3.9	
		per 1,000 sf	
Temporal Distribution:		(1,2)	
	AM	12.0%	
	MD	15.0%	
	PM	14.0%	
	SatMD	17.0%	
		(2, 3, 4)	
Modal Splits:		AM/PM	MD/Sat MD
	Auto	8.0%	2.0%
	Taxi	2.0%	1.0%
	Subway	64.0%	7.0%
	Railroad	0.0%	0.0%
	Bus	5.0%	7.0%
	Bike	10.0%	10.0%
	Walk/Other	11.0%	73.0%
		100.0%	100%
		(2)	
In/Out Splits:		In	Out
	AM	96.0%	4.0%
	MD	39.0%	61.0%
	PM	5.0%	95.0%
	Sat MD	60.0%	40.0%
Vehicle Occupancy:		(4)	
	Auto	1.20	
	Taxi	1.20	
Truck Trip Generation:		(1)	
		Weekday	Saturday
		0.32	0.01
		(1)	
	AM	10.0%	
	MD	11.0%	
	PM	2.0%	
	Sat MD	11.0%	
		In	Out
		50.0%	50.0%

Notes :

(1) *2014 City Environmental Quality Review (CEQR) Technical Manual.*
(2) Source: Atlantic Yards Arena and Redevelopment FSEIS, 2014
(3) Based on DOT office mode choice surveys for Downtown Brooklyn
(4) Based on data provided by NYCDCP.

Table J-2: Travel Demand Forecast Assumptions – Alternate Residential RWCDS

Land Use:		**Residential**	
Size/Units:		259	DUs
Trip Generation:		(1)	
	Weekday	8.1	
	Saturday	9.6	
		per DU	
Temporal Distribution:		(1,2)	
	AM	10.0%	
	MD	5.0%	
	PM	11.0%	
	SatMD	8.0%	
		(3)	
Modal Splits:		All Periods	
	Auto	9.1%	
	Taxi	1.0%	
	Subway	70.5%	
	Railroad	1.2%	
	Bus	3.4%	
	Bike	3.4%	
	Walk/Other	11.4%	
		100.0%	
		(2)	
In/Out Splits:		In	Out
	AM	20.0%	80.0%
	MD	51.0%	49.0%
	PM	65.0%	35.0%
	Sat MD	50.0%	50.0%
Vehicle Occupancy:		(2, 3)	
	Auto	1.16	
	Taxi	1.42	
		(1)	
Truck Trip Generation:		Weekday	Saturday
		0.06	0.02
		per DU	
		(1)	
	AM	12.0%	
	MD	9.0%	
	PM	2.0%	
	Sat MD	9.0%	
		In	Out
		50.0%	50.0%

Notes :

(1) *2014 City Environmental Quality Review (CEQR) Technical Manual.*
(2) Source: Atlantic Yards Arena and Redevelopment FSEIS, 2014
(3) 2013-2017 ACS Journey to Work data for Census for Brooklyn tracts 15, 29.01, 31, 33, 181, 183, and 185.01.

Residential

The forecast of travel demand for the Alternate Residential RWCDS's residential units used a weekday trip generation rate of 8.075 person trips per dwelling unit (DU), a Saturday trip generation rate of 9.6 person trips per DU, and temporal distributions of 10.0 percent, 5.0 percent, 11.0 percent, and 8.0 percent for the weekday AM, midday, and PM and Saturday midday peak hours, respectively, as per the *CEQR Technical Manual*. The taxi occupancy rate of 1.42 persons per vehicle was also based on this 2014 FSEIS. The residential units' modal split is estimated at 9.1 percent, 1.0 percent, 70.5 percent, 1.2 percent, 3.4 percent, 3.4 percent and 11.4 percent for private auto, taxi, subway, railroad, bus, bike, and walk-only/other modes, respectively, as per the 2013-2017 American Community Survey (ACS) Means of Transportation to Work data for Brooklyn census tracts 15, 29.01, 31, 33, 181, 183, and 185.01. The auto vehicle occupancy of 1.16 was also based on this ACS data. Truck trip generation rates were based on the *CEQR Technical Manual*.

Travel Demand Forecast

Tables J-3 and **J-4** present the person and vehicle trips expected to be generated by the proposed project and Alternate Residential RWCDS, respectively. As presented in **Table J-3**, the Proposed Project would generate approximately 452, 564, 528, and 139 person trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. In comparison, the Alternate Residential RWCDS would generate 210, 106, 230, and 198 person trips in these same peak hours (refer to **Table J-4**). As the Proposed Project would generate more trips than the Alternate Residential RWCDS, the Proposed Project represents the worst-case for transportation analysis purposes. A discussion of the Proposed Project's incremental person trips and vehicle trips, by mode, is provided below.

Traffic

As shown in **Table J-3**, accounting for displaced existing vehicle trips, the travel demand forecast indicates that the Proposed Project would generate a project increment of approximately 30, 23, 37, and 7 vehicle trips (in and out combined) in the weekday AM, midday, and PM and Saturday midday peak periods, respectively. As the Proposed Project would generate fewer than 50 trips in all peak hours, no further traffic analysis is warranted, and no significant adverse impacts are anticipated.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) specified in the *CEQR Technical Manual*, detailed transit analyses are not required if the proposed project is projected to result in less than 200 peak hour rail or 50 peak hour bus transit riders, because a proposed development that generates such a low number of transit riders is unlikely to create a significant adverse impact on the current transit facilities.

As shown in **Table J-3**, the approximate hourly subway trips generated by the Proposed Project would be 290, 39, 338, and ten (in and out combined) trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. As the Proposed Project would generate more than 200 subway trips in the weekday AM and PM peak hours, a Level 2 subway trip assignment is warranted, which is provided in Section V, "Level 2 Screening Assessment."

Table J-3: Travel Demand Forecast – Proposed Project

Land Use:		**Office**		
Size/Units:		209,354 gsf		
Peak Hour Trips:				
	AM	452		
	MD	564		
	PM	528		
	Sat MD	139		
Person Trips:				
		In	Out	***Total***
AM	**Auto**	35	1	***36***
	Taxi	9	0	***9***
	Subway	278	12	***290***
	Railroad	0	0	***0***
	Bus	22	1	***23***
	Bike	43	2	***45***
	Walk/Other	47	2	***49***
	Total	434	18	***452***
		In	Out	***Total***
MD	**Auto**	4	7	***11***
	Taxi	2	3	***5***
	Subway	15	24	***39***
	Railroad	0	0	***0***
	Bus	15	24	***39***
	Bike	22	34	***56***
	Walk/Other	162	252	***414***
	Total	220	344	***564***
		In	Out	***Total***
PM	**Auto**	2	40	***42***
	Taxi	1	10	***11***
	Subway	17	321	***338***
	Railroad	0	0	***0***
	Bus	1	25	***26***
	Bike	3	50	***53***
	Walk/Other	3	55	***58***
	Total	27	501	***528***
		In	Out	***Total***
Sat MD	**Auto**	2	1	***3***
	Taxi	1	1	***2***
	Subway	6	4	***10***
	Railroad	0	0	***0***
	Bus	6	4	***10***
	Bike	8	6	***14***
	Walk/Other	60	40	***100***
	Total	83	56	***139***
Vehicle Trips :				
		In	Out	***Total***
AM	**Auto**	29	1	***30***
	Taxi	8	0	***8***
	Taxi Balanced	8	8	***16***
	Truck	3	3	***6***
	Total	40	12	***52***
		In	Out	***Total***
MD	**Auto**	3	6	***9***
	Taxi	2	3	***5***
	Taxi Balanced	4	4	***8***
	Truck	4	4	***8***
	Total	11	14	***25***
		In	Out	***Total***
PM	**Auto**	2	33	***35***
	Taxi	1	8	***9***
	Taxi Balanced	9	9	***18***
	Truck	1	1	***2***
	Total	12	43	***55***
		In	Out	***Total***
Sat MD	**Auto**	2	1	***3***
	Taxi	1	1	***2***
	Taxi Balanced	2	2	***4***
	Truck	0	0	***0***
	Total	4	3	***7***

	With-Action Traffic Volumes			**Existing/No-Action Traffic Volumes***			**Net Increment**		
Total Auto Trips	In	Out	***Total***	In	Out	***Total***	In	Out	***Total***
AM	40	12	***52***	11	11	***22***	29	1	***30***
MD	11	14	***25***	1	1	***2***	10	13	***23***
PM	12	43	***55***	9	9	***18***	3	34	***37***
SAT	4	3	***7***	-	-	***-***	4	3	***7***

*Based on 9/20/16 traffic counts.

Table J-4: Travel Demand Forecast – Alternate Residential RWCDS

Land Use:		**Residential**		
Size/Units:		259	DUs	
Peak Hour Trips:				
	AM	210		
	MD	106		
	PM	230		
	Sat MD	198		
Person Trips:				
		In	Out	***Total***
AM	**Auto**	4	15	***19***
	Taxi	0	2	***2***
	Subway	30	118	***148***
	Railroad	1	2	***3***
	Bus	1	6	***7***
	Bike	1	6	***7***
	Walk/Other	5	19	***24***
	Total	42	168	***210***
		In	Out	***Total***
MD	**Auto**	5	5	***10***
	Taxi	1	1	***2***
	Subway	37	37	***74***
	Railroad	1	1	***2***
	Bus	2	2	***4***
	Bike	2	2	***4***
	Walk/Other	5	5	***10***
	Total	53	53	***106***
		In	Out	***Total***
PM	**Auto**	14	7	***21***
	Taxi	1	1	***2***
	Subway	105	57	***162***
	Railroad	2	1	***3***
	Bus	5	3	***8***
	Bike	5	3	***8***
	Walk/Other	17	9	***26***
	Total	149	81	***230***
		In	Out	***Total***
Sat MD	**Auto**	9	9	***18***
	Taxi	1	1	***2***
	Subway	70	70	***140***
	Railroad	1	1	***2***
	Bus	3	3	***6***
	Bike	3	3	***6***
	Walk/Other	12	12	***24***
	Total	99	99	***198***
Vehicle Trips :				
		In	Out	***Total***
AM	**Auto**	3	13	***16***
	Taxi	0	1	***1***
	Taxi Balanced	1	1	***2***
	Truck	1	1	***2***
	Total	5	15	***20***
		In	Out	***Total***
MD	**Auto**	4	4	***8***
	Taxi	1	1	***2***
	Taxi Balanced	2	2	***4***
	Truck	1	1	***2***
	Total	7	7	***14***
		In	Out	***Total***
PM	**Auto**	12	6	***18***
	Taxi	1	1	***2***
	Taxi Balanced	2	2	***4***
	Truck	0	0	***0***
	Total	14	8	***22***
		In	Out	***Total***
Sat MD	**Auto**	8	8	***16***
	Taxi	1	1	***2***
	Taxi Balanced	2	2	***4***
	Truck	0	1	***1***
	Total	10	11	***21***

	With-Action Traffic Volumes			**Existing/No-Action Traffic Volumes***			**Net Increment**		
Total Auto Trips	In	Out	***Total***	In	Out	***Total***	In	Out	***Total***
	5	15	***20***	11	11	***22***	-6	4	***-2***
	7	7	***14***	1	1	***2***	6	6	***12***
	14	8	***22***	9	9	***18***	5	-1	***4***
	10	11	***21***	-	-	**-**	10	11	***21***

*Based on 9/20/16 traffic counts.

As also shown in **Table J-3**, the approximate hourly public bus trips generated by the Proposed Project would be 23, 39, 26, and ten trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. As the Proposed Project would generate fewer than 200 bus person-trips in all peak hours and less than 50 new bus riders per bus and direction, no further analysis is warranted, and no significant adverse bus impacts are anticipated.

Pedestrians

Analyses of pedestrian conditions focuses on elements where a substantial number of trips are generated by an action. These elements include sidewalks, corner areas, and crosswalks. As shown in **Table J-3**, the Proposed Project would generate 49, 414, 58, and 100 walk-only trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Accounting from walk trips to/from area public transit and public parking facilities, the Proposed Project would generate a total of 395, 503, 464, and 123 walk trips in these same peak hours. As the number of incremental peak hour pedestrian trips would exceed the *CEQR Technical Manual* analysis thresholds in all weekday peak hours, a Level 2 screening assessment was undertaken for the weekday AM, midday, and PM peak hours, which is presented below. With less than 200 pedestrian trips anticipated in the Saturday midday peak hour, no further analysis of this peak hour is warranted, and no significant adverse impacts are anticipated.

V. LEVEL 2 SCREENING ASSESSMENT

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street and transit networks 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.

Transit – Subway

The Proposed Project would generate more than 200 subway trips in the weekday AM and PM peak hours, and, therefore, a Level 2 subway trip assignment is warranted. Project-generated peak hour subway trips were distributed to area subway stations based on Metropolitan Transportation Authority (MTA) ridership data for the five stations closest to the development site: the DeKalb Avenue (B/Q/R) Station, the Hoyt Street (2/3) Station, the Hoyt-Schermerhorn (A/C/G) Station, the Nevins Street (2/3) Station, and the Jay Street-MetroTech (A/C/F/R) Station. The resultant weekday AM and PM in/out trips by station are presented in **Table J-5**. As presented in the table, no stations are expected to experience 200 or more incremental subway person trips in the weekday AM or PM peak hours. As such, a detailed subway station analysis is not warranted in accordance with CEQR. In addition, as no one line would experience 200 or more trips in one direction, a detailed subway line haul analysis is not warranted, and no significant adverse line haul impacts are anticipated.

Table J-5: Subway Trip Assignment by Station

Station	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
DeKalb Avenue (B/Q/R)	56	2	58	3	64	67
Hoyt Street (2/3)	22	1	23	1	27	28
Hoyt-Schermerhorn (A/C/G)	32	2	33	2	36	38
Nevins Street (2/3/4/5)	37	2	39	2	43	45
Jay Street-MetroTech (A/C/F/R)	131	6	137	9	151	160
Total	***278***	***12***	***290***	***17***	***321***	***338***

Pedestrians

As shown in **Table J-3**, the number of incremental peak hour pedestrian trips would exceed the *CEQR Technical Manual* analysis thresholds in all weekday peak hours. Walk-only, walk trips to transit, and walk trips to public parking facilities would each have a different assignment pattern. Walk-only trips were assigned evenly through the local street network, while walk trips to transit and public parking facilities were assigned based on the transit and vehicle assignments, respectively. As shown in **Figure J-1,** the following pedestrian elements were selected for detailed analysis as they would experience an increase of 200 or more pedestrian trips in any one peak hour:

SIDEWALKS

- East sidewalk on Fleet Place between the Project Site and Willoughby Street
- East sidewalk on Fleet Place between the Project Site and Myrtle Avenue

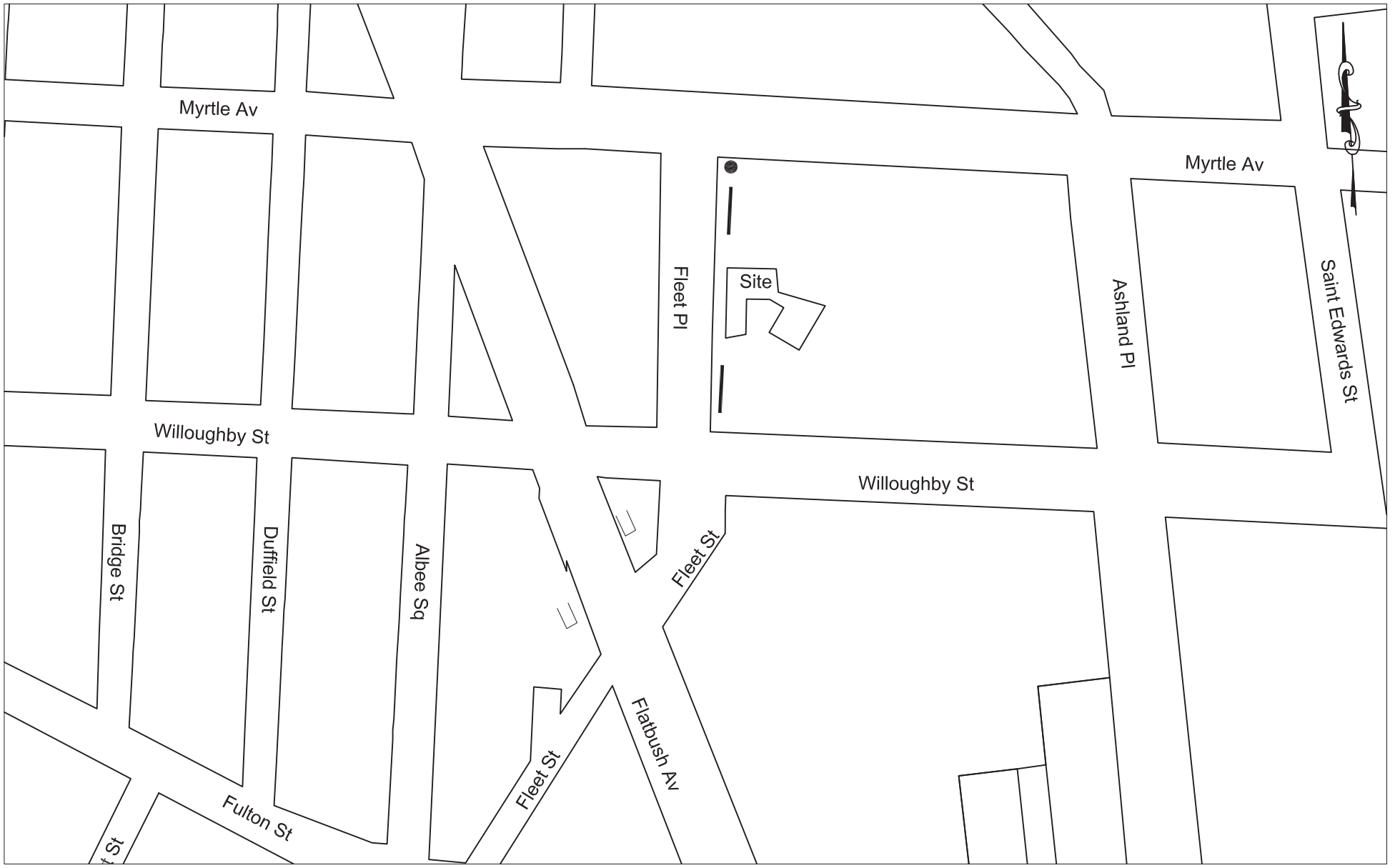
CORNER AREAS

- Myrtle Avenue and Fleet Place – southeast corner

At these locations, a detailed pedestrian analysis would be warranted in the weekday, AM, midday, and PM peak hours. As noted above in the Level 1 screening assessment, the proposed project is anticipated to generate less than 200 new pedestrian trips anticipated in the Saturday midday peak hour, and a detailed pedestrian analysis is therefore not warranted in this peak hour. It should be noted that while the 200-trip CEQR analysis threshold would also be exceeded at corner areas at the intersection of Fleet Place and Willoughby Street, this intersection is unsignalized and its crosswalks and corner areas can therefore not be analyzed per *CEQR Technical Manual* criteria.

Parking

According to the *CEQR Technical Manual*, a parking analysis is generally not required if a detailed traffic analysis is not warranted. As the proposed project does not warrant a detailed traffic analysis, as discussed above, a detailed parking analysis is not required.



Legend:

Sidewalk to be Analyzed

Corner Area to be Analyzed

101 Fleet Place

Figure J-1
Pedestrian Analysis Locations

VI. TRANSPORTATION ANALYSES METHODOLOGIES

Pedestrians

Analysis Methodology

Peak 15-minute pedestrian flow conditions 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 to LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners can be more complicated, as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these elements, a "time-space" analysis methodology is employed that 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-mintue peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table J-6** defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, using the *Highway Capacity Manual* methodology.

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

LOS	Crosswalk/Corner	Crosswalk/Corner Area Criteria (sf/ped)	Non-Platoon Sidewalk Criteria (sf/ped)	Platoon Sidewalk Criteria (sf/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

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

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

Significant Impact Criteria

Sidewalks

The *CEQR Technical Manual* impact criteria for a CBD location are used to identify significant adverse impacts due to the Proposed Actions. These criteria define a significant adverse sidewalk impact in a CBD area to have occurred under platoon conditions if the average pedestrian space under the No-Action condition is greater than 39.2 square feet per pedestrian (sf/ped) (just below the LOS C/D threshold), and the average pedestrian space under the With-Action condition is 31.5 sf/ped or less (mid-LOS D or worse). If the average pedestrian space under the With-Action condition is greater than 31.5 sf/ped (mid-LOS D or better), the impact should not be considered significant. If the No-Action pedestrian space is between 6.4 and 39.2 sf/ped, a reduction in pedestrian space under the With-Action condition should be considered significant based on the criteria presented in **Table J-7**, which shows a sliding scale that identifies the increase that is considered a significant impact for a given reduction in pedestrian space. If the decrease in average pedestrian space is less than the value shown in **Table J-7**, the impact should not be considered significant. If the average pedestrian space under the No-Action condition is less than 6.4 sf/ped, then a decrease in pedestrian space greater than or equal to 0.3 sf/ped should be considered significant.

Corner Areas and Crosswalks

For 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 21.5 sf/ped (just below the LOS C/D threshold) and, under the With-Action condition, the average pedestrian space decreases to 19.5 sf/ped or less (mid-LOS D or worse). If the pedestrian space under the With-Action condition is greater than 19.5 sf/ped (mid-LOS D or better), the impact should not be considered significant. If the average pedestrian space under the No-Action condition is between 5.1 and 21.5 sf/ped, a decrease in pedestrian space under the With-Action condition should be considered significant based on **Table J-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 J-8**, the impact is not considered significant. If the average pedestrian space under the No-Action condition is less than 5.1 sf/ped, then a decrease in pedestrian space greater than or equal to 0.2 sf/ped should be considered significant.

Pedestrian and Vehicular Safety Evaluation

Under *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 accident 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, accident 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, accident types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety should be identified and coordinated with DOT.

Table J-7: Significant Impact Criteria for Sidewalks with Platooned Flow in a CBD Location

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

Source: *CEQR Technical Manual*

Table J-8: Significant Impact Criteria for Corners and Crosswalks in a CBD Location

No-Action Condition Pedestrian Space (sf/ped)			With-Action Condition Pedestrian Space Reduction to be Considered a Significant Impact (sf/ped)
> 21.5			With Action Condition < 19.5
21.3	to	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	to	15.8	Reduction ≥ 1.4
14.1	to	14.9	Reduction ≥ 1.3
13.2	to	14	Reduction ≥ 1.2
12.3	to	13.1	Reduction ≥ 1.1
11.4	to	12.2	Reduction ≥ 1.0
10.5	to	11.3	Reduction ≥ 0.9
9.6	to	10.4	Reduction ≥ 0.8
8.7	to	9.5	Reduction ≥ 0.7
7.8	to	8.6	Reduction ≥ 0.6
6.9	to	7.7	Reduction ≥ 0.5
6	to	6.8	Reduction ≥ 0.4
5.1	to	5.9	Reduction ≥ 0.3
< 5.1			Reduction ≥ 0.2

Source: *CEQR Technical Manual*

IIV. DETAILED PEDESTRIAN ANALYSIS

Existing Conditions

As discussed previously in Section V, "Level 2 Screening Assessment," a total of four sidewalks, five corner areas, and one crosswalk where project-generated pedestrian trips are expected to exceed the 200-trip *CEQR Technical Manual* threshold in one or more peak hour have been selected for analysis. **Tables J-9** and **J-10** show the existing pedestrian space (in square feet per pedestrian) and LOS at analyzed sidewalks and corner areas, respectively. As shown in **Tables J-9** and **J-10**, all analyzed pedestrian elements are currently operating at LOS B or better.

Table J-9: Existing Conditions Sidewalk Analysis

Location	Effective Width (ft.)	Peak Hour Volumes			Average Pedestrian Space (sf/ped)			Platoon-Adjusted LOS		
		AM	MD	PM	AM	MD	PM	AM	MD	PM
East sidewalk on Fleet Place between the Project Site and Willoughby Street	4.7	372	195	421	165.8	320.5	135.8	B	B	B
East sidewalk on Fleet Place between the Project Site and Myrtle Avenue	6.0	372	195	421	211.8	409.3	173.5	B	B	B

Table J-10: Existing Conditions Corner Area Analysis

Intersection	Corner	Average Pedestrian Space (sf/ped)			LOS		
		AM	MD	PM	AM	MD	PM
Myrtle Avenue and Fleet Place	SE	207.5	258.6	164.7	A	A	A

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

In the future without the proposed actions, it is expected that transportation demands in the vicinity of the project area will increase due to background growth as well as development that would occur pursuant to existing zoning.

In order to forecast future pedestrian conditions without the proposed actions, pedestrian trips that are anticipated to be generated by several large development sites in proximity to the proposed development site were considered. The Future No-Action pedestrian volumes also reflect annual background growth rates of 0.25 percent per year for the 2018 through 2021 period. These background growth rates, recommended in the 2014 CEQR Technical Manual for projects in Downtown Brooklyn, are applied to account for smaller projects and as-of-right developments, and general increases in travel demand not attributable to specific development projects. Where new developments were found to generate relatively little new pedestrian flows through pedestrian analysis locations, demand from these sites was also assumed to be reflected as part of general background growth.

Tables J-11 and **J-12** show the forecasted No-Action average pedestrian space (in square feet per pedestrian) and LOS at analyzed sidewalks and corner areas, respectively. As shown in **Tables J-11 and J-12**, all analyzed pedestrian elements are expected to continue to operate at LOS B or better in the 2021 No-Action condition.

Table J-11: No-Action Conditions Sidewalk Analysis

Location	Effective Width (ft.)	Peak Hour Volumes			Average Pedestrian Space (sf/ped)			Platoon-Adjusted LOS		
		AM	MD	PM	AM	MD	PM	AM	MD	PM
East sidewalk on Fleet Place between the Project Site and Willoughby Street	4.7	459	466	474	134.2	133.8	120.5	B	B	B
East sidewalk on Fleet Place between the Project Site and Myrtle Avenue	6.0	459	466	474	171.5	171.0	154.0	B	B	B

Table J-12: No-Action Conditions Corner Area Analysis

Intersection	Corner	Average Pedestrian Space (sf/ped)			LOS		
		AM	MD	PM	AM	MD	PM
Myrtle Avenue and Fleet Place	SE	168.0	132.4	143.8	A	A	A

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

As discussed in Section IV, "Level 1 Screening Assessment," the Proposed Project is expected to generate 398, 503, and 464 pedestrian trips (bus only, bus-to-subway, trips to and from public parking facilities, and walk-only; in and out combined) in the weekday AM, midday, and PM midday peak hours, respectively.

Tables J-13 and **J-14** show the forecasted With-Action average pedestrian space (in square feet per pedestrian) and LOS at analyzed sidewalks and corner areas, respectively. As shown in **Tables J-13** and **J-14**, all analyzed pedestrian elements are expected to continue to operate at LOS C or better in the 2021 With-Action condition. Per 2014 *CEQR Technical Manual,* the proposed actions would therefore not result in significant adverse pedestrian impacts.

Table J-13: With-Action Conditions Sidewalk Analysis

Location	Effective Width (ft.)	Project Increment			Peak Hour Volumes			Average Pedestrian Space (sf/ped)			Platoon-Adjusted LOS		
		AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
East sidewalk on Fleet Place between the Project Site and Willoughby Street	4.7	286	260	333	745	726	807	82.3	85.5	70.3	C	C	C
East sidewalk on Fleet Place between the Project Site and Myrtle Avenue	6.0	112	243	131	571	709	605	137.8	112.1	120.5	B	B	B

Table J-14: With-Action Conditions Corner Area Analysis

Intersection	Corner	Average Pedestrian Space (sf/ped)			LOS		
		AM	MD	PM	AM	MD	PM
Myrtle Avenue and Fleet Place	SE	141.7	94.5	116.0	A	A	A

IX. VEHICULAR AND PEDESTRIAN SAFETY EVALUATION

Under *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 accident 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. (Reportable accidents are defined as those involving injuries, fatalities, and/or $1,000 or more in property damage.) Additional pedestrian safety measures are also evaluated in the area due to the addition of a new school.

Table J-15 shows summary accident data for the years 2014 through 2016 that were obtained from DOT. This is the most recent three-year period for which data is available. The table shows the total number of crashes each year and the number of crashes each year involving pedestrians and cyclists at study area intersections. As shown in **Table J-15**, one study area intersection was identified as a high crash location: the intersection of Myrtle Avenue, Ashland Place, and Navy Street. As presented in **Table J-15**,

this intersection experienced a total of eight combined pedestrian/bicycle injury crashes in 2014; four of the crashes involved pedestrians with four involving bicycles. More than half of these pedestrian/bicycle injury crashes that occurred in 2014 occurred during night, dawn, or dusk, when lighting conditions are the poorest. As the majority of project generated vehicle trips are anticipated to be through movements, the proposed actions are not expected to exacerbate safety concerns at this intersection.

Table J-15: Accident Data Summary 2014 - 2016

Intersection	Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicycle Injury Crashes			Total Crashes (Reportable + Non-Reportable)		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Flatbush Avenue & Fleet Street	0	0	0	0	0	0	0	0	0	2	2	4
Myrtle Avenue & Ashland Place	4	0	1	4	3	3	8*	3	4	9	10	5
Willoughby Street & Ashland Place	0	0	0	1	1	0	1	1	0	4	3	2
Willoughby Street & Fleet Place	0	0	0	0	0	0	0	0	0	0	1	1

Source: NYSDMV/DOT
Notes:
* Denotes High Crash Location.

ATTACHMENT K

AIR QUALITY

I. INTRODUCTION

The potential for air quality impacts from the proposed actions is examined in this attachment. Air quality impacts can be either direct or indirect. Direct impacts result from emissions generated by stationary sources at a development site, such as emissions from on-site fuel combustion for heat and hot water systems, or emissions from parking garage ventilation systems. Indirect impacts are caused by off-site emissions associated with a project, such as emissions from nearby existing stationary sources (impacts on the proposed project) or by emissions from on-road vehicle trips generated by the proposed project or other changes to future traffic conditions due to a project. As presented in **Attachment B, "Supplemental Screening,"** the proposed actions would not exceed the screening thresholds for mobile source or garage analyses, nor would the Alternate Residential RWCDS have the potential to result in significant adverse impacts on nearby existing/planned buildings of equal or greater height. However, as the Proposed Project would be shorter than a nearby taller existing building, the heating, ventilation, and air conditioning (HVAC) emissions from the Proposed Project has the potential to significantly impact an existing taller building, and a detailed HVAC analysis was therefore conducted. In addition, a review of area land uses and industrial permit identified one large existing emissions source located within 1,000 feet of the development site, thereby warranting a large emission source analysis. These analyses were conducted in accordance with *City Environmental Quality Review* (CEQR) *Technical Manual* methodology.

II. PRINCIPAL CONCLUSIONS

The analysis concludes that neither the Proposed Project nor the Alternate Residential RWCDS would result in significant adverse air quality impacts and would not be adversely affected by existing sources of air emissions in the surrounding area. The Proposed Project and the Alternate Residential RWCDS would not exceed the screening thresholds for mobile source or garage analyses, nor would the Alternate Residential RWCDS exceed the screening threshold for a detailed HVAC analysis. The result of the detailed HVAC analysis for the Proposed Project is that, with adherence to the minimum stack setback location and the exclusive use of natural gas (to be required pursuant to an (E) designation), no significant adverse air quality impacts from the HVAC emissions on existing land uses would occur. In addition, the result of a detailed air quality analysis showed that maximum estimated impacts from the identified nearby large emission source would be less than the CEQR significant impact thresholds and National Ambient Air Quality Standards (NAAQS) under future conditions with both the Proposed Project and the Alternate Residential RWCDS.

III. MOBILE SOURCE SCREENING

As stated in the *CEQR Technical Manual*, a project—whether site-specific or generic—may result in significant mobile source air quality impacts when they increase or cause a redistribution of traffic, create any other mobile sources of pollutants, or add new users near mobile sources. According to the *CEQR*

Technical Manual screening threshold criteria for the City, if 170 or more project-generated vehicles pass through an intersection in any given peak period for CO impact, or if a project would result in 12-23 heavy-duty diesel vehicle trips or equivalent PM emission, depending on road type for PM2.5 impact, there is the potential for mobile air quality impacts and a detailed analysis is required.

As outlined in Attachment B, "Supplemental Screening," The trip generation, travel demand forecast, and associated trip assignment (see Figures K-1a and K-1b) conducted for the Proposed Project indicates that the maximum number of project-generated vehicles through any intersection is 30 per hour, which is well below the CO screening threshold of 170. The Proposed Project would not result in a PM2.5 emission equivalent that exceeds the CEQR threshold of 12 to 23 heavy duty diesel vehicles (HDDV), depending on roadway type. Therefore, a detailed mobile source air quality analysis for PM2.5 and CO is not warranted.

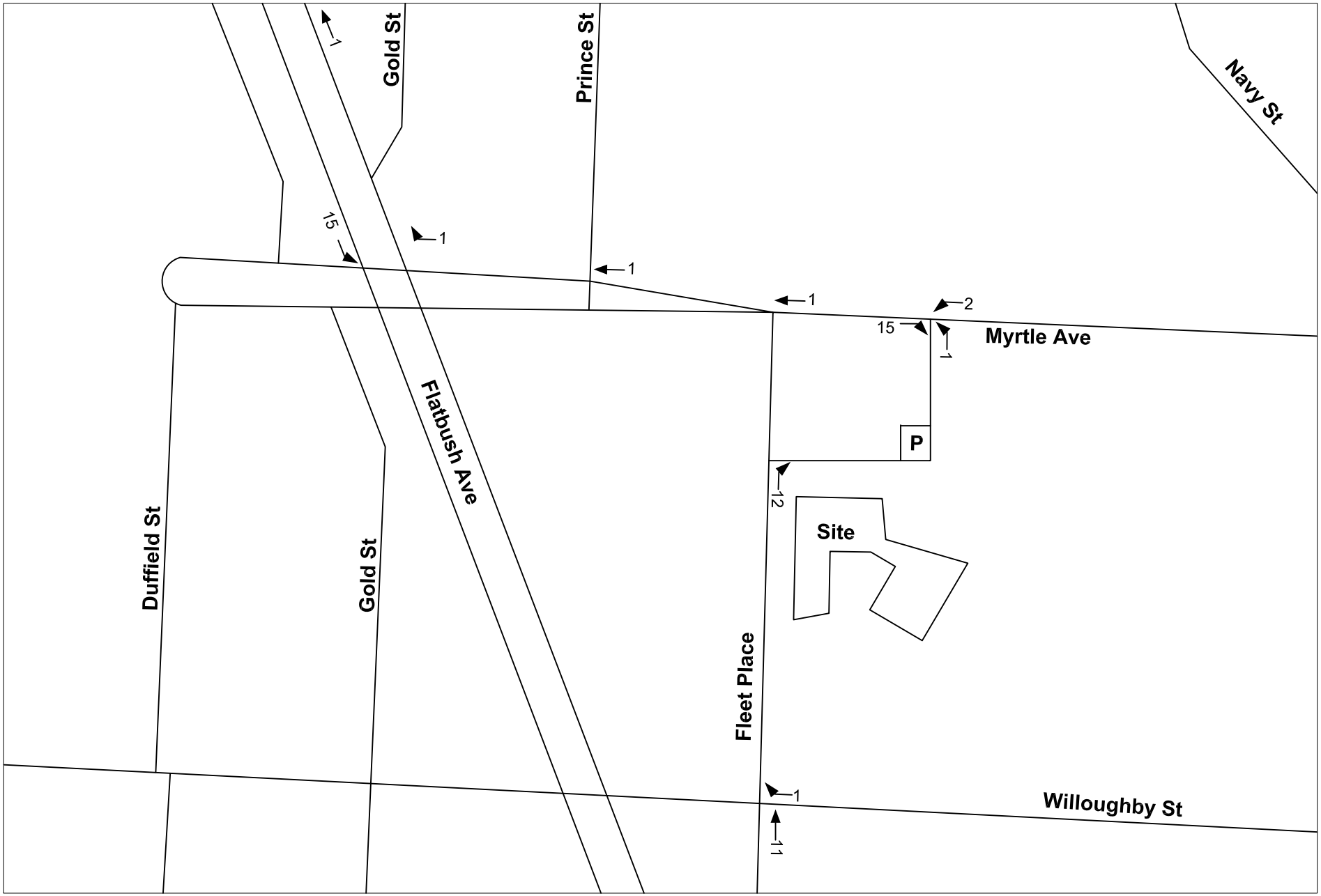
In addition, as stated in the *CEQR Technical Manual*, projects that would result in parking facilities may require a microscale air quality analysis. While the Proposed Project would not include accessory parking, the Alternate Residential RWCDS would include a 36-space below-grade accessory parking garage. As the proposed actions would not result in the development of a new parking facility with 90 or more spaces (the general threshold used to determine the need for a detailed parking air quality analysis), no further analysis is warranted, and no significant adverse air quality impacts would result.

IV. HVAC EMISSION AIR QUALITY ANALYSIS

As outlined in **Attachment A, "Project Description,"** two RWCDS were identified for the proposed actions: the first is the development of a commercial office building (the "Proposed Project") that would be 196 feet tall, and the second (the "Alternate Residential RWCDS") is the development of a residential building that would be 380 feet tall. Emissions from the HVAC systems of the proposed buildings could potentially impact nearby existing buildings that are taller than or as tall as the proposed buildings.

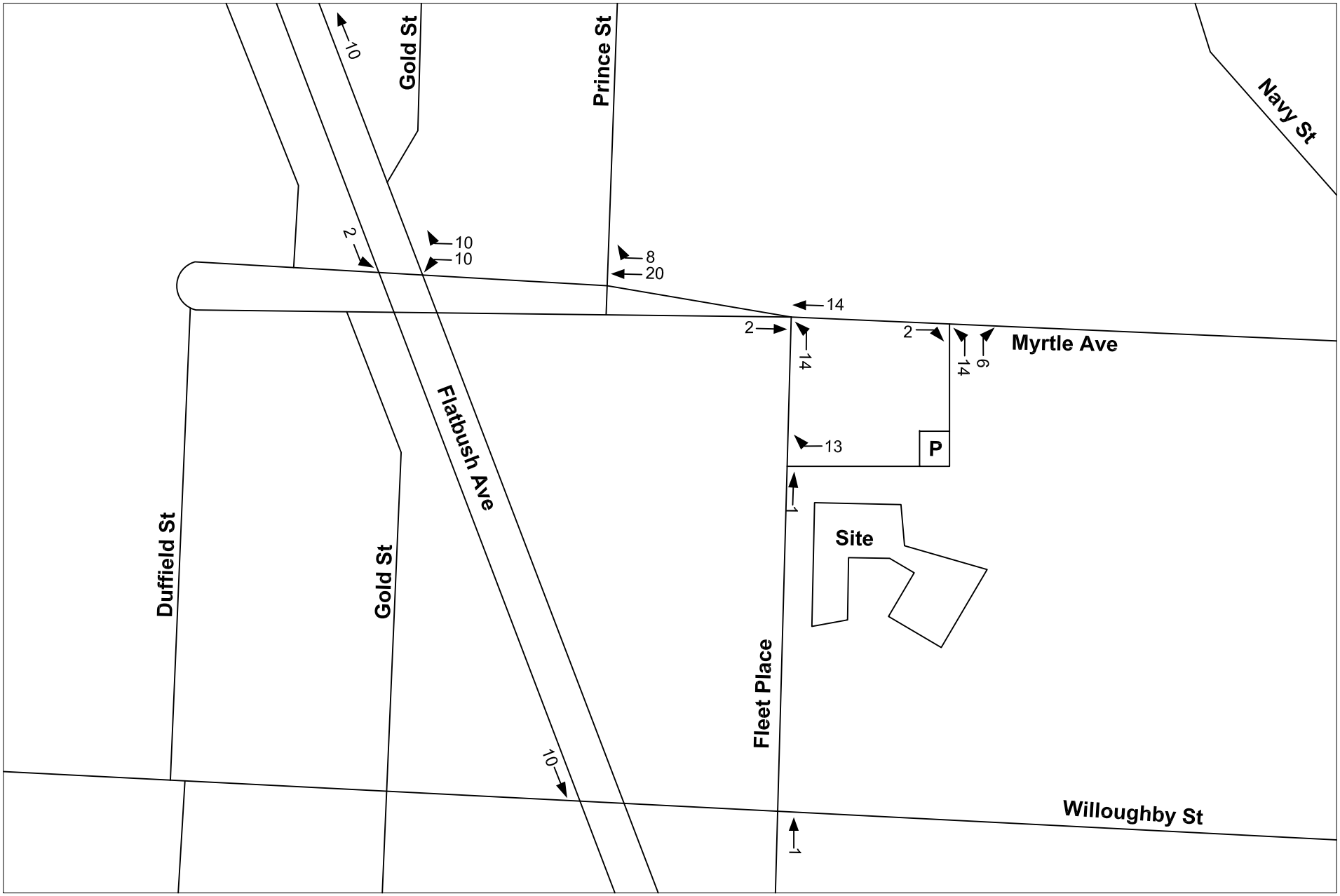
As presented in **Attachment B, "Supplemental Screening,"** the closest building of similar or greater height to the Alternate Residential RWCDS is the 399-foot-tall mixed-use residential/commercial building at 150 Myrtle Avenue, located approximately 240 feet from the development site. However, a screening analysis, which was conducted using Figure 17-3 of the *CEQR Technical Manual,* showed that potential impact of the HVAC emissions from the Alternate Residential RWCDS on this existing building would not be significant (see **Figure B-2** in **Attachment B, "Supplemental Screening"**) and no further analysis of the impacts of the Alternate Residential RWCDS's HVAC system is warranted.

The closest building of similar or greater height to the Proposed Project is a 351-foot-tall existing building located at 87 Fleet Place -- approximately 50 feet from the development site. While the building height under the Alternate Residential RWCDS would be taller than this existing building and a significant impact is therefore not anticipated under CEQR guidance, the Proposed Project would be shorter than the existing building and a screening analysis of this scenario was conducted. The result is that the Proposed Project failed the screening analysis, indicating that further analysis is required (see Figure B-1 in Attachment B, "Supplemental Screening"). As such, a detailed analysis of the commercial building's HVAC emissions on the existing building at 87 Fleet Place was conducted.



101 Fleet Place

Figure K-1a
AM Peak Hour Net Traffic Increment



101 Fleet Place

Figure K-1b
PM Peak Hour Net Traffic Increment

Applicable Air Quality Standards and Significant Impact Criteria

As required by the Clean Air Act (CAA), NAAQS have been established for the criteria pollutants by the 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 associated with the two pollutants associated with natural gas combustion – nitrogen dioxide (NO_2) and particulate matter smaller than 2.5 microns ($PM_{2.5}$). The standards considered are one-hour and annual NO_2 NAAQS and the 24-hour and annual $PM_{2.5}$ NAAQS.

In addition to the $PM_{2.5}$ NAAQS, the *CEQR Technical Manual* requires that projects subject to CEQR apply a $PM_{2.5}$ significant impact criteria (based on concentration increments) developed by the New York City Department of Environmental Protection (DEP) to determine whether potential adverse $PM_{2.5}$ impacts would be significant. If the estimated impacts of a proposed project are less than these increments, the impacts are not considered to be significant. This analysis addressed compliance of the potential impacts with the 24-hour and annual $PM_{2.5}$ CEQR significant 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 K-1**.

Table K-1: Applicable NAAQS and CEQR Threshold Values

Pollutant	Averaging Period	NAAQS	CEQR Thresholds
NO_2	One Hour	0.10 ppm (188 µg/m^3)	--
	Annual	.053 ppm (100 µg/m^3)	--
$PM_{2.5}$	24 Hour	35 µg/m^3	7.7
	Annual	12 µg/m^3	0.3

NO_2 NAAQS

Nitrogen oxide (NOx) emissions from gas combustion consist predominantly of nitric oxide (NO) at the source. The NOx in these emissions are then gradually converted to NO_2, 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 one-hour NO_2 NAAQS standard of 0.100 ppm (188 µg/m^3) is the three-year average of the 98th percentile of daily maximum one-hour average concentrations in a year. For determining compliance with this standard, the EPA has developed a modeling approach for estimating one-hour NO_2 concentrations that is comprised of three tiers: Tier 1, the most conservative approach, assumes a full (100 percent) conversion of NOx to NO_2; Tier 2 applies a conservative ambient NOx/NO_2 ratio of 80 percent to the NOx estimated concentrations; and Tier 3, which is the most precise approach, employs AERMOD's Plume Volume Molar Ratio Method (PVMRM) module. The PVMRM accounts for the chemical transformation of

NO emitted from the stack to NO_2 within the source plume using hourly ozone background concentrations. When Tier 3 is utilized, AERMOD generates the eighth highest daily maximum one-hour NO_2 concentrations or total one-hour NO_2 concentrations (if hourly NO_2 background concentrations are added within the model) and averages these values over the number of years modeled. Total estimated concentrations are generated in the statistical form of the one-hour NO_2 NAAQS format and can be directly compared with the one-hour NO_2 NAAQS standard. Based on DEP recommendations, the in-stack NOx/NO_2 ratio for PVMRM module of 0.5 and single missing ozone background value of 0.04 ppm were applied.

Based on New York City Department of Planning (DCP) guidance, Tier 1, as the most conservative approach, should initially be applied as a preliminary screening tool to determine whether violations of the NAAQS are likely to occur. If exceedances of the one-hour NO_2 NAAQS are estimated, the less conservative (but more accurate) Tier 3 approach should be applied.

The annual NO_2 standard is 0.053 parts per million (ppm or 100 $\mu g/m^3$). To estimate annual NO_2 impacts, a NO_2 to NOx ratio of 0.75 percent, which is recommended by the DEP for an annual NO_2 analysis, was applied.

$PM_{2.5}$ CEQR Significant Impact Criteria

CEQR Technical Manual guidance includes the following criteria for evaluating significant adverse $PM_{2.5}$ incremental impacts:

> *Predicted 24-hour maximum $PM_{2.5}$ concentration increase of more than half the difference between the 24-hour $PM_{2.5}$ background concentration and the 24-hour standard.*

A 24-hour $PM_{2.5}$ background concentration of 19.6 $\mu g/m^3$ was obtained from Brooklyn JHS-126 monitoring station as the average of the 98th percentile for the latest three years of available monitoring data collected by the NYSDEC for 2015-2017 (2015=25.2 $\mu g/m^3$; 2016=16.4 $\mu g/m^3$; 2017=17.2 $\mu g/m^3$). As the applicable background value is 19.6 $\mu g/m^3$, half of the difference between the 24-hour $PM_{2.5}$ NAAQS and this background value is 7.7 $\mu g/m^3$. As such, a significant impact criterion of 7.7 $\mu g/m^3$ was used for determining whether the potential 24-hour $PM_{2.5}$ impacts are considered to be significant.

For an annual average adverse $PM_{2.5}$ incremental impact, according to *CEQR* guidance:

> *Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 $\mu g/m^3$ at any receptor location for stationary sources.*

The above 24-hour and annual significant impact criteria were used to evaluate the significance of predicted $PM_{2.5}$ impacts.

Dispersion Analysis

A detailed dispersion modeling analysis was conducted using the latest version of the EPA's AERMOD dispersion model 8.1 (EPA version 18081). In accordance with *CEQR Technical Manual* guidance, this analysis was conducted assuming stack tip downwash, urban dispersion surface roughness length and elimination of calms. AERMOD's PVMRM module was utilized for the one-hour NO_2 analysis to account

for NOx to NO_2 conversion when applicable. Based on DEP recommendations, the in-stack NOx/NO_2 ratio for PVMRM module of 0.5 and the single missing ozone background value of 0.04 ppm were applied. Analyses were conducted with and without the effects of wind flow around the proposed buildings (i.e., with and without downwash) using AERMOD BPIP program algorithm.

Site Geometry

A digital base map for the AERMOD modeling was developed using the DCP PLUTO shapefile for the development site and the Proposed Project's building footprint. A map image for the development site was downloaded via the MapQuest server and used to delineate the shape of the Proposed Project together with the building's layout.

Emissions

Emission rates of the Proposed Project were estimated as follows:

- As the proposed building would be heated by natural gas, emission rates of NOx and $PM_{2.5}$ were calculated based on annual natural gas usage corresponding to the gsf of each building and EPA AP-42 emission factors for firing natural gas combustion in small boilers less than 100 million British Thermal Units per hour (MMBtu/hr);
- $PM_{2.5}$ emissions from natural gas combustion accounted for both filterable and condensable particulate matter;
- Short-term NO_2 and $PM_{2.5}$ emission rates were estimated by accounting for seasonal variation in heat and hot water demand; and
- The natural gas fuel usage factor 59.1 cubic foot per square foot per year (scf/sf/year) was obtained from CEQR Table US1, Total Energy Consumption, Expenditures and Intensities, 2005, Part I: Housing Unit Characteristics and Energy Use Indicators for New York using conservative factor for residential uses.

Stack diameters and exit velocities were estimated based on values obtained from DEP's "CA Permit" database for the corresponding boiler size (i.e., rated heat input or MMBtus per hour). Boiler sizes were estimated based on assumption that all fuel would be consumed during the 100-days (or 2,400-hour) heating season. All stack exit temperatures were assumed to be 300°F (423°K), which is appropriate for building boilers.

Table K-2 provides pollutant emission rates from natural gas combustion in the boilers that were used in the dispersion analysis.

Table K-2: Estimated Pollutant Emission Rates for the Proposed Project

Building Height (Feet)	Stack Height (Feet)	Total Floor Area (gsf)	$PM_{2.5}$ Emission Rate[1]		NO_2 Emission Rate[2]	
			g/sec	g/sec	g/sec	g/sec
			24-hour	Annual	One-hour	Annual
196	199	209,354	4.94E-03	1.35E-03	6.50E-02	1.78E-02

Notes:

[1] $PM_{2.5}$ emission factor for natural gas combustion of 7.6 lb/10^6 cubic feet included filterable and condensable particulate matter (Filterable $PM_{2.5}$ =1.9 lb/10^6 cubic feet and condensable $PM_{2.5}$=5.7 lb/10^6 cubic feet (AP-42, Table 1.4-2).
[2] NOx emission factor for natural gas of 100 lb/10^6 cubic feet for uncontrolled boilers with <100MMBtu/hr (AP-42, Table 1.4-1).

Meteorological Data

All analyses were conducted using the latest five consecutive years (2013-2017) of meteorological data. Surface data was obtained from LaGuardia Airport and upper air data was obtained from Brookhaven station, New York. The data were processed by Trinity Consultants, Inc. using current EPA AERMET and EPA procedures. These meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the five-year period.

The five years of meteorological data were combined into a single multiyear file to conduct 24-hour $PM_{2.5}$ and one-hour NO_2 analyses. The $PM_{2.5}$ special procedure, which is incorporated into AERMOD, calculates concentrations at each receptor for each year modeled, averages those concentrations across the number of years of data, and then selects the highest values across all receptors of the five-year averaged highest values.

Background Concentrations

Because the nearest monitoring station at Brooklyn JHS-126 does not collect hourly ozone and NO_2 background data, hourly NO_2 and hourly ozone background concentrations were developed from data collected at the closest monitoring station (Queens College #2) for three consecutive years (2015-2017) and compiled into AERMOD's required hourly emission (NO_2) and concentration (ozone) data format.

The maximum one-hour NO_2 background concentration from the Queens College #2 monitoring station is 59.7 parts per billion (ppb, or 112.2 µg/m^3), which is the three-year average of the 98th percentile of daily maximum one-hour concentrations. The annual NO_2 background concentration of 16.07 ppb or 30.3 µg/m^3 is the maximum annual average for 2015 through 2017.

The maximum annual $PM_{2.5}$ background concentration obtained from Brooklyn JHS-126 monitoring station for three years (2015-2017) is 8.2 µg/m^3.

Receptors

Receptors were placed at all floor levels on the existing 87 Fleet Place building, starting at six feet above the ground and extending up to the level of the upper windows, which was assumed to be five feet below roof level (i.e., at 346 feet). To assure that maximum impacts are estimated, about 3,000 receptors were placed on the existing building.

Stack Location

The stack on the Proposed Project's roof was initially placed ten feet from the Fleet Place lot line, which is the minimum distance required by the New York City Building Code. If exceedances of the $PM_{2.5}$ significant impact criteria or one-hour NO_2 impact were predicted, setbacks from the lot line were

increased, in ten-foot increments, until the threshold distance at which the Proposed Project passed the analysis was determined.

Summary of Modeling Inputs

All modeling assumptions are provided in **Table K-3.**

Table K-3: Modeling Parameters

Model	AERMOD (EPA Version 18081)
Source Type	Point
Emission Sources and Receptor Coordinates	UTM NAD83 Datum and UTM Zone 18
Downwash Program	Building Profile Input Program (BPIP)
Surface Characteristics	Urban Area Option
Urban Surface Roughness Length	1
Population of the area (Brooklyn)	2.65 million (2017) with population density more than 750
	Preprocessed by the AERMET meteorological preprocessor
Surface Meteorological Data	LaGuardia 2013-2017
Profile Meteorological Data	Brookhaven Station 2013-2017
$PM_{2.5}$ and One-hour NO_2 Analysis	Special procedure incorporated into AERMOD where model calculates concentration at each receptor for each year modeled, averages those concentrations across the number of years of data, and then selects the highest across all receptors of the N-year averaged highest values
$PM_{2.5}$ and One-hour NO_2 Background Concentration	Brooklyn JHS-126 and Queens College 2 monitoring station data for 2015-2017

Results

NO_2 Results

As noted above, the stack was initially placed ten feet from Fleet Place (i.e., at the minimum distance from the existing 87 Fleet Place building). However, at this distance, the result of both the Tier 1 or Tier 3 analysis indicated a potential exceedance of the one-hour NO_2 NAAQS. Therefore, the stack was set back further from the Fleet Place and a new Tier 3 analysis was conducted.

With a Tier 3 analysis and a stack setback approximately 35 feet from Fleet Place, the total maximum estimated one-hour NO_2 concentration, with added background concentration internally, would be 162.4 $\mu g/m^3$, which is less than the one-hour NO_2 NAAQS of 188 $\mu g/m^3$. The total maximum annual NO_2 concentration at this stack location, including a background value of 30.3 $\mu g/m^3$, would also be less than annual NO_2 NAAQS of 100 ug/m^3.

$PM_{2.5}$ Results

For the $PM_{2.5}$ analysis, the Proposed Project's stack was setback to the same location that was determined based on the one-hour NO_2 analysis (e.g., 35 feet from the Fleet Place). At this location, the maximum estimated concentrations were as follows:

- 24-hour $PM_{2.5}$ impact: 2.47 μg/m^3, which is less than the CEQR significant impact increment of 7.7 μg/m^3;
- Five-year average of 24-hour $PM_{2.5}$ total concentrations: 21.3 μg/m^3 (including a background value of 19.6 μg/m^3), which is less than the 24-hour $PM_{2.5}$ NAAQS of 35 μg/m^3;
- Annual five-year average $PM_{2.5}$ impact: 0.04 μg/m^3, which is less than the CEQR annual incremental threshold of 0.3 μg/m^3; and
- Five-year average annual $PM_{2.5}$ total concentration: 8.2 μg/m^3 (including a background value of 8.2 μg/m^3), which is less than the annual $PM_{2.5}$ NAAQS of 12 μg/m^3.

A summary of all results for all averaging time periods and conditions, with and without downwash (i.e., wind flow around the buildings) effects, are presented in **Table K-4**.

Table K-4: Summary of Results (μg/m^3)

Pollutant	Modeled Concentrations[1] (μg/m^3)	Background (μg/m^3)	Total Concentration (μg/m^3)	Evaluation Criteria (μg/m^3)
24-hr $PM_{2.5}$	0.53/2.47*	N/A	2.47	7.7 (*de minimis*)
	0.37/1.65	19.6	21.3	35 (NAAQS)
Annual $PM_{2.5}$	<0.1	N/A	<0.1	0.3 (*de minimis*)
	0.04	8.2	8.2	12 (NAAQS)
One-hour NO_2	162.4/162.4 [(2)]	-	162.4	188 (NAQQS)
Annual NO_2	0.47/0.39	30.3	30.8	100 (NAAQS)

Notes:
[1] Modeled concentrations are shown with and without downwash effects
[2] Tier 3 analysis with background concentration added internally by the model

Conclusion

The result of the detailed HVAC analysis is that, with adherence to the minimum stack setback location and the exclusive use of natural gas (to be required pursuant to an (E) designation, as outlined below), no significant adverse air quality impacts from the HVAC emissions of the Proposed Project on existing land uses would occur.

E-Designations

Due to its height (380 feet) and distance to any nearby taller buildings, the Alternate Residential RWCDS does not require an (E) Designation. However, in order to ensure that there would be no significant air quality impacts of the HVAC emissions from the 196-foot-tall Proposed Project, any future construction on applicant-owned development site (Block 2601, Lot 100) would be required to comply with the following (E) designation:

> **Block 2601, Lot 100: Any new commercial/residential development or enlargement on the above-referenced property must use natural gas as the type of fuel for heating, ventilating, and air conditioning and hot water system (HVAC) and ensure that - for commercial use, the HVAC stack is located at the highest tier, at least 199 feet above the grade, and at least 35 feet from the west lot line facing Fleet Place; for residential use, the HVAC stack is located at the highest**

tier, at least 402 feet above the grade - to avoid any potential significant adverse air quality impacts.

V. LARGE EMISSION SOURCE AIR QUALITY ANALYSIS

A review of the land uses near the development site was conducted in accordance with *CEQR Technical Manual* guidance using the New York City Open Accessible Space Information System interactive mapping software (NYC OASIS) and Google aerial images. This review found a large existing emission source located at 121 Dekalb Avenue, which is within 1,000 feet of the development site. Using the New York State Department of Environmental Conservation (NYSDEC) Title V and State Facility permit database and a "Search DEC Permit Applications Data" application, it was determined that this source is the Brooklyn Hospital Center (BHC), which has an State Air Facility permit that defines the facility as a large (by CEQR definition) combustion emission source. Therefore, an analysis was conducted to estimate whether the potential impact of these emissions on the Proposed Project and/or the Alternate Residential RWCDS would be significant.

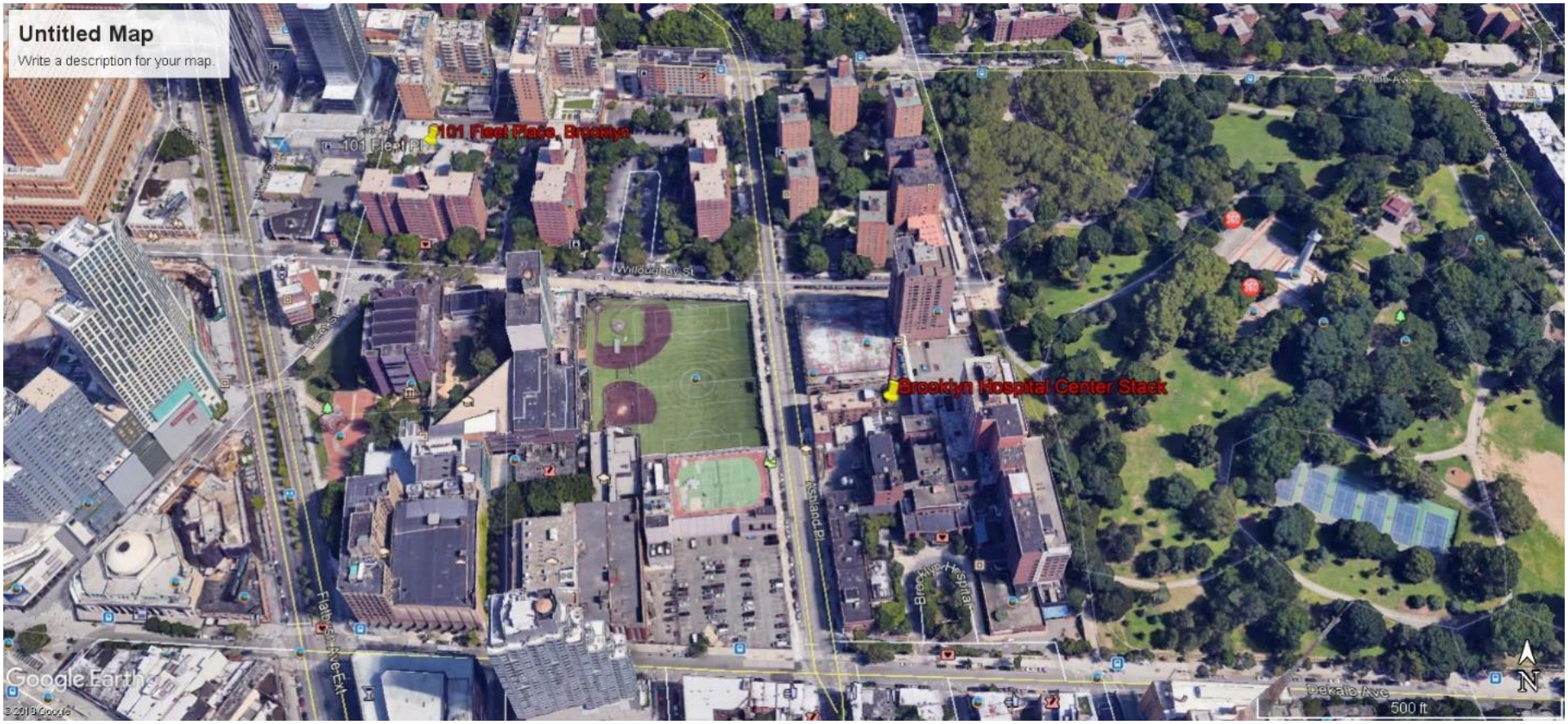
BHC Combustion Equipment

The BHC heating plant includes four duel-fuel (natural gas and No. 2 fuel oil) fired boilers, three of which are rated at 32 million British Thermal Units per hour (MMBtu/hr) each and one of which is rated at 26.1 MMBtu/hr. These units are utilized for the facility's heating and hot water supply purposes. The facility also operates three emergency generator that are exempt from permitting requirements. BHC is a Large Air State Facility emission source with a permit (NYSDEC permit ID # 2-6103-00406/00002) effective through September 18, 2023.

BHC Emission Source

The BHC emission stack location is defined in the permit in Universal Mercaptan System (UTM) coordinates. However, coordinates (as listed in the permit) are expressed roughly in kilometers (km) rather than meters (586.2 km and 4504.7 km) and, therefore, could not be used to locate the stack with the precision necessary for a detailed modeling analysis. NYC OASIS map images and Google aerial photos of the BHC campus buildings reveal one stand-alone stack. The relationship between this stack and the development site is shown on **Figure K-2**. Using Google coordinates for this stack, its location was approximated on a shapefile used as a base map for AERMOD.

According to the BHC permit, boiler emissions exhaust through a common 192-foot tall, 72-inch diameter, stack. The permit does not indicate exit temperatures and velocities. As such, an exhaust temperature of 300 degrees Fahrenheit (deg-F; 422 degrees Kelvin [deg-K]), which is applicable for boilers, was used for this analysis. An exit velocity of 21 feet per second, which is applicable for boilers greater than 15 MMBtu/hr, was also applied.



101 Fleet Place EAS

Figure K-2
Development Site and BHC Stack Location

Regulated Pollutants

The BHC is dual-fuel facility that uses natural gas as a primary fuel and ultra-low sulfur diesel (USLD) fuel oil No. 2 with a sulfur content of 15 parts per million (ppm; 0.0015 percent). By regulating the quantity of each fuel fired at the facility, its potential to emit (PTE) nitrogen oxide (NOx) does not exceed 49,800 pounds per year (24.9 tons/year). The State Facility permit regulates only one pollutant – oxides of nitrogen (NOx) (CAS #NY210-00-0 or 10102-44-0 in the current DAR-1).

Relevant Air Pollutants

The U.S. Environmental Protection Agency (EPA) has identified several criteria pollutants as being of concern nationwide. Therefore, three other criteria pollutants – $PM_{2.5}$ (CAS # NY075-02-5), PM_{10} (CAS #NY075-00-5), and sulfur dioxide (SO_2) (CAS# 7446-09-5) – were added to NOx for consideration, and these four pollutants, which are associated with natural gas and fuel oil No. 2 combustion, were considered in this analysis.

Applicable Air Quality Standards and Significant Impact Criteria

As required by the Clean Air Act (CAA), NAAQS have been established for the criteria pollutants by the EPA. The NAAQS are concentrations set for each of the criteria pollutants in order to protect public health and the nation's welfare, and New York has adopted the NAAQS as the State ambient air quality standards. This analysis addressed compliance of the potential impacts with the 24-hour and annual $PM_{2.5}$, one-hour and annual NO_2, one-hour SO_2, and 24-hour PM_{10} NAAQS.

In addition to the $PM_{2.5}$ NAAQS, the *CEQR Technical Manual* requires that projects subject to CEQR apply a $PM_{2.5}$ significant impact criteria (based on concentration increments) developed by the New York City Department of Environmental Protection (DEP) to determine whether potential adverse $PM_{2.5}$ impacts would be significant. If the estimated impacts of a proposed project are less than these increments, the impacts are not considered to be significant. This analysis addressed compliance of the potential impacts with the 24-hour and the 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 K-5**.

Table K-5: Applicable NAAQS and CEQR Threshold Values

Pollutant	Averaging Period	NAAQS	Applicable CEQR Threshold
NO_2	One Hour	0.10 ppm (188 µg/m^3)	--
	Annual	.053 ppm (100 µg/m^3)	--
$PM_{2.5}$	24 Hour	35 µg/m^3	7.7
	Annual	12 µg/m^3	0.3
PM_{10}	24 Hour	150 µg/m^3	--
SO_2	One Hour	75 ppb (196 µg/m^3)	--

The 24-hour and annual significant impact criteria for $PM_{2.5}$ described in the HVAC analysis were used to evaluate the significance of predicted $PM_{2.5}$ impacts on the Proposed Project and Alternate Residential RWCDS.

Dispersion Analysis

The same dispersion modeling analysis with the same dispersion options that was conducted to estimate impacts from the HVAC system emissions was conducted to estimate the impact of the BHC emissions.

BHC Geometry

Geometry of the BHC was developed using the NYC Open Data digital software buildings footprints.

Meteorological Data

The same latest five consecutive years of meteorological data (2013-2017) as in the HVAC analysis were used.

Background Concentrations

The same background data for all pollutants that were used in the HVAC analysis were utilized in this analysis.

In addition to the background $PM_{2.5}$ and NO_2 values, one-hour SO_2 and 24-hour PM_{10} background concentrations were obtained from Queens College #2 monitoring station for the years 2015 through 2017. For one-hour SO_2, the background value is 6.93 ppb or 18.1 $\mu g/m^3$, which is the 99th percentile of daily maximum one-hour concentrations and for 24-hour PM_{10}, the value is 35 $\mu g/m^3$.

Receptor Locations

Receptors were placed around all faces of each of the RWCDS buildings in ten-foot increments on all floor levels to cover all exterior spaces -- starting at ground level (six feet) and extending up to 191 feet for the Proposed Project (i.e., height of the upper windows) and 375 feet for the Alternate Residential RWCDS (i.e., height of the upper windows), assuming that the upper windows of each building would be five feet below roof level. To assure that maximum impacts are estimated, more than 1,400 receptors were considered for the Proposed Project and more than 2,700 receptors were considered for the Alternate Residential RWCDS.

Emission Rates

Emission rates for all pollutants for boiler firing both natural gas and fuel oil were estimated using EPA AP-42 emission factors and the total heat input of all BHC boilers combined. The emission factors were obtained as follows:

Natural Gas (for Boilers Firing Natural Gas)

- NOx – 100 pounds per million square cubic feet (lb/mmscf) or 0.1 lb/MMBtu;
- PM2.5 – 7.6 lb/mmscf (7.6E-03 lb/MMBtu), which includes condensable and filterable particles (AP-42, Table 1.4-2);
- PM_{10} – 7.6 lb/mmscf (7.6E-03 lb/MMBtu), which includes condensable and filterable particles (AP-42, Table 1.4-2); and
- SO_2 – 0.6 lb/mmscf (6.0E-04 lb/MMBtu).

Fuel Oil Ultra- Low Sulfur No.2 Diesel Fuel (for Boilers Firing ULSD Fuel Oil)

- NOx – 24 lb/10^3 gal (1.71E-01 lb/MMBtu), AP-42, Table 1.3-1;
- $PM_{2.5}$ – 2.13 lb/10^3 gal (1.52E-02 lb/MMBtu), which includes 1.3 lb/10^3 gal (9.2E-03 lb/MMBtu) 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 0.83 lb/10^3 gal (5.9E-03 lb/MMBtu) for particles with 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;
- PM_{10} – 2.38 lb/10^3 gal (1.70E-02 lb/MMBtu), which includes emission factors for filterable particles (1.08 lb/10^3 gal, Table 1.3-7) and condensable particles of 1.3 lb/10^3 gal (AP-42, Table 1.3-2); and
- SO_2 – 0.213 lb/10^3 gal (1.52E-03 lb/MMBtu) (estimated from equation SO_2=142S where S = sulfur content in fuel oil (0.0015%), from "Criteria Pollutant Emission Factors for Fuel Oil Combustion" AP-42, Table 1.3-1.

Estimated short-term and annual emission rates for all pollutants for natural gas and fuel oil are provided in **Tables K-6** and **K-7,** respectively.

Table K-6: Estimated Pollutant Emission Rates with Natural Gas Under Air State Facility Permit #2-6103-00406

Pollutant Emission Factors	Number of Units	Total Heat Input	Short-term Emission Rates		Annual Emission Rates	
lb/MMBtu		MMBtu/hr	lb/hr	g/sec	lb/year	g/sec
Natural Gas			$PM_{2.5}$ Emission Rates			
7.60E-03	4	122.1	9.28E-01	1.17E-01	3.74E+03	5.38E-02
			PM_{10} Emission Rates			
7.60E-03	4	122.1	9.28E-01	1.17E-01	3.74E+03	5.38E-02
			NOx Emission Rates			
1.00E-01	4	122.1	1.22E+01	1.54E+00	4.92E+04	7.08E-01
			SO_2 Emission Rates			
6.00E-04	4	122.1	7.33E-02	9.23E-03	2.95E+02	4.25E-03

Table K-7: Estimated Pollutant Emission Rates with Fuel Oil No. 2 ULSD Under Air State Facility Permit #2-6103-00406

Pollutant Emission Factors	Number of Units	Total Heat Input	Short-term Emission Rates		Annual Emission Rates	
lb/MMBtu		MMBtu/hr	lb/hr	g/sec	lb/year	g/sec
Fuel Oil No. 2 ULSD			$PM_{2.5}$ Emission Rates			

1.52E-02	4	122.1	1.86E+00	2.34E-01	4.46E+03	6.41E-02
			PM_{10} Emission Rates			
1.70E-02	4	122.1	2.08E+00	2.62E-01	7.06E+03	1.02E-01
			NOx Emission Rates			
1.71E-01	4	122.1	2.09E+01	2.64E+00	5.02E+04	7.23E-01
			SO_2 Emission Rates			
1.52E-03	4	122.1	1.86E-01	2.34E-02	4.46E+02	6.41E-03

Reasonable Worst-Case Emission Rates

While the hospital permit states that facility is dual-fuel system, it does not provide information as to whether the heating systems operate concurrently using both types of fuel or whether fuel oil is used only as a backup fuel. However, the permit states that the annual emissions should not exceed the established facility limit of NOx emissions of 49,800 pounds (24.9 tons). In order to conservatively estimate worst-case short-term impacts, short-term emission rates for natural gas or fuel oil were estimated assuming 100 percent boiler load, with the annual scenario assuming that the boilers would use fuel oil only during the three cold months period (i.e., for 2,400 days) while the boilers firing natural gas would operate the whole year to provide heat and hot water on a continuing basis under a 46 percent load. This schedule satisfies the requirement for each type of fuel that the annual NOx emission limit of 49,800 lb/year would not be exceeded.

The modeling parameters used in the analysis are the same as those provided in **Table K-3** of the HVAC analysis.

Results

Potential impacts of the $PM_{2.5}$, $PM_{10,}$ NO_2, and $SO_{2,}$ emissions from BHC operations on the Proposed Project and the Alternate Residential RWCDS were estimated with natural gas and fuel oil, and the results were compared with the 24-hour and annual $PM_{2.5}$ CEQR significant impact criteria as well as the one-hour and annual NO_2, one-hour SO_2, and 24-hour PM_{10} NAAQS, as follows:

Natural Gas

$PM_{2.5}$

The results of the $PM_{2.5}$ analysis of the BHC HVAC system burning natural gas show that, for the Proposed Project RWCDS, the maximum estimated 24-hour $PM_{2.5}$ impact would be 0.63 µg/m^3 and for Alternate Residential RWCDS, the maximum estimated 24-hour impact would be 1.64 µg/m^3, which are both less than the 7.7 µg/m^3 *CEQR* significant impact criterion. The maximum estimated annual $PM_{2.5}$ impact for both the Proposed Project and the Alternate Residential RWCDS is less than 0.1 µg/m^3, which is less than the 0.3 µg/m^3 CEQR annual significant impact criterion. Therefore, $PM_{2.5}$ emissions from the BHC burning natural gas would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

24-Hour PM_{10}

The results of the 24-hour PM_{10} analysis of the BHC HVAC system burning natural gas show that for both the Proposed Project and the Alternate Residential RWCDS, the maximum 24-hour impact would be 1.59 $\mu g/m^3$ and the maximum total 24-hour PM_{10} concentrations, including a background value of 35 $\mu g/m^3$, would be 36.6 $\mu g/m^3$, which are less than the 24-hour PM_{10} NAAQS of 150 $\mu g/m^3$. Therefore, the 24-hour PM_{10} emissions from the BHC HVAC system burning natural gas would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

One-Hour NO_2

The Tier 1 NO_2 analysis was sufficient to demonstrate compliance with the one-hour NO_2 NAAQS from the BHC HVAC system burning natural gas for the Proposed Project but not sufficient enough to demonstrate compliance for the Alternate Residential RWCDS, and a Tier 3 analysis was conducted for this alternative.

For the Proposed Project and Alternate Residential RWCD, the maximum one-hour concentrations were estimated to be 131.8 $\mu g/m^3$ and 130.4 $\mu g/m^3$ (with Tier 3), respectively. Both concentrations are less than one-hour NO_2 NAAQS. The total average annual NO_2 total concentration for the Proposed Project and Alternate Residential RWCDS would be 30.4 $\mu g/m^3$ and 30.6 $\mu g/m^3$, respectively, which are less than the annual NO_2 NAAQS of 100 $\mu g/m^3$. Therefore, one-hour and annual NO_2 emissions from the BHC HVAC system burning natural gas would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

One-Hour SO_2

The results of the one-hour SO_2 analysis for the BHC HVAC system, burning natural gas, show that the maximum one-hour SO_2 impact is estimated to be 0.13 $\mu g/m^3$ for the Proposed Project and 0.11 $\mu g/m^3$ for the Alternate Residential RWCDS. The total fourth highest daily one-hour averaged SO_2 concentration, including background value, is estimated to be 18.2 $\mu g/m^3$ for the Proposed Project and 18.6 $\mu g/m^3$ for the Alternate Residential RWCDS. Both concentrations are less than the one-hour SO_2 NAAQS of 196 $\mu g/m^3$. Therefore, one-hour SO_2 emissions from the BHC HVAC system burning natural gas would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

Fuel Oil

$PM_{2.5}$

The result of the $PM_{2.5}$ analysis with ULSD fuel oil show that, for the Proposed Project and the Alternate Residential RWCDS, the maximum estimated 24-hour $PM_{2.5}$ impact would be 1.04 $\mu g/m^3$ and 2.69 $\mu g/m^3$, respectively. Both values are less than the 7.7 $\mu g/m^3$ CEQR significant impact criterion. The maximum estimated annual $PM_{2.5}$ impact for both the Proposed Project and the Alternate Residential RWCDS would be less than 0.1 $\mu g/m^3$, which is below the 0.3 $\mu g/m^3$ CEQR annual significant impact criterion. Therefore, PM_{25} emissions from the BHC HVAC system burning fuel oil would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

24-Hour PM_{10}

The results of the 24-hour PM_{10} analysis from the BHC HVAC system burning fuel oil show that for both the Proposed Project and the Alternate Residential RWCDS, the maximum 24-hour PM_{10} impact would be 3.56 µg/m^3 and the maximum total 24-hour PM_{10} concentrations, including a background value of 35 µg/m^3, would be 38.9 µg/m^3, which are less than the 24-hour PM_{10} NAAQS of 150 µg/m^3. Therefore, the 24-hour PM_{10} emissions from the BHC HVAC system burning fuel oil would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

One-Hour NO_2

A Tier 1 NO_2 analysis of impacts from the BHC HVAC system, burning fuel oil, was sufficient to demonstrate compliance for the Proposed Project, but not sufficient enough to demonstrate compliance for the Alternate Residential RWCDS. Therefore, a Tier 3 analysis was conducted for the Alternate Residential RWCDS. For the Proposed Project and Alternate Residential RWCDS, the maximum one-hour concentrations were estimated to be 145.7 µg/m^3 and 162.4 µg/m^3 (with Tier 3), respectively. Both concentrations are less than the one-hour NO_2 NAAQS of 188 µg/m^3. The total average annual NO_2 total concentration would be 30.4 µg/m^3 for the Proposed Project and 30.6 µg/m^3 for the Alternate Residential RWCDS. Both concentrations are less than the annual NO_2 NAAQS of 100 µg/m^3. Therefore, one-hour and annual NO_2 emissions from the BHC HVAC system burning fuel oil would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

One-Hour SO_2

The results of the one-hour SO_2 analysis for the BHC HVAC system, burning fuel oil, show that, for the Proposed Project and Alternate Residential RWCDS, the maximum one-hour SO_2 impact is 0.3 µg/m^3 and 1.3 µg/m^3, respectively. The total fourth highest daily one-hour averaged SO_2 concentration (including the background value) is estimated to be 18.4 µg/m^3 for the Proposed Project and 19.4 ug/m^3 for the Alternate Residential RWCDS. Both concentrations are less than the one-hour SO_2 NAAQS of 196 µg/m^3. Therefore, one-hour SO_2 emissions from the BHC system burning fuel oil would not significantly impact either the Proposed Project or the Alternate Residential RWCDS.

Conclusion

A summary of the results for all averaging time periods, with and without downwash effects, are presented in **Table K-8**. The result of the dispersion analysis is that all maximum estimated impacts under both building scenarios, with both natural gas and fuel oil, are less than the CEQR significant impact thresholds and the NAAQS. As such, emissions from the BHC system would not significantly impact the Proposed Project or the Alternate Residential RWCDS.

Table K-8: Summary of Maximum BHC Impacts on Proposed Development

Pollutant	Maximum Modeled Impact[1] (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	Evaluation Criteria (µg/m³)
Proposed Project RWCDS with Natural Gas				
24-hour $PM_{2.5}$	0.63/0.57	-	0.63	7.7 (*CEQR Criteria)*
Annual $PM_{2.5}$	<0.1	-	<0.1	0.3 (*CEQR Criteria*)
One-hour NO_2	19.6/15.2	112.2	131.8	188 (NAQQS)
Annual NO_2	0.14/<0.1	30.3	30.4	100 (NAAQS
One-hour SO_2	0.13/0.11	18.1	18.2	196 (NAQQS)
24-hour PM_{10}	0.74 / 1.59	35	36.6	150 (NAQQS)
Alternate Residential RWCDS with Natural Gas				
24-hour $PM_{2.5}$	1.63/0.63	-	1.63	7.7 (*CEQR Criteria)*
Annual $PM_{2.5}$	<0.1	-	<0.1	0.3 (*CEQR Criteria*)
One-hour NO_2 [(3)]	114.4/130.4	-	130.4	188 (NAQQS)
Annual NO_2	0.15/0.29	30.3	30.6	100 (NAAQS
One-hour SO_2	0.24/0.49	18.1	18.6	196 (NAQQS)
24-hour PM_{10}	0.74/ 1.59	35	36.6	150 (NAQQS)
Proposed Project with Fuel Oil #2				
24-hour $PM_{2.5}$	.1/0.91	-	1.1	7.7 (*CEQR Criteria)*
Annual $PM_{2.5}$	<0.1	-	<0.1	0.3 (*CEQR Criteria*)
One-hour NO_2 [(2)]	33.5/26.1	112.2	145.7	188 (NAQQS)
Annual NO_2	0.14/0.1	30.3	30.4	100 (NAAQS
One-hour SO_2	0.3/0.28	18.1	18.4	196 (NAQQS)
24-hour PM_{10}	1.66/ 3.56	35	38.6	150 (NAQQS)
Alternate Residential RWCDS with Fuel Oil #2				
24-hour $PM_{2.5}$	1.3/2.69	-	2.69	7.7 (*CEQR Criteria)*
Annual $PM_{2.5}$	<0.1	-	<0.1	0.3 (*CEQR Criteria*)
One-hour NO_2 [(3)]	121.5/162.4	-	162.4	188 (NAQQS)
Annual NO_2	0.3/0.2	30.3	30.6	100 (NAAQS
One-hour SO_2	0.6/1.3	18.1	19.4	196 (NAQQS)
24-hour PM_{10}	1.66/3.56	35	38.6	150 (NAQQS)

Notes:

[1] Modeled concentrations with/without downwash effects.

[2] Results with a Tier 1 analysis.

[3] Results with a Tier 3 analysis

ATTACHMENT L

NOISE

I. INTRODUCTION

This attachment assesses the potential for the proposed actions and subsequent reasonable worst-case development scenario (RWCDS) to result in significant adverse noise impacts. The applicant, Fleet Center, Inc., is seeking a zoning map amendment and a zoning text amendment (collectively, the "proposed actions") to facilitate the development of a new 14-story 209,354-gross square foot (gsf) commercial office building (the "Proposed Project") within the Downtown Brooklyn neighborhood of Brooklyn Community District (CD) 2. Although the applicant is proposing a commercial project, as the Propose Actions would also increase the development site's permitted residential density, a second reasonable worst-case development scenario (RWCDS; the "Alternate Residential RWCDS") is also being analyzed to encompass all potential environmental impacts that could occur as a result of the proposed actions.

As discussed in **Attachment J, "Transportation,"** the proposed actions are expected to change traffic volumes in the general vicinity of the development site. As such, a mobile source noise analysis was conducted under *City Environmental Quality Review* (CEQR) *Technical Manual* guidance to determine whether there are any noise-sensitive locations where project-generated traffic would have the potential to result in significant adverse noise impacts. Additionally, as the proposed actions would introduce new noise-sensitive uses within the development site, an analysis was conducted in order to determine the level of building attenuation required to ensure that future interior noise levels would satisfy applicable noise criteria. Based on a field survey of land uses in the area, it was determined that no stationary noise sources contribute significantly to noise levels in the area, and a stationary noise source analysis would not be necessary.

II. PRINCIPAL CONCLUSIONS

Noise from the increased traffic volumes generated by the Proposed Project would not cause significant adverse noise impacts, as the noise levels increases would fall well below the applicable *CEQR Technical Manual* significant adverse impact threshold (3.0 dBA).

Based on the noise analysis presented herein, the maximum predicted L_{10} noise levels adjacent to the development site's western frontage (Fleet Place) are expected to be 70.95 dBA. As the maximum predicted With-Action noise levels would fall in the Marginally Unacceptable (I) CEQR Noise Exposure category, a minimum 28 dBA of composite window/wall attenuation on all frontages of the development site and all future building facades would be required for residential/community facility uses in order to achieve the required residential and community facility interior noise level of 45 dBA or lower. Future commercial uses on the development site would be required to provide an attenuation rating of five dBA less than the residential/community facility requirement on all building frontages/facades.

The composite window/wall noise attenuations described above would be required through the assignment of an (E) designation (E-539) for noise at the development site (Brooklyn Block 2061, Lot 100) in conjunction with the proposed actions. With implementation of the attenuation levels outlined in

Section VIII, "Building Attenuation Requirements," the Proposed Project and Alternate Residential RWCDS would provide sufficient attenuation to achieve *CEQR Technical Manual* interior noise level guidelines of 45 dBA for residential/community facility uses and 50 dBA for commercial uses. Therefore, the proposed actions and subsequent Proposed Project or Alternate Residential RWCDS would not result in any significant adverse noise impacts.

III. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well documented. If sufficiently loud, noise may adversely affect people in several ways. For example, noise may interfere with human activities such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Although it is possible to study these effects on people on an average or statistical basis, it must be remembered that all the stated effects of noise on people vary greatly with the individual. Several noise scales and rating methods are used to quantify the effects of noise on people. These scales and methods consider factors such as loudness, duration, time of occurrence, and changes in noise level with time.

"A"-Weighted Sound Levels (dBA)

Noise is typically measured in units called decibels (dB), which are ten times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. Frequency is the rate at which sound pressures fluctuate in a cycle over a given quantity of time and is measured in Hertz (Hz), where one Hz equals one cycle per second. Frequency defines sound in terms of pitch components. In the measurement system, one of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network (known as A-weighting) that simulates the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used due to its widespread recognition and its close correlation to perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in **Table L-1**.

Table L-1: Common Noise Levels

Sound Source	(dBA)
Air Raid Siren at 50 feet	120
Maximum Levels at Rock Concerts (Rear Seats)	110
On Platform by Passing Subway Train	100
On Sidewalk by Passing Heavy Truck or Bus	90
On Sidewalk by Typical Highway	80
On Sidewalk by Passing Automobiles with Mufflers	70
Typical Urban Area	60-70
Typical Suburban Area	50-60
Quiet Suburban Area at Night	40-50
Typical Rural Area at Night	30-40
Soft Whisper at 5 meters	30
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0

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

Community Response to Changes in Noise Levels

Table L-2 shows the average ability of an individual to perceive changes in noise. Generally, changes in noise levels less than three dBA are barely perceptible to most listeners. However, as illustrated in **Table L-2**, five dBA changes are readily noticeable. Ten dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimations of an individual's probable perception of changes in noise levels.

Table L-2: Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Beranek and Neuman, Inc., *Fundamentals and Abatement of Highway Traffic Noise* (Report No. PB-222-703). Prepared for the Federal Highway Administration (FHA), June 1973.

Noise Descriptors Used in Impact Assessment

Because the sound pressure level unit (dBA) describes a noise level at just one moment and very few noises are constant, other ways of describing noise over extended periods of time have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level" (L_{eq}) can be computed. L_{eq} is the constant sound level that, in a given situation and time period (e.g., one hour [denoted by $L_{eq(1)}$] or 24 hours [denoted as $L_{eq(24)}$]), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as L_1, L_{10}, L_{50}, L_{90}, and L_x are sometimes used to indicate noise levels that are exceeded one, ten, fifty, ninety, and x percent of the time, respectively. Discrete event peak levels are given as L_1 levels. L_{eq} is used in the prediction of future noise levels by adding the contributions from new sources of noise (i.e., increases in traffic volumes) to the existing levels and in relating annoyance to increases in noise levels.

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

For the purposes of this analysis, the maximum one-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor used in the *CEQR Technical Manual* for noise impact evaluation and is used to provide an indication of highest expected sound levels; $L_{10(1)}$ is the noise descriptor used in the *CEQR Technical Manual* for building attenuation. Hourly statistical noise levels (particularly L_{10} and L_{eq} levels) were used to characterize the relevant noise sources and their relative importance at each receptor location.

The Day-Night sound level (L_{dn}) describes a receptor's cumulative noise exposure from all events over 24 hours. It may be thought of as a noise dose totaled after increasing all nighttime L_{eq} noise levels between 10 PM and 7 AM by ten dBA to reflect the greater intrusiveness of noise experienced during these hours. Pursuant to Federal Transit Authority (FTA) noise impact analysis methodology, the L_{dn} is adopted to assess noise generated by trains.[1] However, because the L_{dn} descriptor tends to average out high hourly values over 24 hours, the *CEQR Technical Manual* recommends that the L_{eq} descriptor be used for purposes of impact analysis.

Applicable Noise Codes and Impact Criteria

New York City Noise Code

The New York City Noise Control Code, as amended in December 2005, contains prohibitions regarding unreasonable noise and specific noise standards, including plainly audible criteria for specific noise sources. In addition, the amended code specifies that no sound source operating in connection with any commercial or business enterprise may exceed the decibel levels in the designated octave bands at specified receiving properties.

CEQR Technical Manual Noise Standards

The New York City Department of Environmental Protection (DEP) has set external noise exposure standards. These standards are shown in **Table L-3**.

Noise exposure is classified into four categories: acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. The standards shown are based on maintaining an interior noise level for the worst-case hour L_{10} of less than or equal to 45 dBA. Attenuation requirements are shown in **Table L-4**.

Impact Criteria

[1] "Transit Noise and Vibration Impact Assessment", 2006, FTA, Office of Planning and Environment.

In addition, the *CEQR Technical Manual* uses the following criteria to determine whether a proposed residential and/or community facility development would be subject to a significant adverse noise impact:

- If the No-Action levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period, the threshold for a significant impact would be an increase of at least five dBA $L_{eq(1)}$ (for the 5 dBA threshold to be valid, the resultant With-Action condition noise level would have to be equal to or less than 65 dBA);
- If the No-Action noise level is equal to or greater than 62 dBA $L_{eq(1)}$ or if the analysis period is a nighttime period (defined under CEQR standards as being between 10 PM and 7 AM), the incremental significant impact threshold would be three dBA $L_{eq(1)}$;
- If the No-Action noise level is 61 dBA $L_{eq(1)}$, the maximum incremental increase would be four dBA, since an increase higher than this would result in a noise level higher than the 65 dBA $L_{eq(1)}$ threshold.

Table L-3: Noise Exposure Guidelines for Use in City Environmental Impact Review

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	---------- Ldn ≤ 60 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)	---------- 60 < Ldn ≤ 65 dBA ----------	Same as Residential Day (7 AM-10 PM)	(1) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn	Same as Residential Day (7 AM-10 PM)	---------- Ldn ≤ 75 dBA ----------
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Source: DEP (adopted policy 1983).

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more;

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.

[3] One may use the Federal Aviation Administration- (FAA-) approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved Integrated Noise Model (INM) Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

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

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

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

Sources: DEP; *CEQR Technical Manual*

Notes:

[A] The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dBA less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

[B] Required attenuation values increase by one dBA increments for L_{10} values greater than 80 dBA.

IV. NOISE PREDICTION METHODOLOGY

Future noise levels resulting from traffic were calculated with a proportional modeling technique used as a screening tool to estimate changes in noise levels. The proportional modeling technique is an analysis methodology recommended for analysis purposes in the *CEQR Technical Manual*.

Proportional Modeling

Proportional modeling was used to determine No-Action and With-Action noise levels along the development site's Fleet Place frontage, as discussed in more detail below. Proportional modeling is one of the techniques recommended in the *CEQR Technical Manual* for mobile source analysis.

Using this technique, the prediction of future noise levels (where traffic is the dominant noise source) is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine No-Action and With-Action noise levels. Vehicular traffic volumes (counted during the noise recording), are converted into passenger car equivalent (PCE) values, for which one medium-duty truck (defined as vehicles with two axles and six tires having a gross weight between 9,900 and 26,400 pounds[2]) is assumed to generate the noise equivalent of thirteen cars, one heavy-duty truck (defined as vehicles with three or more axles having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles having two or three axles designed to carry more than nine passengers) is assumed to generate the noise equivalent of eighteen cars. Future noise levels are calculated using the following equation:

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

where:

FNA NL = Future No-Action Noise Level
NA PCE = No-Action PCEs
E PCE = Existing PCEs
E NL = Existing Noise Level

[2] The State of New York (DOT and DMV) defines school buses as having a gross vehicle weighting rate (GVWR) of between 10,000 and 36,000 pounds, depending on the class of bus (e.g., "A," "B," "C," or "D"). The most common bus types utilized throughout City are, but not limited to, Types B and C, which typically have two axles and six tires, school buses included in the proportional modeling were classified "medium trucks" for the mobile source noise analysis.

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

CEQR background growth rates were used to calculate the No-Action PCE values, and the With-Action traffic increments were used to calculate the With-Action PCE values.

V. EXISTING CONDITIONS

The applicant-owned development site at 101 Fleet Place is irregular-shaped and located on the western portion of Brooklyn Block 2061 with approximately 128 feet of frontage along Fleet Place to the west. The approximately 20,536-sf lot contains a 16,482-gsf one-story brick building, which is occupied by Duffield Children's Center, a child care and pre-K program operated by Brooklyn Community Services (BCS). In addition to the applicant-owned development site on Lot 100, the rezoning area encompasses small portions of adjacent Lots 80 and 110.

Selection of Noise Receptor Locations

The development site fronts Fleet Place (to the west); surface parking and residential buildings border the development site to the south and east, with a mixed-use commercial and residential building to the north. As noise generated by vehicles is the primary contributor to existing noise levels in the surrounding area, noise monitoring was conducted along the development site's future western frontage on Fleet Place (approximate midpoint of frontage, 264 feet north of Willoughby Street).

Noise Monitoring

Noise monitoring was carried out on Wednesday, June 7, 2017. The weather was clear with temperatures in the 60s and an average wind speed of nine miles per hour. Twenty-minute spot measurements of existing noise levels were performed at the receptor location for each of the three noise analysis periods – weekday AM peak hour (8 AM to 9 AM), weekday midday peak hour (12 PM to 1 PM), and weekday PM peak hour (5 PM to 6 PM) – to establish existing noise levels. Additional noise measurements were performed at the receptor location during the school dismissal/bus departure (School PM) peak period (2:30 PM to 3:30 PM) to determine the noise levels emanating from the existing child care and pre-K facility during drop-off/pick-up periods. For the purpose of this analysis, during the noise recordings, vehicles were counted and classified.

Equipment Used During Noise Monitoring

The instrumentation used for the measurements was a Brüel & Kjær Type 4189 ½-inch microphone connected to a Brüel & Kjær Model 2250 Type 1 (as defined by ANSI) sound level meter. This assembly was mounted at a height of five feet above the ground surface on a tripod and at least six feet away from any sound-reflecting surfaces to avoid major interference with source sound level that was being measured. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sound-level

calibrator using the appropriate adaptor. The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. A windscreen was used during all sound measurements except for calibration. Only traffic-related noise was measured; noise from other sources (e.g., emergency sirens, aircraft flyovers, etc.) was excluded from the measured noise levels. Weather conditions were noted to ensure a true reading as 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 Noise Monitoring Locations

Noise monitoring results for the receptor location are shown below in **Table L-5**. As indicated in the table, existing L_{eq} noise levels at the receptor location range from 63.33 dBA to 66.93 dBA in the weekday peak hours, with the highest monitored L_{eq} and L_{10} noise levels during the School PM weekday peak hour (66.93 dBA and 69.97 dBA, respectively). The existing L_{10} noise levels at the receptor location fall within the Marginally Acceptable CEQR Noise Exposure category in all analyzed peak hours.

Table L-5: Existing Noise Levels at Monitoring Location (in dBA)

Time	L_{eq}	L_{max}	L_{min}	L_1	L_{10}[1]	L_{50}	L_{90}	CEQR Noise Exposure Category
AM	64.17	86.46	58.13	72.33	65.42	62.25	60.35	Marginally Acceptable
MD	63.33	80.80	57.84	71.03	64.07	62.17	61.18	
SC PM	66.93	89.25	56.42	76.73	**69.97**	60.83	58.38	
PM	63.82	90.69	55.14	72.34	65.71	59.66	57.13	

Notes:
Field measurements were performed by Philip Habib & Associates (PHA) on Wednesday, June 7, 2017.
[1] Highest L_{10} value indicated in **bold**.

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

As outlined in **Attachment A, "Project Description,"** in the 2021 No-Action condition, it is assumed that the existing conditions within the development site would remain, and no changes to land use are expected to occur. As such, the 16,482-gsf one-story brick building occupied by Duffield Children's Center would remain on the applicant-owned development site.

Future No-Action noise levels at the receptor location were calculated using the noise prediction methodology described above in Section IV, "Noise Prediction Methodology." **Table L-6** compares the future No-Action and existing noise levels at the receptor. As indicated in **Table L-6**, noise levels at the receptor location are expected to minimally increase (by 0.04 dBA) in the 2021 No-Action condition as a result of general background growth. Increases of this magnitude would be barely perceptible. The highest projected No-Action L_{10} noise level at the receptor location would be 70.01 dBA, and thus, projected No-Action L_{10} noise levels are expected to fall in the Marginally Unacceptable (I) CEQR Noise Exposure category.

Table L-6: Future No-Action Noise Levels at Receptor Location (in dBA)

Time	Existing L_{eq}	No-Action L_{eq}	Change in L_{eq} from Existing Conditions[1]	No-Action L_{10}[2]	CEQR Noise Exposure Category
AM	64.17	64.21	0.04	65.46	Marginally Unacceptable (I)
MD	63.33	63.37	0.04	64.11	
SC PM	66.93	66.97	0.04	**70.01**	
PM	63.82	63.86	0.04	65.75	

Notes:
[1] No-Action L_{eq} – Existing L_{eq}
[2] Highest L_{10} value indicated in **bold**.

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

In the future with the proposed actions, the applicant intends to construct a new 14-story 209,354-gsf commercial office building. Under the Alternate Residential RWCDS, the applicant-owned development site would be developed with a 258,904-gsf residential building containing approximately 259 DUs and 36 accessory parking spaces. Future With-Action noise levels at the receptors were calculated using the noise prediction methodology described in Section IV, "Noise Prediction Methodology," above. **Table L-7** shows projected With-Action noise levels.[3]

Table L-7: Future With-Action (RWCDS) Noise Levels at Receptor Location (in dBA)

Time	No-Action L_{eq}	With-Action L_{eq}	Change in L_{eq} from No-Action Conditions[1]	With-Action L_{10}[2]	CEQR Noise Exposure Category
AM	64.21	66.22	2.01	67.47	Marginally Unacceptable (I)
MD	63.37	66.10	2.73	66.84	
SC PM	66.97	67.91	0.94	**70.95**	
PM	63.86	66.05	2.18	67.94	

Notes:
[1] With-Action L_{eq} – No-Action L_{eq}
[2] Highest L_{10} value indicated in **bold**.

As shown in **Table L-7**, in the future with the proposed actions, the maximum projected L_{10} noise level at the receptor location would be 70.95 dBA. As under No-Action conditions, future With-Action noise levels at the receptor location would fall within the Marginally Unacceptable (I) CEQR Noise Exposure category.

Comparing future With-Action and No-Action conditions, increases in noise levels at the receptor location would range from 0.94 dBA to 2.73 dBA. Changes of this magnitude would not be perceptible to the public and would fall below the applicable *CEQR Technical Manual* significant adverse impact threshold.

[3] As indicated in **Attachment J, "Transportation,"** the Proposed Project would generate more incremental vehicle trips than the Alternative Residential RWCDS. Therefore, the mobile source noise analysis uses the higher traffic volumes associated with the Proposed Project. It should also be noted that, while the Proposed Project would not provide accessory parking, for conservative analysis purposes, the noise analysis assumed that all incremental trips would occur along the Proposed Project's Fleet Place frontage.

VIII. BUILDING ATTENUATION REQUIREMENTS

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

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Typically, a building façade is composed of the wall, windows, and any vents or louvers for heating, ventilation, and air conditioning (HVAC) systems in various ratios of area. Since the Proposed Project would most likely be of masonry construction, which typically provides a high level of sound attenuation, the attenuation requirements for CEQR purposes apply primarily to the windows, but may also represent a composite window/wall attenuation value. Window/Wall attenuation can be described in terms of sound transmission class (STC), transmission loss (TL), and outdoor-indoor transmission class (OITC). Although these terms are sometimes used interchangeably, they are unique from each other. Transmission loss refers to how many decibels of sound a 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.

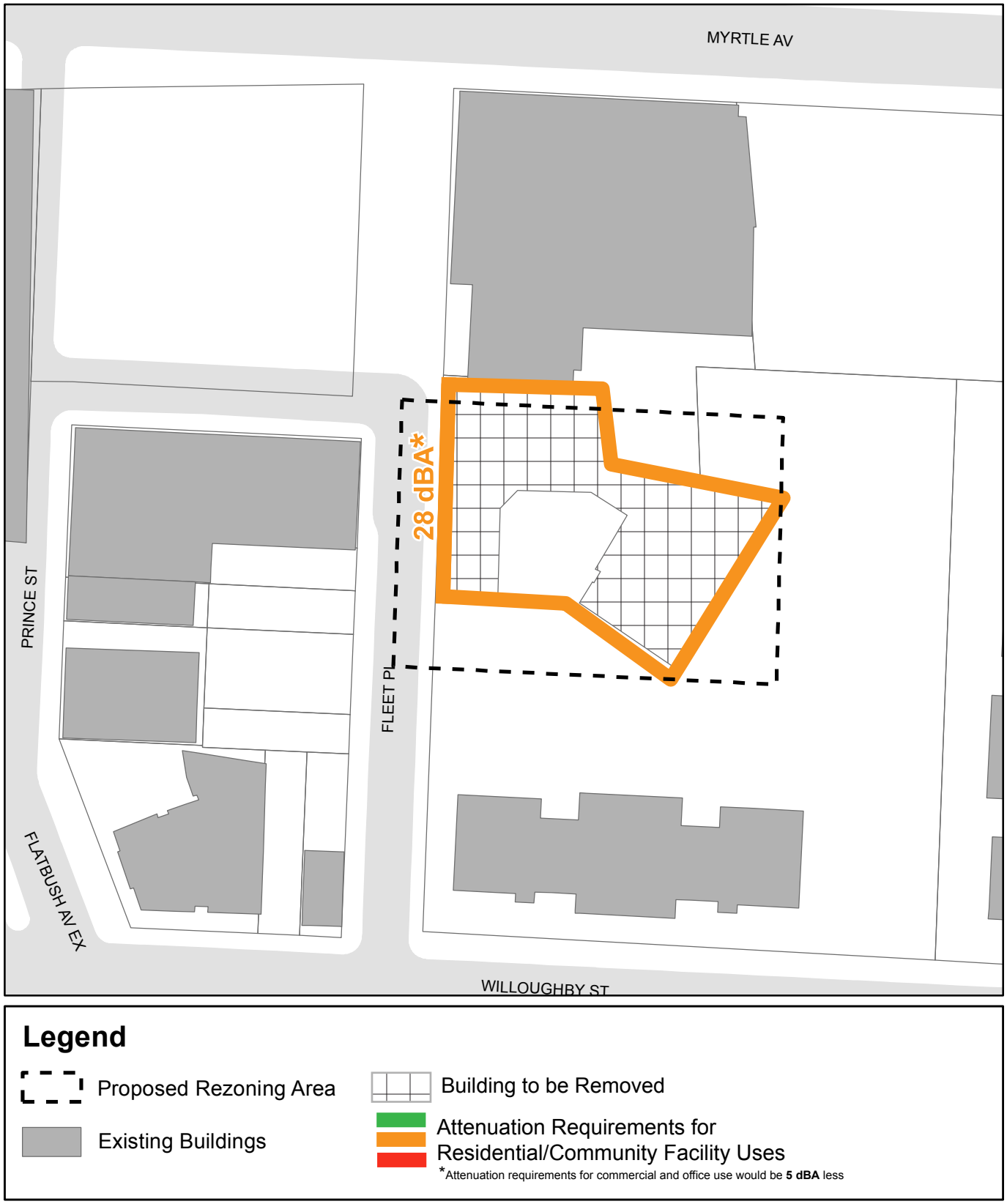
To simplify the noise attenuation properties of a wall, the STC rating was developed. It is a single number that describes the sound isolation performance of a given material for the range of test frequencies between 125 and 4,000 Hz. These frequencies sufficiently cover the range of human speech. Higher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

Based on predicted future With-Action exterior noise levels and *CEQR Technical Manual* criteria, maximum With-Action L_{10} noise levels at the receptor location would be greater than 70 dBA and would fall in the "Marginally Unacceptable (I)" CEQR Noise Exposure category, and would require special noise attenuation measures in order to achieve the required interior noise levels.

Specifically, as maximum With-Action L_{10} noise levels at the receptor location would be 70.95 dBA, a minimum 28 dBA of composite window/wall attenuation on all frontages of the development site and all future building facades would be required for residential/community facility uses in order to achieve the required residential and community facility interior noise level of 45 dBA or lower (refer to **Figure L-1**). Future commercial uses of the development site would be required to provide an attenuation rating of five dBA less than the residential/community facility requirement on all building frontages/facades.

Figure L-1
Noise Attenuation Requirements



(E) Designation

The composite window/wall noise attenuation described above would be required through the assignment of an (E) designation (E-539) for noise to the applicant-owned development site (Block 2061, Lot 100) in conjunction with the proposed rezoning. With the implementation of this composite window/wall noise attenuation, no significant adverse noise impacts would occur as a result of the proposed actions.

For building facades requiring 28 dBA or attenuation, the text of the (E) designation is as follows:

> **Block 2061, Lot 100: In order to ensure an acceptable interior noise environment, future residential/commercial uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all facades in order to maintain an interior noise level not greater than 45 dBA for residential uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.**

With implementation of the attenuation levels outlined above, the Proposed Project and Alternate Residential RWCDS would provide sufficient attenuation to achieve *CEQR Technical Manual* interior noise level guidelines of 45 dBA for residential/community facility uses and 50 dBA for commercial uses. Therefore, the proposed actions and subsequent RWCDS or Alternate Residential Scenario would not result in any significant adverse noise impacts.

IX. OTHER NOISE CONCERNS

Mechanical Equipment

It is assumed that building mechanical systems (i.e., heating, ventilation, and air conditioning [HVAC] systems) for all buildings associated with the proposed actions would be designed to meet all applicable noise regulations (i.e., Subchapter 5, §24-227 of the New York City Noise Control Code, the New York City Department of Buildings Code) and to avoid producing levels that would result in any significant increase in ambient noise levels. Therefore, the proposed actions would not result in any significant adverse noise impacts related to building mechanical equipment.

APPENDIX I

ZONING TEXT AMENDMENT

PROPOSED 101 FLEET PLACE REZONING
Community District 2, Brooklyn
Project ID No. 2015K0330

June 28, 2018

Matter in underline is new, to be added;
Matter in ~~strikeout~~ is to be deleted;
Matter with # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution

* * *

APPENDIX F

Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

* * *

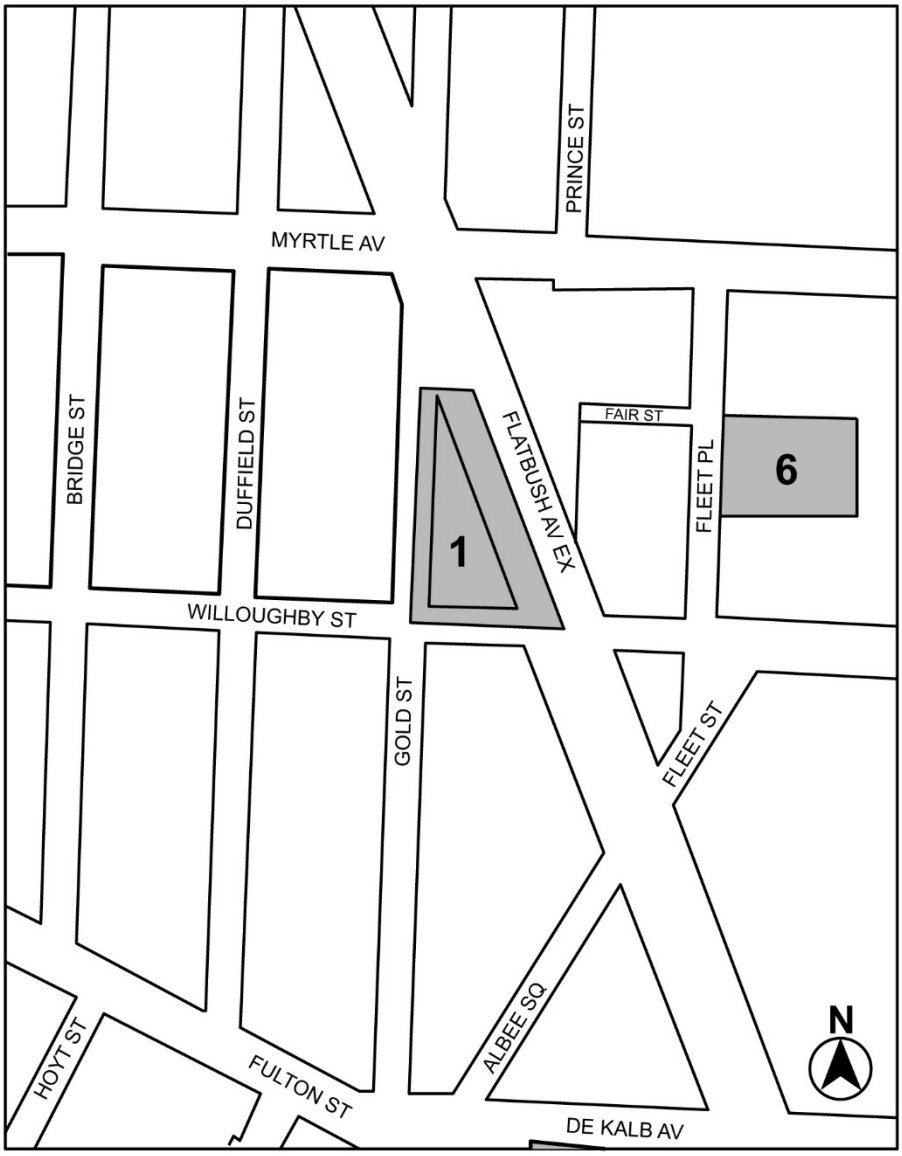
Brooklyn

* * *

Brooklyn Community District 2

* * *

Map 5. ~~(11/16/16)~~ [date of adoption]



Mandatory Inclusionary Housing area see Section 23-154(d)(3)

Area 1 – 11/16/16 MIH Program Option 2

Area 6 – [date of adoption] MIH Program Options 1 and 2

Portion of Community District 2, Brooklyn

* * *

APPENDIX II

HAZARDOUS MATERIALS

PHASE I ENVIRONMENTAL SITE ASSESSMENT

101 Fleet Place
Brooklyn, New York, 11201
Tax Block 2061, Lot 100



Prepared for:

The Leser Group Ltd.
1491 47th Street
Brooklyn, NY 11219

Prepared by:

TENEN ENVIRONMENTAL
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January 2018

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EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed in accordance with ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The Phase I ESA was performed by Mr. Matthew Carroll of Tenen Environmental. LLC (Tenen), an Environmental Professional as defined in 40 CFR 312. The Site reconnaissance was conducted by Ms. Sara Babyatsky on January 3, 2018. The purpose of this ESA was to assist the client in developing information to identify recognized environmental conditions (RECs) in connection with the Site. An REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The Site, located at 101 Fleet Place, Brooklyn, NY (Tax Block 2061, Lot 100) is an irregular-shaped parcel on the east side of Fleet Place, and between Myrtle Avenue and Willoughby Street. The total Site area is approximately 20,000 square feet (SF). The property has approximately 130 feet of frontage along Fleet Place and a lot depth of approximately 170 feet. The Site is occupied by a one-story day care center. Monitoring wells were observed offsite adjacent to the eastern and western Site boundaries. Additional information regarding these wells was not available and they may be associated with investigations on offsite properties. The presence of these wells is not considered a REC. A FOIL request has been submitted regarding the multiple closed spills on a nearby upgradient property. If the information received changes the conclusions of this report, Tenen will issue an addendum to this Phase I ESA.

The 1887 Sanborn map depicts the Site developed with small residential buildings and a church. A commercial building is depicted on the 1904 map. By 1915, the church was replaced with four residential buildings, and by 1938 this area of the Site was vacant. Prior to 1969, a one-story building was constructed and occupied by the N.Y. Telephone Co. Garage (1969-1993) and a children center (1995-2007). The city directory listings indicate historic residential use (1928-1934) and recent commercial use of the Site, including a construction company (2010-2014) and the Duffield Children Center (1997-2005).

The adjoining properties were predominantly depicted with low-rise commercial and residential buildings in the 1887-1915 Sanborn maps. An east adjoining property was occupied by a chapel, a kindergarten, and a boy's club prior to 1938. The 1950 Sanborn map identified a novelty manufacturing facility and an auto repair facility on east adjoining properties. Prior to 1969, the Site block and adjoining blocks to the northwest, east, and southeast were redeveloped as one block, with commercial properties occupying the north adjoining properties and a housing development and associated parking lots occupying the east and south adjoining properties. The west adjoining properties were depicted with a lumber yard on the 1938 map, redeveloped with a two-story building prior to 1950 and occupied by a manufacturing facility, a warehouse , and a school.

All Sanborn maps identified a mix of residential, commercial, and industrial uses in the surrounding area. Manufacturing uses included dyer and bleach manufacturing, chemical manufacturing, wagon manufacturing, soap manufacturing, unspecified manufacturing, and metalworking, a laboratory, and a dry cleaner. Numerous garages, filling stations, and auto repair shops with gasoline storage tanks were depicted. While uses of individual lots may have changed, the nature of the surrounding area is depicted as relatively constant through 2007, the date of the most recent map.

Regarding the Site and adjoining/surrounding properties, the results of the city directory, historic topographic map and aerial photograph review are generally consistent with the usage depicted on the

historic Sanborn maps, although the city directory listings provide additional information on adjoining property uses. Historic uses of the Site were identified as public/institutional, residential, and commercial, including a garage. The presence of underground storage tanks and spills associated with the Site are addressed in the database section below and, based on the information in the database listings, the historic use of the Site as a garage is not considered a REC. Manufacturing was identified on east and west adjoining properties, and auto repair on an east adjoining property. These historic uses of the east and west adjoining properties likely involved the use and disposal of hazardous materials and petroleum and are considered RECs.

Uses of surrounding properties have included manufacturing, including chemical, garages and auto filling stations with underground gasoline storage, auto repair, metal works, a tannery, and dry cleaning. Uses of the surrounding properties likely involved the use and disposal of hazardous materials and petroleum and are considered potential RECs; however, based on the hydrogeology of the surrounding area and the location of the majority of these historic offsite uses relative to the Site, these uses are not considered RECs.

Listings for the Site were identified on the NY UST and LTANKS database, referencing one 1,200-gallon UST containing #2 fuel oil and five 550-gallon steel USTs containing gasoline. The six tanks were closed on 3/1/93, and the site status is given as unregulated-closed. Spill Number 8902455 was reported on 6/8/89 due to tank test failure/air pressure loss and the spill case was closed on 6/23/04. The closed spill case is considered a historic REC (HREC), and is not a REC. Historic underground storage of fuel oil and gasoline on the Site is considered a potential REC. However, there are no open spills or releases recorded at this location and no indications of a release were observed during the Site reconnaissance. This listing is not considered a REC. As discussed previously, FOIL requests have been filed with NYSDEC and FDNY requesting additional information. If the information received changes the findings of this report, Tenen will issue an addendum to the Phase I ESA.

The database search indicated numerous listings of properties within the standard search radii on multiple regulatory databases. Many of these listings are located a significant distance from and/or downgradient of the Site. All upgradient leaking tank and spill cases have been closed and are not considered RECs.

Tenen has performed a *Phase I Environmental Site Assessment*, in conformance with the scope and limitations of ASTM Practice E 1527-13, for 101 Fleet Place, Kings County, New York. Any exceptions to, or deletions or deviations from this practice are described in Section 1.4 of this report. This assessment has revealed *no evidence of recognized environmental conditions* in connection with the property with the exception of the following:

- historic use of the east adjoining properties for manufacturing and auto repair;
- historic use of the west adjoining properties for manufacturing.

1.0 INTRODUCTION

1.1 Site Description

The Site, located at 101 Fleet Place, Brooklyn, NY (Tax Block 2061, Lot 100) is an irregularly shaped parcel on the east side of Fleet Place, and between Myrtle Avenue and Willoughby Street. The total Site area is approximately 20,000 square feet (SF). The property has approximately 130 feet of frontage along Fleet Place and a lot depth of approximately 170 feet. The Site is occupied by a one-story day care center.

The Site is located within the Special Downtown Brooklyn District and is zoned R6/R7-1, a designation denoting lower rise multi-family apartment buildings with high lot coverage or taller buildings with less lot coverage, with a C2-4 overlay, allowing for uses to meet local retail needs. A Site location figure is included in Appendix A and photographs from the Site reconnaissance are included in Appendix B.

1.2 Scope of Services

This Phase I Environmental Site Assessment (ESA) was performed in accordance with ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of this ESA was to assist the client in developing information to identify recognized environmental conditions (RECs) in connection with the Site. This was undertaken through user-provided information; a regulatory database review; historical and physical records review; interviews; and a visual non-invasive reconnaissance of the Site and adjoining properties. Limitations, ASTM deviations, and significant data gaps are evident from reviewing the applicable scope of services and the report text.

1.3 Standard of Care

This ESA was performed in accordance with ASTM E1527-13 and generally accepted practices used in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

Phase I ESAs, such as the one performed at this Site, are of limited scope, are noninvasive and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the Site beyond what is identified by the limited scope of this ESA. In conducting the limited scope of services described herein, certain sources of information and public records, some of which may document environmental concerns, were not reviewed. No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property and the performance of a Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the Site or otherwise uses the report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research or assessment.

1.4 Additional Scope Limitations, ASTM Deviations and Significant Data Gaps

This ESA did not include subsurface or other invasive assessments, business environmental risk evaluations or other services not particularly identified and discussed herein. Reasonable attempts were made to obtain information within the scope and time constraints; however, in some instances, information requested is not, or was not, received by the issuance date of the report. Information obtained

for this ESA was received from several sources that we believe to be reliable; nonetheless, the authenticity or reliability of these sources cannot and is not warranted hereunder.

No significant data gaps were identified in the performance of this Phase I ESA.

The significance of these limitations and missing information, if any, with respect to the findings of this Phase I ESA has been evaluated and it has been determined that no significant data gap is present. However, it should be recognized that an evaluation of the significance of these data gaps is based on the information available at the time of report issuance and an evaluation of information received after the report issuance date may result in revisions to the findings of this Phase I ESA.

This report represents the final document; its text may not be altered after final issuance. Findings in this report are based upon the Site's current utilization, information derived from the most recent reconnaissance and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the most recent reconnaissance and may subsequently become observable (such as after Site renovation or development). Further, the contents of this Phase I ESA are not to be construed as legal interpretation or advice.

1.5 Reliance

This Phase I ESA report is prepared for the exclusive use and reliance of The Leser Group Ltd. Use or reliance by any other party is prohibited without the written authorization of the above entities. The User has requested this Phase I ESA as part of due diligence in order to qualify for Landowner Liability Protections (LLPs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Continued viability of this report is subject to ASTM E1527-13 Sections 4.6 and 4.8. If the ESA will be used by a different user (third party) than the user for whom the ESA was originally prepared, the third party must also satisfy the user's responsibilities in Section 6 of ASTM E1527-13.

1.6 Client-Provided Information

Mr. Abraham Leser, representative of the User, completed a Phase I ESA User Questionnaire to provide the following information relative to the Site. The User Questionnaire is provided in Appendix E.

1.6.1 Knowledge of Environmental Liens or Activity and Use Limitations (AULs)

The User is not aware of any environmental liens or Activity and Use Limitations (AULs) filed or recorded under federal, tribal, state or local law.

1.6.2 Specialized Knowledge or Experience

The User does not have specialized knowledge or experience related to the property or nearby properties.

1.6.3 Significantly Lower Purchase Price

A significantly lower purchase price is not applicable to the Site at this time.

1.6.4 Commonly Known or Reasonably Ascertainable Information

The User is not aware of the past uses of the property or any other commonly known or reasonably ascertainable information about the Site that may help to identify conditions indicative of releases or threatened releases.

1.6.5 Obvious Indicators

Based on the User's knowledge and experience related to the property, the User is unaware of any obvious indicators that point to the presence or likely presence of contamination at the property.

1.6.6 Proceedings Involving the Site

The User is not aware of any pending, threatened, or past litigation, administrative proceedings, or notices from any governmental entity regarding possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products in connection with the Site.

2.0 PHYSICAL SETTING

According to the Brooklyn Quadrangle USGS Topographic Map (2013), included in Figure 1 in Appendix A, the property lies at an elevation of approximately 40 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level). The surface topography at the Site is relatively flat and gently slopes downward to the north-northwest.

Groundwater is assumed to be approximately 30 feet below the ground surface. Groundwater is assumed to be flowing locally northeast. Groundwater is not used as a source of potable water in this area of Brooklyn. The Navy Yard Basin on the East River is the nearest surface water body and is located less than 4,000 feet to the northeast.

The Federal Emergency Management Agency (FEMA) flood insurance rate map for the Site (Map Number 3604970203F) indicates that the Site is located outside of Zone X, the 0.2% annual chance (or 500 year) floodplain. The FEMA map can be found in Appendix E.

3.0 HISTORICAL USE INFORMATION

The following historical sources were reviewed: Sanborn fire insurance maps, aerial photographs, topographic maps and city directories. Copies of these resources are included in Appendix C. Additionally, records from New York City agencies were reviewed and copies of these documents are included in Appendix E. A summary of the historical review is included in Section 3.9.

3.1 Sanborn Fire Insurance Maps

Maps were available for the following years: 1887, 1904, 1915, 1938, 1950, 1969, 1977, 1979, 1980, 1981, 1982, 1986, 1987, 1988, 1989, 1991, 1992, 1993, 1995, 1996, 2001, 2002, 2003, 2004, 2005, 2006 and 2007. The results of the Sanborn map review are provided below.

Site. The 1887 map shows the Site divided into multiple lots and developed with eight two- to three story residential buildings on the front portion of the lots, four residential buildings on the rear portion of lots, and a church. A commercial building on the east side of the Site is depicted on the 1904 map. By 1915, the church was replaced with four residential buildings, and by 1938 this Site lot was vacant. Between 1938 and 1950, most Site buildings were demolished. By 1969, the Site was redeveloped with a one-story building, labeled "N.Y. Telephone Co. Garage". No further changes are shown through 1993. The Site is depicted with public use and occupied by a childrens center on maps dated 1995-2007.

Adjoining Properties. The 1887-1915 maps show all adjoining properties developed with two- and three-story residential and commercial use buildings, with the exception of a chapel on an east adjoining property. The chapel is shown with a kindergarten on the 1915 map, and was later occupied by a boy's club (1938) and novelty manufacturing (1950). Between 1938 and 1950, several adjoining buildings had been demolished. An east adjoining property is identified as an auto repair facility on the 1950 map. Three west adjoining properties were used as a lumber yard on the 1938 map, redeveloped with a two-story building used for manufacturing by 1950, identified as a warehouse from 1977-2002, and later depicted with a school on maps dated 2002-2007. Prior to 1969, the Site block and adjoining blocks to the northwest, east, and southeast were redeveloped as one block, with commercial properties occupying the north adjoining properties and a housing development and associated parking lots occupying the east and south adjoining properties. No changes to use are shown through 2002. A parking lot is identified on a west adjoining property on maps dated 2003-2007. The north adjoining properties appear vacant on the 2007 map.

Surrounding Properties. By 1887, most of the surrounding area was occupied by low-rise residential and commercial buildings. A dyer and bleacher manufacturer (1904-1915) and a tannery (1904) are shown east of the Site on the 1904 map, chemical manufacturing and a steam laundry (1887 and 1904) to the south, and a newspaper syndicate and wagon manufacturing to the northeast. Prior to 1915, several lots were demolished to the west and southwest of the Site, and Flatbush Avenue was constructed. A railroad car barn and subway station are shown northwest of the Site on the 1915 map, movie theaters are shown to the northeast and northwest, and a property to the southwest is occupied by the Department of Health. Manufacturing (1915). A sheet metal rolling mill (1915, 1950), Rosco Laboratories (1938-1950), auto repair (1938), and an undertaker (1950) were identified on the east adjoining block. Filling stations with underground gasoline storage tanks (USTs) are shown east, south, and southeast of the site on the 1938 maps; a block to the southwest is shown with used car sales, auto laundry and parking; multiple USTs on the 1938-1950 maps, garages and auto repair with USTs are shown throughout the area; and soap manufacturing is identified to the southeast. Prior to 1950, blocks north of Myrtle Avenue were reconstructed with a housing development. A cutlery factory is shown to the southwest on the 1938 map and a dry cleaning facility is depicted to the west on the 1950 map. The blocks south of Willoughby Street were redeveloped with a Long Island University campus and blocks east of the Site with a housing

development prior to 1969. The west adjoining block is shown with parking lots (1969-2007), a NYC Transit Authority building (1986-2007), manufacturing (1986-2007), and an auto repair and wash facility (2001-2007). An auto body shop is identified northwest of the Site on maps dated 1977-2007. While uses of individual lots may have changed, the nature of the surrounding area is depicted as relatively constant through 2007, the date of the most recent map.

Uses of the Site were identified as public, residential and commercial, including a garage from 1969 through 1993. The historic use of the Site as a garage is considered a potential REC. Manufacturing was identified on the east and west adjoining properties, and auto repair on an east adjoining property. Uses of surrounding properties have included manufacturing, including chemical, garages and auto filling stations with underground gasoline storage, auto repair, metal works, a tannery, and dry cleaning. These historic uses of the east and west adjoining and surrounding properties likely involved the use and disposal of hazardous materials and petroleum products and are considered potential RECs.

3.2 Historical Topographic Maps

Tenen reviewed the historical topographic maps dated 1897, 1898, 1900, 1947, 1955, 1967, 1979, 1995, and 2013. The Site and surrounding area appear to be developed in the earliest topographic maps (1897-1900). The 1955 map depicts a city prison and hospital southeast of the Site, a railroad station to the north, court buildings to the west and southwest, and hospitals, schools, and houses of worship throughout the surrounding area. The U.S. Navy yard/NY shipyard is shown northeast of the Site on all topographic maps.

No RECs were identified based upon a review of historical topographic maps.

3.3 Historical Aerial Photographs

Tenen reviewed aerial photographs from 1924, 1951, 1954, 1961, 1966, 1974, 1980, 1984, 1991, 1994, 2006, 2009 and 2011. The 1924 aerial photograph depicts the Site developed with multiple buildings and the surrounding area as developed urban space. The Site appears partially vacant in the 1951 photograph, and photographs dated 1951 and later show the Site occupied by one building. By 1961, most adjoining lots had been redeveloped with tall buildings and associated parking lots. The surrounding area appears similar through 2011.

The historic uses of the Site and surrounding properties cannot be fully determined upon review of the aerial photographs. No RECs were identified.

3.4 City Directories

Available city directory listings were provided by EDR for the following years: 1928, 1934, 1940, 1945, 1949, 1960, 1965, 1970, 1973, 1976, 1980, 1985, 1992, 1997, 2000, 2005, 2010 and 2014.

Site. Addresses associated with the Site are listed in the city directories dated 1928, 1934, 1997, 2000, 2005, 2010 and 2014. The city directory listings for the Site addresses are summarized below:

101 Fleet Place

Duffield Children Center:	1997, 2000, 2005
The Rinaldi Group of NYC:	2010, 2014
residential:	1928, 1934

Adjoining Properties. Available city directory listings for the lots adjoining the Site are summarized below.

81 Fleet Place (north adjoining property)
*No available listings

175 Willoughby Street (southeast adjoining property)

Paper Converting Co.:	1980
Medical/dental office:	1976, 1980, 1985, 2010, 2014
Trading corp:	1985
Construction co:	1992, 2010, 2014
Towers Management Corp:	1992, 1997
Long Island University:	2005
Investment co:	2010
Multiple light commercial businesses:	2010-2014
residential:	1970-2014

102 Fleet Place (west adjoining property)

residential:	1934, 1960, 1965, 1970, 1973

147 Prince Street (west adjoining property)

Arc Designs:	2010
Reliance First Solutions LLC:	2014
Real estate agencies:	2014
Tax services:	2014
Born Outta King's Movement Inc:	2014
Law firms:	2014
Genesis Air Systems LLC:	2014
LJW Community Strategies:	2014
Jewish Voice for Peace:	2014
Property mgmt co:	2014
Computer programming:	2014
Business consultant:	2014
Interior designer:	2005
Long Island Copying and Printing:	2005
Preschool:	2005
Schwabe Herman Inc:	1976, 1992, 1997, 2000
Rapid Shoe Machinery Sales Corp:	1976, 1985, 1992, 2000
Spice Cos:	1985, 1992
Wildcat Service Corp:	1976
NYC Welfare Dept:	1960, 1965

86 Myrtle Avenue (northwest adjoining property)
*No available listings

The city directory listings indicate some historic residential use (1928-1934) and recent commercial use of the Site (1997-2014), including a construction company and a day care center. Listings for the adjoining properties are residential and commercial, including construction, real estate agencies, tax, legal, and medical services, and sales. No RECs were identified based upon a review of the city directory listings.

3.5 New York City Department of Buildings

Information obtained from the New York City Department of Buildings (NYCDOB) Building Information System (BIS) was reviewed. Information provided on the available Certificates of Occupancy (C of Os) for the Site is summarized below.

101 Fleet Place
C of O dated 5/20/93 references a one-story building with a children's nursery and day care center, and an open courtyard.

No Site RECs were identified based upon a review of the NYCDOB records.

3.6 Title Search

Tenen reviewed documentation (deeds and easements) available from NYC ACRIS. This information does not indicate the presence of a REC.

3.7 Environmental Liens/Activity and Use Limitations

As detailed in Section 1.6.1, the User is not aware of any environmental liens or activity and use limitations.

3.8 Historical Interviews

The User requested information from the owner of the Site, including information listed in the interviews section and list of helpful documents included in ASTM E1527-13. To date, the Owner has not provided a completed Owner Questionnaire, which is considered a data gap. Based on the historical information available, this is not considered a significant data gap.

3.9 Historical Use Information Summary

Site. The 1887 Sanborn map depicts the Site with twelve two- to three story residential buildings and a church and a commercial building is shown on the 1904 map. By 1915, the church was replaced with four residential buildings, and by 1938 that area of the Site was vacant. Prior to 1969, the Site buildings were demolished and the Site was redeveloped with a one-story building occupied by the N.Y. Telephone Co. Garage (1969-1993) and a children center (1995-2007). The city directory listings indicate some historic residential use (1928-1934) and recent commercial use of the Site, including a construction company (2010-2014) and the Duffield Children Center (1997-2005).

Adjoining and Surrounding Properties. The adjoining properties were predominantly depicted with low-rise commercial and residential buildings in the 1887-1915 Sanborn maps. An east adjoining property was occupied by a chapel (1887-1915), a kindergarten (1915), a boy's club (1938) and novelty manufacturing (1950). Between 1938 and 1950, several adjoining buildings had been demolished. An auto repair facility was identified on an east adjoining property on the 1950 map. The west adjoining properties were depicted with a lumber yard on the 1938 map, a two-story building prior to 1950 and later occupied by a manufacturing facility (1950), a warehouse (1977-2002), and a school (2002-2007).

Prior to 1969, the Site block and adjoining blocks to the northwest, east, and southeast were redeveloped as one block, with commercial properties occupying the north adjoining properties and a housing development and associated parking lots occupying the east and south adjoining properties. No changes to use are shown through 2002. A parking lot is identified on a west adjoining property on maps dated 2003-

2007. The north adjoining properties appear vacant on the 2007 map. The city directory listings document residential and commercial use of adjoining lots.

All Sanborn maps (1887-2007) identified a mix of residential, commercial, and industrial uses in the surrounding area. Manufacturing uses included a dyer and bleach manufacturing to the east (1904-1915), chemical manufacturing to the south (1904), wagon manufacturing to the northeast (1904-1915), soap manufacturing to the southeast (1950) and unspecified manufacturing on the east (1915) and west (1986-2007) adjoining blocks. Metalworking was identified on the east adjoining block on the 1915 and 1950 maps. Numerous garages, filling stations, and auto repair shops with gasoline storage tanks were depicted. A laboratory was identified on the east adjoining block on maps dated 1938-1950. The 1904 map showed a tannery east of the Site and the 1950 map showed a dry cleaning facility to the west. Multiple houses of worship, housing developments, parking lots, and recreational uses were identified. While uses of individual lots may have changed, the nature of the surrounding area is depicted as relatively constant through 2007, the date of the most recent map.

Regarding the Site and adjoining/surrounding properties, the results of the city directory, historic topographic map and aerial photograph review are generally consistent with the usage depicted on the historic Sanborn maps, although the city directory listings provide additional information on adjoining property uses. Historic uses of the Site were identified as public/institutional, residential, and commercial, including a garage (1969-1993). The historic use of the Site as a garage is considered a potential REC. Manufacturing was identified on east and west adjoining properties, and auto repair on an east adjoining property. Uses of surrounding properties have included manufacturing, including chemical, garages and auto filling stations with underground gasoline storage, auto repair, metal works, a tannery, and dry cleaning. These historic uses of the east and west adjoining and the surrounding properties likely involved the use and disposal of hazardous materials and petroleum products and are considered potential RECs.

4.0 RECORDS REVIEW

Database information was provided by Environmental Data Resources (EDR) on December 27, 2017. Several available federal and state databases were searched using standard radii, as detailed in ASTM 1527-05. The database search report, including definitions and descriptions, is included in Appendix D.

4.1 Federal, State/Tribal and Proprietary Databases

Listings for the Site were identified on the UST and LTANKS databases.

Records for surrounding properties show that multiple properties within the standard search radii are listed in the LTANKS, NY Spills, and MANIFEST databases, and multiple nearby sites have registered storage tanks. Each of these categories is detailed below. The following databases contain sites within the standard search radii.

Summary of Databases with Identified Sites

Database	Description	Radius	Facilities
NPL	The NPL database identifies over 1,200 sites for priority cleanup under the Superfund program.	1.0 mi	1
SEMS-ARCHIVE	The SEMS-ARCHIVE (formerly known as CERCLIS-NFRAP) database tracks sites that have no further interest under the Federal Superfund Program based on available information. Archived sites have been removed and archived from the inventory of SEMS sites and, based upon available information, is not judged to be potential NPL site.	0.5 mi	3
RCRA-LQG	RCRAInfo is USEPA's information system on sites that generate, transport, store treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators generate over 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste per month.	0.25 mi	12
RCRA-SQG	RCRAInfo is USEPA's information system on sites that generate, transport, store treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators generate between 100 kg and 1,000 kg of hazardous waste per month.	0.25 mi	6
RCRA-CESQG	RCRAInfo is USEPA's information system on sites that generate, transport, store treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). The RCRA-CESQG database includes conditionally-exempt small quantity generators (CESQGs) which generate less than 100 kilograms (kg) of hazardous waste or less than 1 kg of acutely hazardous waste, per month.	0.25 mi	9

Database	Description	Radius	Facilities
NY SHWS	The SHWS records are the state's equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the NYS Department of Environmental Conservation's Inactive Hazardous Waste Disposal Sites in New York State.	1.0 mi	8
NY SWF/LF	The SWF/LF database typically contains an inventory of solid waste disposal facilities or landfills.	0.5 mi	1
NY UST / NY AST	The NY UST and NY AST databases include site with registered USTs or ASTs, respectively.	0.25 mi	30(UST) 30(AST)
NY LTANKS	The NY LTANKS database includes an inventory of reported leaking storage tank incidents from April 1, 1986 through present	0.5 mi	61
NY TANKS	The NY TANKS database contains records of facilities that are or have been regulated under the Bulk Storage Program. Tank information for these facilities may not be releasable by the state agency.	0.25 mi	2
NY ENG CONTROLS	The ENG CONTROLS database contains environmental remediation sites that have engineering controls in place.	0.5 mi	1
NY INST CONTROLS	The INST CONTROL database includes remediation sites with institutional controls in place.	0.5 mi	1
NY VCP	NY VCP (Voluntary Cleanup Agreements) contains data on sites remediated under the voluntary remedial program, which uses private monies to get contaminated sites remediated to levels allowing for the sites' productive use. The program covers virtually any kind of site and contamination.	0.5 mi	2
NY BROWNFIELDS	The NY BROWNFIELDS database lists sites on the NYS Brownfields Site List.	0.5 mi	4
NY ERP	The ERP (Environmental Restoration Program) database lists sites approved for State-provided grants for site investigation and remediation activities.	0.5 mi	1
US BROWNFIELDS	The US BROWNFIELDS database provides information for brownfield sites for which information is reported back to USEPA, as well as areas served by Brownfields grants programs.	0.5 mi	1
NY SPILLS	The NY Spills database includes data on spills reported to the New York State Department of Environmental Conservation (NYSDEC).	0.125mi	41

Database	Description	Radius	Facilities
RCRA-Non-Gen/NLR	RCRAInfo is USEPA's information system on sites that generate, transport, store treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). The RCRA-NonGen database includes sites that do not presently generate hazardous waste.	0.25 mi	78
FUDS	The Formerly Used Defense Sites database contains properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.	1.0 mi	1
ROD	The ROD database identifies NPL sites with Record of Decision documents mandating a permanent remedy.	1.0 mi	1
DRYCLEANERS	The DRYCLEANERS database contains a listing of all registered dry cleaning facilities.	0.25 mi	4
E DESIGNATION	Lists sites designated on the NYC zoning map as having potential hazardous material contamination that must be addressed when the property is redeveloped.	0.125mi	23
NY HSWDS	The HSWDS database includes known or suspected hazardous waste disposal sites, including sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites and non-registry sites for which USEPA Preliminary Assessment reports or Site Investigation reports were prepared.	0.5 mi	1
MANIFEST	MANIFEST databases include documents that list and track hazardous waste from the generator through transporters to a storage or disposal facility.	0.25 mi	131

4.1.1 Federal- and State-Listed Facilities

Site. Two listings for the Site were identified on the regulatory databases. The NY UST database listing is **New York Telephone (101 Fleet Place) (Site I.D. 16733, Facility I.D. 2-344176).** The information references one 1,200-gallon steel UST containing #2 fuel oil (PBS material code 0001), and five 550-gallon steel USTs containing gasoline (PBS material code 0009). The six tanks were closed on 3/1/93, and the site status is given as unregulated-closed. The Site is also listed on the LTANKS database, referencing Spill Number 8902455 (101 Fleet Place), reported on 6/8/89 due to tank test failure/air pressure loss. The record indicates the spill case was closed on 6/23/04 due to the nature and extent of the spill. The UST listing documenting underground fuel and gasoline storage is considered a potential REC. The closed spill case is considered a Historic Recognized Environmental Condition (HREC) and is not considered a REC.

Adjoining and Surrounding Properties. The database listings for adjoining and surrounding properties within the standard search radii were reviewed. Many of these listings pertain to locations that are downgradient or a considerable distance from the Site or reference leaking tank and spills cases that have been closed and listings with no recorded releases and/or violations. All upgradient leaking tank and spill cases are closed and are not considered RECs. The following discussion focuses on listings for properties where the available information indicates the potential for migration of contaminants to the Site.

A listing for **Bridge Cleaners (348 Bridge Street)**, located approximately 0.2 mile upgradient of the Site, was identified on the RCRA-SQG, SPILLS, ICIS, US AIRS, DRYCLEANERS and MANIFEST databases. The record indicates this facility was a small quantity generator in 1999 and 2006, and a large quantity generator in 1985. No violations were noted for this location. Spill No. 1000628 was reported on 4/15/10 due to an overpacked drum containing waste oil observed on the sidewalk by the NYPD. The record indicates the spill was contained in the drum, and the spill case was closed on 5/5/10. Spill No. 0801499 was reported on 5/6/08 after gasoline storage tanks were encountered during excavation for new construction. According to a prior Phase I ESA, this property was occupied by a taxi garage (1938) and a dry cleaner (1950-present). During a Phase II investigation, semivolatile organic compounds (SVOCs), mercury, and the dry cleaning solvent tetrachloroethylene (PCE) was detected in soil samples, high PCE concentrations were detected in groundwater samples, and chlorinated compounds were detected in soil gas samples. Contaminated soil was excavated and disposed offsite. The spill case was closed on 8/18/09, and this location, listed as **388 Bridge Street (384-394 Bridge Street)** on the NY BROWNFIELDS, INST CONTROLS and ENG CONTROLS databases, was accepted to the Brownfield Cleanup Program on 8/12/09. The record indicates remedial actions achieved restricted residential use soil cleanup objectives, the residual contamination was addressed with a site management plan, and a sub-slab depressurization system (SSDS) and soil vapor extraction system (SVE) were installed in the new building. A Certification of Completion was issued on 12/19/13. Based on the information reviewed, these listings are not considered a REC.

The LTANKS database contains 58 listings, 31 of which are upgradient. All upgradient LTANKS cases are closed and are not considered RECs.

The SPILLS database contains 41 spills, nine of which are upgradient. All upgradient SPILLS cases are closed and are not considered RECs.

Several downgradient facilities appear on the NPL, SWF/LF, NY VCP, ERP, FUDS, ROD, and NY HSWDS databases and are not considered RECs.

Nearby sites are also located on the SEMS-ARCHIVE, RCRA-LQG, RCRA-SQG, RCA-CESQG, NY SHWS, UST/AST, NY TANKS, RCRA-NonGen, MANIFEST, and NY E-DESIGNATION databases. Based on a review of these records, these facilities are not RECs.

One potential on-Site REC, the listing for **New York Telephone** on the UST database was identified based upon a review of the regulatory database.

4.1.2 FOIL Requests

On December 29, 2017, Freedom of Information Law (FOIL) requests for information pertaining to the Site were filed with the following state and city agencies: New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), New York City Department of Environmental Protection (NYCDEP), New York City Department of Health and Mental Hygiene, (NYCDOHM) and the New York City Fire Department (FDNY). To date, no responses have been received. If any future response changes the conclusions of this report, Tenen will issue an addendum to this Phase I ESA

5.0 SITE RECONNAISSANCE

On January 3, 2018, Sara Babyatsky of Tenen Environmental conducted Site reconnaissance at the Site and adjoining properties. The weather was partly cloudy and in the mid 20-degrees Fahrenheit. Ms. Babyatsky was accompanied by an employee of the children's center currently occupying the Site.

5.1 Site Observations

The Site, located at 101 Fleet Place, Brooklyn, NY, is developed with a one-story building, and occupied by the Duffield Children's Center. The building does not contain a cellar.

The building contains multiple classrooms and offices, a kitchen, and a central courtyard. Calcium chloride pellets, maintenance and cleaning products were stored in maintenance rooms. No evidence of a release was observed. Floor drains were observed throughout the building and were free of chemical stains and discharges. An air filtration system was observed on the roof.

A vent pipe was observed on the front exterior of the Site building. However, no fuel oil storage was observed within the building. Monitoring wells were observed adjacent to the eastern and western site boundaries.

The building is connected to public and/or publically regulated utilities, including electric, stormwater and sewer. The building utilizes natural gas and HVAC units.

A summary of the Site reconnaissance is included in the table below:

Summary of Site Reconnaissance Features

Feature	Present on-Site
Aboveground storage tanks (ASTs) or evidence of ASTs	No
Underground storage tanks (USTs) or evidence of USTs	Yes*
Strong, pungent, or noxious odors	No
Pools of liquid likely to be hazardous materials or petroleum products	No
Drums	No
Unidentified substance containers	No
PCB-containing equipment	No
Subsurface hydraulic equipment	No
Heating/ventilation/air conditioning (HVAC)	No
Stains or corrosion on floors, walls, or ceilings (other than water)	No
Floor drains or sewer pit	Yes
Pits, ponds, or lagoons	No
Stained soil and/or pavement	No
Stressed vegetation	No
Waste or wastewater discharges to surface or surface waters on subject site (including stormwater)	No
Wells (irrigation, domestic, dry, injection, abandoned, monitoring)	Yes (adjacent to Site)
Septic systems	No

*A vent pipe was observed on the front exterior of the Site building; no evidence of a UST was observed within the building.

No RECs were identified at the Site during reconnaissance.

5.2 Adjoining and Surrounding Properties

The surrounding area is mixed residential and commercial. The Site is bordered by Myrtle Avenue to the north, Willoughby Street to the south, Fleet Place to the west, and Ashland Place to the east. Adjoining properties include:

Direction	Use
North	High-rise mixed residential/commercial building with parking lot.
Northwest	High-rise mixed residential/commercial building.
South	Fifteen-story residential building with parking lot.
East	Fifteen-story residential building with parking lot.
West	Three-story commercial building and parking lot.

The surrounding properties are predominantly residential and commercial. No evidence of a REC was observed on the surrounding properties.

5.3 Radon

While not specifically included in the Phase I ESA scope of work, Tenen performed an assessment of the property for the potential presence of radon. The findings are described below.

5.3.1 Radon

The site is located within EPA Zone 3 for radon. This zone contains an indoor average level of less than 2 picoCuries per liter, which is the lowest designation. Therefore, radon does not appear to be an environmental concern at this Site.

6.0 FINDINGS / OPINIONS

Tenen has conducted a review of ascertainable records and historical documentation in relation to the Site, adjacent properties and those within standard search radii. Site reconnaissance was conducted.

The Site, located at 101 Fleet Place, Brooklyn, NY (Tax Block 2061, Lot 100) is an irregular-shaped parcel on the east side of Fleet Place, and between Myrtle Avenue and Willoughby Street. The total Site area is approximately 20,000 square feet (SF). The property has approximately 130 feet of frontage along Fleet Place and a lot depth of approximately 170 feet. The Site is occupied by a one-story day care center. Monitoring wells were observed offsite adjacent to the eastern and western Site boundaries. Additional information regarding these wells was not available and they may be associated with investigations on offsite properties. The presence of these wells is not considered a REC. A FOIL request has been submitted regarding the multiple closed spills on a nearby upgradient property. If the information received changes the conclusions of this report, Tenen will issue an addendum to this Phase I ESA.

The 1887 Sanborn map depicts the Site developed with small residential buildings and a church. A commercial building is depicted on the 1904 map. By 1915, the church was replaced with four residential buildings, and by 1938 this area of the Site was vacant. Prior to 1969, a one-story building was constructed and occupied by the N.Y. Telephone Co. Garage (1969-1993) and a children center (1995-2007). The city directory listings indicate historic residential use (1928-1934) and recent commercial use of the Site, including a construction company (2010-2014) and the Duffield Children Center (1997-2005).

The adjoining properties were predominantly depicted with low-rise commercial and residential buildings in the 1887-1915 Sanborn maps. An east adjoining property was occupied by a chapel (1887-1915), a kindergarten (1915), a boy's club (1938) and novelty manufacturing (1950). Between 1938 and 1950, several adjoining buildings were demolished. An auto repair facility was identified on an east adjoining property on the 1950 map. The west adjoining properties were depicted with a lumber yard on the 1938 map, redeveloped with a two-story building prior to 1950 and occupied by a manufacturing facility (1950), a warehouse (1977-2002), and a school (2002-2007). Prior to 1969, the Site block and adjoining blocks to the northwest, east, and southeast were redeveloped as one block, with commercial properties occupying the north adjoining properties and a housing development and associated parking lots occupying the east and south adjoining properties. No changes to use are shown through 2002. A parking lot is identified on a west adjoining property on maps dated 2003-2007. The north adjoining properties appear vacant on the 2007 map. The city directory listings document residential and commercial use.

All Sanborn maps (1887-2007) identified a mix of residential, commercial, and industrial uses in the surrounding area. Manufacturing uses included dyer and bleach manufacturing (1904-1915), chemical manufacturing (1904), wagon manufacturing (1904-1915), soap manufacturing (1950), unspecified manufacturing (1915 and 1986-2007), and metalworking. (1915 and 1950), a laboratory (1938-1950), a tannery (1904), and a dry cleaner (1950). Numerous garages, filling stations, and auto repair shops with gasoline storage tanks were depicted. While uses of individual lots may have changed, the nature of the surrounding area is depicted as relatively constant through 2007, the date of the most recent map.

Regarding the Site and adjoining/surrounding properties, the results of the city directory, historic topographic map and aerial photograph review are generally consistent with the usage depicted on the historic Sanborn maps, although the city directory listings provide additional information on adjoining property uses. Historic uses of the Site were identified as public/institutional, residential, and commercial, including a garage (1969-1993). The presence of underground storage tanks and spills associated with the Site are addressed in the database section below and, based on the information in the database listings, the historic use of the Site as a garage is not considered a REC. Manufacturing was identified on east and west adjoining properties, and auto repair on an east adjoining property. These historic uses of the east

and west adjoining properties likely involved the use and disposal of hazardous materials and petroleum and are considered RECs.

Uses of surrounding properties have included manufacturing, including chemical, garages and auto filling stations with underground gasoline storage, auto repair, metal works, a tannery, and dry cleaning. Uses of the surrounding properties likely involved the use and disposal of hazardous materials and petroleum and are considered potential RECs; however, based on the hydrogeology of the surrounding area and the location of the majority of these historic offsite uses relative to the Site, these uses are not considered RECs.

Listings for the Site were identified on the NY UST and LTANKS database, referencing one 1,200-gallon UST containing #2 fuel oil and five 550-gallon steel USTs containing gasoline. The six tanks were closed on 3/1/93, and the site status is given as unregulated-closed. Spill Number 8902455 was reported on 6/8/89 due to tank test failure/air pressure loss and the spill case was closed on 6/23/04. The closed spill case is considered a historic REC (HREC), and is not a REC. Historic underground storage of fuel oil and gasoline on the Site is considered a potential REC. However, there are no open spills or releases recorded at this location and no indications of a release were observed during the Site reconnaissance. This listing is not considered a REC. As discussed previously, FOIL requests have been filed with NYSDEC and FDNY requesting additional information. If the information received changes the findings of this report, Tenen will issue an addendum to the Phase I ESA.

The database search indicated numerous listings of properties within the standard search radii on multiple regulatory databases. Many of these listings are located a significant distance from and/or downgradient of the Site. All upgradient leaking tank and spill cases have been closed and are not considered RECs.

8.0 DECLARATION

I, Matthew Carroll, declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in Section 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training and experience to assess a site of the nature, history and setting of the subject Site. I have developed and performed the All Appropriate Inquires in conformance with the standards and practice set forth in 40 CFR Part 312.



_____

Matthew Carroll
Environmental Professional

7.0 CONCLUSIONS

Tenen has performed a *Phase I Environmental Site Assessment*, in conformance with the scope and limitations of ASTM Practice E 1527-13, for 101 Fleet Place, Kings County, New York. Any exceptions to, or deletions or deviations from this practice are described in Section 1.4 of this report. This assessment has revealed *no evidence of recognized environmental conditions* in connection with the property with the exception of the following:

- historic use of the east adjoining properties for manufacturing and auto repair;
- historic use of the west adjoining properties for manufacturing.

9.0 REFERENCES

- The EDR Radius Map with GeoCheck, Environmental Data Resources, December 27, 2017
- Certified Sanborn Map Report, Environmental Data Resources, December 27, 2017
- The EDR-City Directory Report, Environmental Data Resources, December 27, 2017
- New York City Department of Buildings records, accessed December 27, 2017
- The EDR Historical Topographic Map Report, Environmental Data Resources, December 27, 2017
- Digital Tax Map, New York City Department of Finance, accessed December 27, 2017
- The EDR Aerial Photo Decade Package, Environmental Data Resources, December 27, 2017
- Zoning Map #16c, New York City Planning Commission, effective August 13, 2015
- FEMA Flood Insurance Rate Maps FM3604970203F

APPENDIX III

TPF MEMO

Philip Habib & Associates

Engineers and Planners ● 102 Madison Avenue ● New York, NY 10016 ● 212 929 5656 ● 212 929 5605 (fax)

DRAFT TECHNICAL MEMORANDUM

TO: New York City Department of City Planning

FROM: Philip Habib & Associates

DATE: September 21, 2018

PROJECT: 101 Fleet Place (PHA #1674)

RE: Transportation Planning Factors

This memorandum summarizes the transportation planning factors to be used for the 101 Fleet environmental assessment statement (EAS) transportation analyses. The Proposed Project is a predominantly commercial development located at 101 Fleet Place in Brooklyn Community District (CD) 2. For environmental review purposes, two reasonable worst-case development scenarios (RWCDSs) were identified for the proposed actions: the Proposed Project with approximately 209,354 gross square feet (gsf) of office uses, and an Alternate Residential RWCDS, which assumes the development of 259 DUs in place of the proposed commercial office uses. Both the Proposed Project and the Alternate Residential RWCDS exceed the *City Environmental Quality Review* (CEQR) *Technical Manual* preliminary screening thresholds. Provided below are estimates of the RWCDS peak incremental travel demand, along with a discussion of trip assignment methodologies and study area definitions.

THE PROPOSED ACTIONS

The applicant, Fleet Center, Inc., is seeking a series of discretionary actions from the New York City Planning Commission (CPC) to facilitate the development of 101 Fleet Place (Brooklyn Block 2061, Lot 100, the "development site") with a 209,354-gsfcommercial building (the "Proposed Project"). Specifically, the applicant is seeking the following: (1) a zoning map amendment, which would rezone the applicant-owned Block 2061, Lot 100, in addition to portions of adjacent Lots 80 and 110 (the "rezoning area") from R6 to C6-4 and extend the Special Downtown Brooklyn (DB) District to include the entirety of the rezoning area; and (2) a zoning text amendment to designate the rezoning area as a Mandatory Inclusionary Housing (MIH) Area (collectively, the "proposed actions").The Proposed Project is expected to be completed and operational in 2021.

Reasonable Worst-Case Development Scenario (RWCDS)

In order to assess the potential effects of the proposed actions, a reasonable worst-case development scenario (RWCDS) for both the future without the proposed actions (the "No-Action" condition) and the future with the proposed actions (the "With-Action" condition) will be forecasted for an analysis year, or Build year, of 2021. The No-Action condition represents the baseline against which the effects of the proposed actions will be compared in the EAS. The effect of the proposed actions, therefore, represents the

incremental effect on conditions that would result from the net change in development between the No-Action and With-Action conditions (i.e., the "project increment").

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

In the future without the proposed actions, the rezoning area's existing R6 zoning would remain in place. Under the No-Action scenario, the existing conditions within the rezoning area would remain, and no changes to land use are expected to occur. The 16,482-gsf one-story brick building occupied by Duffield Children's Center would remain on the development site in the No-Action scenario.

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

Under the With-Action scenario, the requested zoning map and text amendments would be approved, allowing the applicant to construct the Proposed Project. The proposed actions would allow for a maximum commercial/community facility FAR of 10.0 and a maximum residential FAR of 12.0. The Proposed Project would maximize the available 10.0 commercial FAR. While other commercial uses would be permitted under the proposed zoning, the proposed office use represents the worst-case for environmental review purposes; hotel uses (also prevalent in the surrounding area) generate significantly less peak hour traffic than office uses and, therefore, do not represent the worst-case scenario. In addition, as the proposed actions would increase the maximum permitted residential FAR to 12.0, a second RWCDS (the "Alternate Residential RWCDS") will also be assessed, below.

Under the Alternate Residential RWCDS, it is assumed that a 34-story (380-foot-tall) 258,904-gsf residential building containing 259 total dwelling units (DUs, assuming 1,000 sf per DU) and 36 accessory parking spaces would be constructed on the development site. Of the 259 DUs, either 65 DUs (25 percent of units) or 78 DUs (30 percent of units) would be affordable at or below 80 percent AMI. The residential FAR for the development site would be 12.0, the maximum permitted residential FAR pursuant to the proposed zoning map and text amendments.

Project Increment

Compared to the No-Action condition, the Proposed Project would result in the incremental development of 209,354 gsf of commercial office space and a net reduction of 16,482 gsf of community facility floor area. In terms of population, the Proposed Project is expected to generate 800 incremental employees, as compared to the 2021 No-Action condition. Compared to the No-Action condition, the Alternate Residential RWCDS would result in the incremental development of 259 DUs (including up to 78 affordable DUs), as well as a net increase of 36 accessory parking spaces. In terms of population, the Alternate Residential RWCDS would generate 521 incremental residents and result in a net reduction of 27 employees, as compared to the 2021 No-Action condition.

LEVEL 1 SCREENING

A Level 1 trip generation screening assessment was conducted to estimate the number of peak hour person and vehicle trips by mode expected to be generated by the two RWCDS to determine which represented the worst-case for environmental review purposes. The peak hour person and vehicle trip estimates were then compared to the *CEQR Technical Manual* analysis thresholds to determine if a Level 2 screening is warranted.

The travel demand assumptions used for the Level 1 assessment, including detailed travel demand forecasts, are discussed below and presented in **Tables 1** and **2**.

Transportation Planning Factors

Office

The forecast of travel demand for the Proposed Project's office component used a weekday trip generation rate of 18.0 person trips per 1,000 sf, a Saturday trip generation rate of 3.9 person trips per DU, and temporal distributions of 12.0 percent, 15.0 percent, 14.0 percent, and 17.0 percent for the weekday AM, midday, and PM and Saturday midday peak hours, respectively, as per the *CEQR Technical Manual*. The 2-3 PM peak hour temporal distribution of 11.6 percent was based on the 2014 *Atlantic Yards Arena and Redevelopment Final Supplemental Environmental Impact Statement (FSEIS).* The modal splits, directional splits, and auto and taxi occupancy rates were also based on this 2014 FSEIS, as well as New York City Department of Transportation (DOT) mode choice surveys for Downtown Brooklyn. Truck trip generation rates were based on the *CEQR Technical Manual*.

Residential

The forecast of travel demand for the Alternate Residential RWCDS's residential units used a weekday trip generation rate of 8.075 person trips per dwelling unit (DU), a Saturday trip generation rate of 9.6 person trips per DU, and temporal distributions of 10.0 percent, 5.0 percent, 11.0 percent, and 8.0 percent for the weekday AM, midday, and PM and Saturday midday peak hours, respectively, as per the *CEQR Technical Manual*. The 2-3 PM peak hour temporal distribution of 6.0 percent was based on the 2014 *Atlantic Yards Arena and Redevelopment FSEIS.* The auto and taxi occupancy rates of 1.4 and 1.3 persons per vehicle were also based on this 2014 FSEIS. The residential units' modal split estimated 9.8 percent, 0.4 percent, 69.2 percent, 1.4 percent and 19.2 percent for private auto, taxi, subway, bus, and walk-only/other modes, respectively, as per the 2012-2016 American Community Survey (ACS) Means of Transportation to Work Table for Brooklyn census tracts 15 and 31. Truck trip generation rates were based on the *CEQR Technical Manual*.

Travel Demand Forecast

Tables 3 and **4** present the person and vehicle trips expected to be generated by the proposed project and Alternate Residential RWCDS, respectively. As presented in **Table 3**, the Proposed Project would generate approximately 452, 564, 528, and 139 person trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. In comparison, the Alternate Residential RWCDS would generate 210, 106, 230, and 198 person trips in these same peak hours (refer to **Table 4**). As the Proposed Project would generate more trips than the Alternate Residential RWCDS, the Proposed Project represents the worst-case for transportation analysis purposes. A discussion of the Proposed Project's incremental person trips and vehicle trips, by mode, is provided below.

Table 1: Travel Demand Forecast Assumptions – Proposed Project

Land Use:		**Office**	
Size/Units:		209,354 gsf	
Trip Generation:		(1)	
	Weekday	18.0	
	Saturday	3.9	
		per 1,000 sf	
Temporal Distribution:		(1,2)	
	AM	12.0%	
	MD	15.0%	
	PM	14.0%	
	SatMD	17.0%	
		(2, 3)	
Modal Splits:		AM/PM	MD/Sat MD
	Auto	8.0%	2.0%
	Taxi	2.0%	1.0%
	Subway/Railroad	68.0%	7.0%
	Bus	4.0%	7.0%
	Walk/Other	18.0%	83.0%
		100.0%	100%
		(2)	
In/Out Splits:		In	Out
	AM	96.0%	4.0%
	MD	39.0%	61.0%
	PM	5.0%	95.0%
	Sat MD	60.0%	40.0%
Vehicle Occupancy:		(2)	
	Auto	1.42	
	Taxi	1.42	
Truck Trip Generation:		(1)	
		0.32	
		per 1,000 sf	
		(1)	
	AM	10.0%	
	MD	11.0%	
	PM	2.0%	
	Sat MD	11.0%	
		In	Out
		50.0%	50.0%

Notes :

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

(2) Source: Atlantic Yards Arena and Redevelopment FSEIS, 2014

(3) Based on DOT office mode choice surveys for Downtown Brooklyn

Table 2: Travel Demand Forecast Assumptions – Alternate Residential RWCDS

Land Use:		**Residential**	
Size/Units:		259 DUs	
Trip Generation:		(1)	
	Weekday	8.1	
	Saturday	9.6	
		per DU	
Temporal Distribution:		(1,2)	
	AM	10.0%	
	MD	5.0%	
	PM	11.0%	
	SatMD	8.0%	
Modal Splits:		(3) All Periods	
	Auto	9.8%	
	Taxi	0.4%	
	Subway/Railroad	69.2%	
	Bus	1.4%	
	Walk/Other	19.2%	
		100.0%	
In/Out Splits:		(2) In	Out
	AM	20.0%	80.0%
	MD	51.0%	49.0%
	PM	65.0%	35.0%
	Sat MD	50.0%	50.0%
Vehicle Occupancy:		(2, 3)	
	Auto	1.30	
	Taxi	1.42	
Truck Trip Generation:		(1) Weekday	Saturday
		0.06	0.02
		per DU	
		(1)	
	AM	12.0%	
	MD	9.0%	
	PM	2.0%	
	Sat MD	9.0%	
		In	Out
		50.0%	50.0%

Notes :

(1) *2014 City Environmental Quality Review (CEQR) Technical Manual.*
(2) Source: Atlantic Yards Arena and Redevelopment FSEIS, 2014
(3) 2012-2016 ACS Journey to Work data for Census for Brooklyn tracts 15 and 31.

Table 3: Travel Demand Forecast – Proposed Project

Land Use:		**Office**		
Size/Units:		209,354 gsf		
Peak Hour Trips:				
	AM	452		
	MD	564		
	PM	528		
	Sat MD	139		
Person Trips:				
		In	Out	***Total***
AM	**Auto**	36	1	***37***
	Taxi	9	0	***9***
	Subway/Railroad	295	12	***307***
	Bus	17	1	***18***
	Walk/Other	78	3	***81***
	Total	435	17	***452***
		In	Out	***Total***
MD	**Auto**	4	7	***11***
	Taxi	2	3	***5***
	Subway/Railroad	15	24	***39***
	Bus	15	24	***39***
	Walk/Other	183	287	***470***
	Total	219	345	***564***
		In	Out	***Total***
PM	**Auto**	2	40	***42***
	Taxi	1	10	***11***
	Subway/Railroad	18	341	***359***
	Bus	1	20	***21***
	Walk/Other	5	90	***95***
	Total	27	501	***528***
		In	Out	***Total***
Sat MD	**Auto**	2	1	***3***
	Taxi	1	1	***2***
	Subway	6	4	***10***
	Bus	6	4	***10***
	Walk/Other	68	46	***114***
	Total	83	56	***139***
Vehicle Trips :				
		In	Out	***Total***
AM	**Auto**	25	1	***26***
	Taxi	6	0	***6***
	Taxi Balanced	6	6	***12***
	Truck	3	3	***6***
	Total	34	10	***44***
		In	Out	***Total***
MD	**Auto**	3	5	***8***
	Taxi	1	2	***3***
	Taxi Balanced	3	3	***6***
	Truck	4	4	***8***
	Total	10	12	***22***
		In	Out	***Total***
PM	**Auto**	1	28	***29***
	Taxi	1	7	***8***
	Taxi Balanced	8	8	***16***
	Truck	1	1	***2***
	Total	10	37	***47***
		In	Out	***Total***
Sat MD	**Auto**	1	1	***2***
	Taxi	1	1	***2***
	Taxi Balanced	2	2	***4***
	Truck	4	4	***8***
	Total	7	7	***14***

	With-Action Traffic Volumes			**Existing/No-Action Traffic Volumes***			**Net Increment**		
Total Auto Trips	In	Out	***Total***	In	Out	***Total***	In	Out	***Total***
AM	34	10	***44***	11	11	***22***	23	-1	***22***
MD	10	12	***22***	1	1	***2***	9	11	***20***
PM	10	37	***47***	9	9	***18***	1	28	***29***
SAT	7	7	***14***	-	-	-	7	7	***14***

*Based on 9/20/16 traffic counts.

Table 4: Travel Demand Forecast – Alternate Residential RWCDS

Land Use:		**Residential**		
Size/Units:		259	DUs	
Peak Hour Trips:				
	AM	210		
	MD	106		
	PM	230		
	Sat MD	198		
Person Trips:				
		In	Out	***Total***
AM	**Auto**	4	16	***20***
	Taxi	0	1	***1***
	Subway/Railroad	29	117	***146***
	Bus	1	2	***3***
	Walk/Other	8	32	***40***
	Total	42	168	***210***
		In	Out	***Total***
MD	**Auto**	5	5	***10***
	Taxi	0	0	***0***
	Subway/Railroad	38	36	***74***
	Bus	1	1	***2***
	Walk/Other	10	10	***20***
	Total	54	52	***106***
		In	Out	***Total***
PM	**Auto**	15	8	***23***
	Taxi	1	0	***1***
	Subway/Railroad	103	56	***159***
	Bus	2	1	***3***
	Walk/Other	29	15	***44***
	Total	150	80	***230***
		In	Out	***Total***
Sat MD	**Auto**	10	10	***20***
	Taxi	0	0	***0***
	Subway	69	69	***138***
	Bus	1	1	***2***
	Walk/Other	19	19	***38***
	Total	99	99	***198***
Vehicle Trips :				
		In	Out	***Total***
AM	**Auto**	3	12	***15***
	Taxi	0	1	***1***
	Taxi Balanced	1	1	***2***
	Truck	1	1	***2***
	Total	5	14	***19***
		In	Out	***Total***
MD	**Auto**	4	4	***8***
	Taxi	0	0	***0***
	Taxi Balanced	0	0	***0***
	Truck	1	1	***2***
	Total	5	5	***10***
		In	Out	***Total***
PM	**Auto**	12	6	***18***
	Taxi	1	0	***1***
	Taxi Balanced	1	1	***2***
	Truck	0	0	***0***
	Total	13	7	***20***
		In	Out	***Total***
Sat MD	**Auto**	8	8	***16***
	Taxi	0	0	***0***
	Taxi Balanced	0	0	***0***
	Truck	0	1	***1***
	Total	8	9	***17***

	With-Action Traffic Volumes			**Existing/No-Action Traffic Volumes***			**Net Increment**		
Total Auto Trips	In	Out	***Total***	In	Out	***Total***	In	Out	***Total***
	5	14	***19***	11	11	***22***	-6	3	***-3***
	5	5	***10***	1	1	***2***	4	4	***8***
	13	7	***20***	9	9	***18***	4	-2	***2***
	8	9	***17***	-	-	-	8	9	***17***

Traffic

As shown in **Table 3**, accounting for displaced existing vehicle trips, the travel demand forecast indicates that the Proposed Project would generate a project increment of approximately 22, 20, 29, and 14 vehicle trips (in and out combined) in the weekday AM, midday, and PM and Saturday midday peak periods, respectively. As the Proposed Project would generate fewer than 50 trips in all peak hours, no further traffic analysis is warranted, and no significant adverse impacts are anticipated.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) specified in the *CEQR Technical Manual*, detailed transit analyses are not required if the proposed project is projected to result in less than 200 peak hour rail or 50 peak hour bus transit riders, because a proposed development that generates such a low number of transit riders is unlikely to create a significant adverse impact on the current transit facilities.

As shown in **Table 3**, the approximate hourly subway trips generated by the Proposed Project would be 307, 39, 359, and ten (in and out combined) trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. As the Proposed Project would generate more than 200 subway trips in the weekday AM and PM peak hours, a Level 2 subway trip assignment is warranted, which is provided below.

As also shown in **Table 3**, the approximate hourly public bus trips generated by the Proposed Project would be 18, 39, 21, and ten trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. As the Proposed Project would generate fewer than 200 bus person-trips in all peak hours and less than 50 new bus riders per bus and direction, no further analysis is warranted, and no significant adverse bus impacts are anticipated.

Pedestrians

Analyses of pedestrian conditions focuses on elements where a substantial number of trips are generated by an action. These elements include sidewalks, corner areas, and crosswalks. As shown in **Table 3**, the Proposed Project would generate 81, 470, 95, and 114 walk-only trips in the weekday AM, midday, and PM and Saturday midday peak hours, respectively. Accounting from walk trips to/from area public transit and public parking facilities, the Proposed Project would generate a total of 443, 559, 517, and 137 walk trips in these same peak hours. As the number of incremental peak hour pedestrian trips would exceed the *CEQR Technical Manual* analysis thresholds in all weekday peak hours, a Level 2 screening assessment was undertaken, which is presented below. With less than 200 pedestrian trips anticipated in the Saturday midday peak hour, no further analysis of this peak hour is warranted, and no significant adverse impacts are anticipated.

LEVEL 2 SCREENING

A Level 2 screening assessment involves the assignment of project-generated trips to the study area street and transit networks 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.

Transit – Subway

The Proposed Project would generate more than 200 subway trips in the weekday AM and PM peak hours, and, therefore, a Level 2 subway trip assignment is warranted. Project-generated peak hour subway trips were distributed to area subway stations based on Metropolitan Transportation Authority (MTA) ridership data for the five stations closest to the development site: the DeKalb Avenue (B/Q/R) Station, the Hoyt Street (2/3) Station, the Hoyt-Schermerhorn (A/C/G) Station, the Nevins Street (2/3) Station, and the Jay Street-MetroTech (A/C/F/R) Station. The resultant weekday AM and PM in/out trips by station are presented in **Table 5**, below. As presented in the table, no stations are expected to experience 200 or more incremental subway person trips in the weekday AM or PM peak hours. As such, a detailed subway station analysis is not warranted in accordance with CEQR. In addition, as no one line would experience 200 or more trips in one direction, a detailed subway line haul analysis is not warranted, and no significant adverse line haul impacts are anticipated.

Table 5: Subway Trip Assignment by Station

Station	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
DeKalb Avenue (B/Q/R)	59	2	61	4	69	73
Hoyt Street (2/3)	24	1	25	1	28	29
Hoyt-Schermerhorn (A/C/G)	33	2	35	2	39	41
Nevins Street (2/3/4/5)	39	2	41	2	45	47
Jay Street-MetroTech (A/C/F/R)	114	6	146	9	160	169
Total	***295***	***12***	***307***	***18***	***341***	***359***

Pedestrians

As shown in **Table 3**, the number of incremental peak hour pedestrian trips would exceed the *CEQR Technical Manual* analysis thresholds in all weekday peak hours. Walk-only, walk trips to transit, and walk trips to public parking facilities would each have a different assignment pattern. Walk-only trips were assigned evenly through the local street network, while walk trips to transit and public parking facilities were assigned based on the transit and vehicle assignments, respectively. As shown in **Figure 1**, the following pedestrian elements were selected for detailed analysis as they would experience an increase of 200 or more pedestrian trips in any one peak hour:

SIDEWALKS

- East sidewalk on Fleet Place between the Project Site and Willoughby Street
- East sidewalk on Fleet Place between the Project Site and Myrtle Avenue

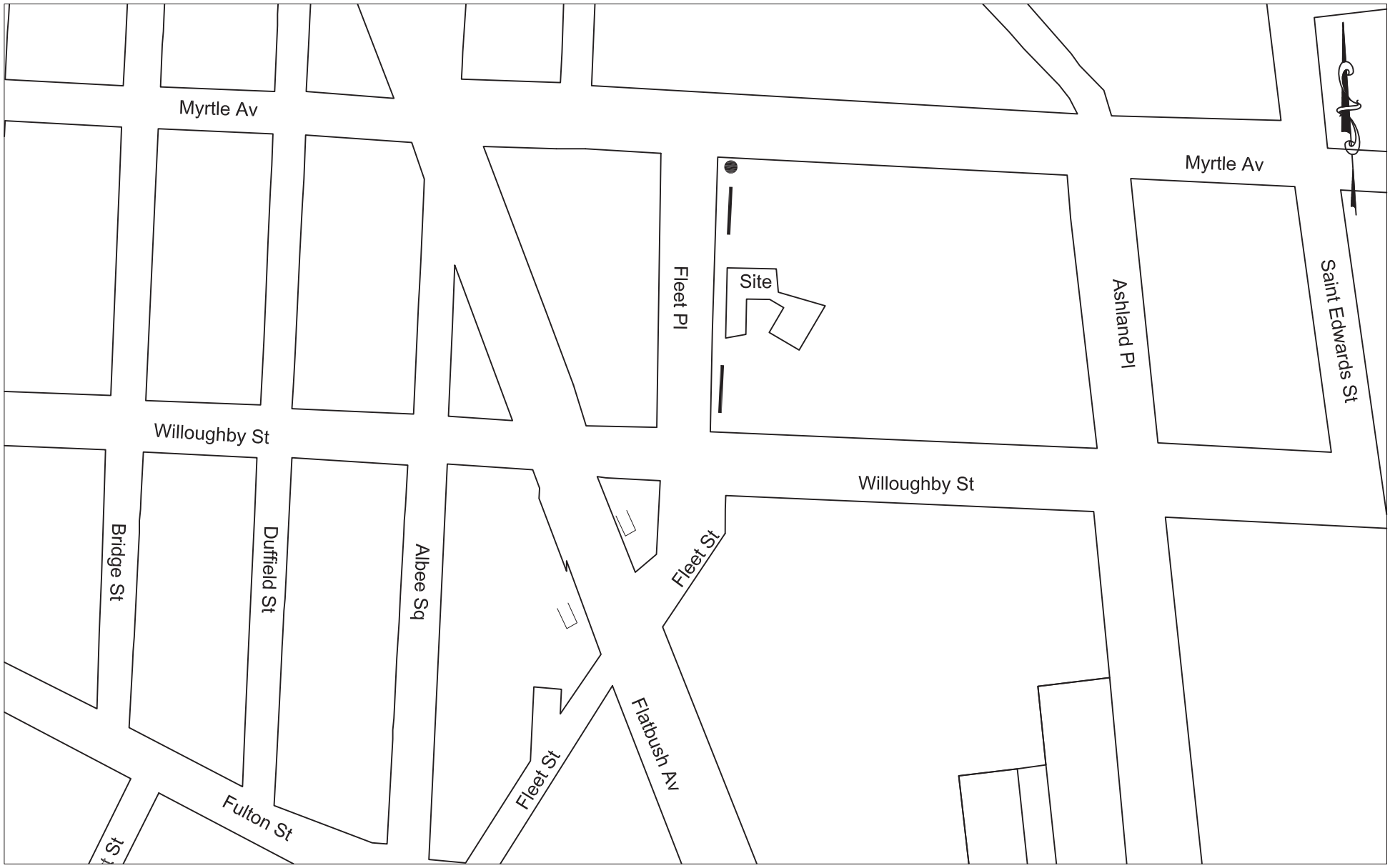
CORNER AREAS

- Myrtle Avenue and Fleet Place – southeast corner

CROSSWALKS

- Myrtle Avenue and Fleet Place – south crosswalk

At these locations, a detailed pedestrian analysis would be warranted in the weekday AM, midday, and PM peak hours and will be provided in the EAS. As noted above in the Level 1 screening assessment, the Proposed Project is anticipated to generate less than 200 new pedestrian trips anticipated in the Saturday midday peak



Legend:

Sidewalk to be Analyzed

Corner Area to be Analyzed

101 Fleet Place

Figure 1
Pedestrian Analysis Locations

hour, and a detailed pedestrian analysis is therefore not warranted in this peak hour. It should be noted that while the 200-trip CEQR analysis threshold would also be exceeded at corner areas at the intersection of Fleet Place and Willoughby Street, this intersection is unsignalized and its crosswalks and corner areas can therefore not be analyzed per *CEQR Technical Manual* criteria.

Parking

According to the *CEQR Technical Manual*, a parking analysis is generally not required if a detailed traffic analysis is not warranted. As the Proposed Project does not warrant a detailed traffic analysis, as discussed above, a detailed parking analysis is not required.

APPENDIX IV

AGENCY CORRESPONDENCE

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ENVIRONMENTAL REVIEW

Project number: DEPARTMENT OF CITY PLANNING / LA-CEQR-K
Project:
Address: 101 FLEET PLACE, **BBL:** 3020610100
Date Received: 9/25/2017

[X**] No architectural significance**

[X**] No archaeological significance**

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[ ] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[ ] May be archaeologically significant; requesting additional materials

Gina Santucci

10/4/2017

SIGNATURE DATE
Gina Santucci, Environmental Review Coordinator

File Name: 32828_FSO_GS_10042017.doc

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ENVIRONMENTAL REVIEW

Project number: DEPARTMENT OF CITY PLANNING / LA-CEQR-K
Project:
Address: 101 FLEET PLACE, **BBL:** 3020610100
Date Received: 1/31/2018

[X**] No architectural significance**

[X**] No archaeological significance**

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[ ] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[ ] May be archaeologically significant; requesting additional materials

Comments:

The LPC is in receipt of the shadows assessment of 1/31/18. There are no concerns.

Gina Santucci 2/14/2018

SIGNATURE DATE
Gina Santucci, Environmental Review Coordinator

File Name: 32828_FSO_GS_02142018.doc