Environmental Assessment Statement
and
Supplemental Report

for

Broadway & 11th Street Rezoning
11-01 33rd Avenue
Astoria, NY 11106

Prepared by:

Environmental Studies Corp.
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April 2021

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* Broadway and 11th Street Rezoning

3. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency) 21DCP022Q	BSA REFERENCE NUMBER (if applicable)
ULURP REFERENCE NUMBER (if applicable) 210025ZMQ; N210026ZRQ	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA)

4a. *Lead Agency Information*			**4b. *Applicant Information***		
NAME OF LEAD AGENCY New York City Department of City Planning (NYC DCP)			NAME OF APPLICANT 11 St & Broadway LLC		
NAME OF LEAD AGENCY CONTACT PERSON Olga Abinader, Director, Environmental Assessment and Review Division			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON Frank St. Jacques		
ADDRESS 120 Broadway, 31st Floor			ADDRESS 520 Madison Avenue, 20th Floor		
CITY New York	STATE NY	ZIP 10271	CITY New York	STATE NY	ZIP 10022
TELEPHONE 212-720-3621	EMAIL oabinad@planning.nyc.gov		TELEPHONE (212) 259-6474	EMAIL frank.stjacques@akerman.com	

5. *Project Description*

The Applicant, 11 St & Broadway LLC, is requesting the following actions:

1. A Zoning Map Amendment to change the existing R5 zoning district mapped on Block 316, Lots 1 and 13 (the Affected Area) to a Special Mixed Use (MX) district pairing an R7A residential district with an M1-4 manufacturing district;

2. A Zoning Text Amendment modifying Zoning Resolution (ZR) Appendix F: Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas for Community District 1, Queens to establish the Project Area as a Mandatory Inclusionary Housing (MIH) Area; and

3. A Zoning Text Amendment to ZR Article XII, Chapter 3 [Special Mixed Use District] to establish a M1-4/R7A (MX) district in Northwest Ravenswood in Queens.

Collectively, these three actions are referred to as the "Proposed Actions" and all properties wholly or partially affected by these action are collectively known as the "Affected Area."

The Proposed Actions would facilitate the development on the Applicant-owned Development Site with an up to 7-story and cellar, 254,773 gross square foot (gsf)/226,556 zoning square foot (zsf) (4.58 floor area ratio [FAR]) mixed-use residential, commercial, and light manufacturing building with approximately 205 dwelling units of which 51 would be reserved as affordable pursuant to Mandatory Inclusionary Housing (MIH) Option 1 and 80 accessory parking spaces located in the cellar of the building.

For the purposes of the CEQR analysis, it is assumed that the building's 223,965 gsf of residential floor area would convert to 224 dwelling units based on the standard average unit size of 1,000 sf. For the purposes of a conservative analysis, the EAS assumes that 20% of the residential floor area as applied to the RWCDS 224 dwelling units would be reserved as affordable to households with incomes at or below 80% of the AMI resulting in 45 affordable units.

See attached Project Description.

Project Location

BOROUGH Queens	COMMUNITY DISTRICT(S) 1	STREET ADDRESS 11-01 33rd Avenue
TAX BLOCK(S) AND LOT(S) Queens Block 316, Lots 1 and 13		ZIP CODE 11106

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS The Affected Area is bounded by Broadway to the north, 12th Street to the east, 33rd Avenue to the south, and 11th Street to the west.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R5 | ZONING SECTIONAL MAP NUMBER 9a

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

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

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION Appendix F, Article 12, Chapter 3

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

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

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

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

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

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

- ☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC)
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL
- ☒ OTHER, explain: Dept. of Buildings Building Permit

***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.): 49,411

Waterbody area (sq. ft) and type: 0

Roads, buildings, and other paved surfaces (sq. ft.): 14,800 gsf buildings; 5,040 sf paved parking/storage area

Other, describe (sq. ft.): 26,590 (undeveloped/vacant)

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): 254,773

NUMBER OF BUILDINGS: 1

GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 254,773

HEIGHT OF EACH BUILDING (ft.): 75

NUMBER OF STORIES OF EACH BUILDING: 7

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: 49,411

The total square feet not owned or controlled by the applicant: 0

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: 49,411 sq. ft. (width x length) VOLUME OF DISTURBANCE: 988,220 cubic ft. (width x length x depth)

AREA OF PERMANENT DISTURBANCE: 49,411 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.)	223,965	19,709	0	11,098
Type (*e.g.,* retail, office, school)	224 units	Supermarket; local retail; artist studio	N/A	Wine distributor; floral production

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

If "yes," please specify: NUMBER OF ADDITIONAL RESIDENTS: 520 NUMBER OF ADDITIONAL WORKERS: 78

Provide a brief explanation of how these numbers were determined: Residents based on an average household size of 2.32 persons (per the 2014-2018 U.S. Census American Community Survey Estimates for Queens Census Tract 45) per dwelling unit and 224 units. Employees based on an assumption of 3 workers per 1,000 sf of commercial space (59 workers), 1 worker per 1,000 sf of light manufacturing space (11 workers), and 1 employee per 25 residential units (8 workers).

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

Has a No-Action scenario been defined for this project that differs from the existing condition? ☒ YES ☐ NO

If "yes," see Chapter 2, "Establishing the Analysis Framework" and describe briefly: The No-Action scenario under the existing R5 zoning mapped on the property would consist of one zoning lot developed with a total of 62 dwelling units within 62,199 gsf of residential floor area, 9,303 gsf of community facility space (Use Group 4 medical offices), and 72 accessory parking spaces. The building's total area would be 101,305 gsf.

9. *Analysis Year* CEQR Technical Manual Chapter 2

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

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 18

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

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: It is assumed that the Proposed Actions and associated development approval requirements (including ULURP) would be granted by and construction activities (including demolition) would commence by early 2022. It would take approximately 18 months to construct the Proposed Project on the Applicant's Development Site. For the purposes of a conservative analysis, it assumed the Project Build Year would be 2024.

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

☒ RESIDENTIAL ☒ MANUFACTURING ☒ COMMERCIAL ☒ PARK/FOREST/OPEN SPACE ☒ OTHER, specify: Institutional / Community Facility Uses

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 attached.		
(e) Is the project a large, publicly sponsored project?	☐	☒
○ If "yes," complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries?	☒	☐
○ If "yes," complete the Consistency Assessment Form. See attached.		
2. *SOCIOECONOMIC CONDITIONS*: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
○ Generate a net increase of 200 or more residential units?	☐	☒
○ Generate a net increase of 200,000 or more square feet of commercial space?	☐	☒
○ Directly displace more than 500 residents?	☐	☒
○ Directly displace more than 100 employees?	☐	☒
○ Affect conditions in a specific industry?	☐	☒
3. *COMMUNITY FACILITIES*: CEQR Technical Manual Chapter 6		
(a) Direct Effects		
○ Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, hospitals and other health care facilities, day care centers, police stations, or fire stations?	☐	☒
(b) Indirect Effects		
○ **Child Care Centers:** Would the project result in 20 or more eligible children under age 6, based on the number of low or low/moderate income residential units? (See Table 6-1 in Chapter 6)	☐	☒
○ **Libraries:** Would the project result in a 5 percent or more increase in the ratio of residential units to library branches? (See Table 6-1 in Chapter 6)	☐	☒
○ **Public Schools:** Would the project result in 50 or more elementary or middle school students, or 150 or more high school students based on number of residential units? (See Table 6-1 in Chapter 6)	☐	☒
○ **Health Care Facilities and Fire/Police Protection:** Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the proposed project change or eliminate existing open space?	☐	☒
(b) Is the project located within an under-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☒	☐
○ If "yes," would the proposed project generate more than 50 additional residents or 125 additional employees?	☒	☐
(c) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
○ If "yes," would the proposed project generate more than 350 additional residents or 750 additional employees?	☐	☐
(d) If the project in located an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	☐	☒

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

	YES	NO
involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?		
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	☐	☒
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or generate contaminated stormwater in a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): 18,564		
○ 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): 35,040,136		
(b) Would the proposed project affect the transmission or generation of energy?	☐	☒
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☒	☐
(b) If "yes," conduct the screening analyses, attach appropriate back up data as needed for each stage and answer the following questions:		
○ Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	☐	☒
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.*	☐	☐
○ Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?	☐	☒
If "yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway trips per station or line?	☐	☐
○ Would the proposed project result in more than 200 pedestrian trips per project peak hour?	☐	☒
If "yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?	☐	☐
14. *AIR QUALITY*: CEQR Technical Manual Chapter 17		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☒	☐
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☒	☐
○ If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed) See attached.	☐	☒
(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		

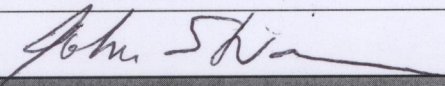
	YES	NO
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☐	☒
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach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

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
John Strauss, Environmental Studies Corp.	April 16, 2021

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).

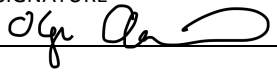
☐ **Conditional Negative Declaration:** A *Conditional Negative Declaration* (CND) may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. 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	LEAD AGENCY
Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME	DATE
Olga Abinader	April 16, 2021

SIGNATURE



NEGATIVE DECLARATION

Statement of No Significant Effect

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

Reasons Supporting this Determination

The above determination is based on information contained in this EAS, which finds the proposed actions sought before the City Planning Commission would not have a significant adverse impact on the environment. Reasons supporting this determination are noted below.

Land Use, Zoning, and Public Policy

A detailed analysis of land use, zoning, and public policy is included in the EAS. The proposed actions are a Zoning Map Amendment to rezone the project area (Queens Block 316, Lots 1 and 13) from an R5 district to a Special Mixed Use (MX) District pairing R7A/M1-4, a Zoning Text Amendment to establish a Mandatory Inclusionary Housing (MIH) area coterminous with the rezoning area, and a Zoning Text Amendment to establish a MX(R7A M1-4) district in Northwest Ravenswood in Queens. The project area is located in the Astoria neighborhood of Queens Community District 1. The surrounding area is a mix of residential, commercial, light industrial, community facility, open space, and parking uses. The floor area and bulk allowances of the proposed MX(R7A/M1-4) are similar to existing zoning regulations within the surrounding area. The proposed actions are anticipated to result in a change in land use on Lots 1 and 13 from residential to mixed residential, commercial and light industrial, however, given the existing mixed use character of the area, the change in land use and zoning would not constitute a significant adverse impact. The project area is also located in a coastal zone, and the analysis finds that the proposed actions are consistent with New York City's Waterfront Revitalization Program Policies. Therefore, the Proposed Actions would not result in significant adverse impacts to land use, zoning and public policy.

Open Space

A detailed analysis of open space is included in the EAS. The proposed actions would not result in any direct significant adverse impacts on any open space resources. In regards to indirect impacts to open space resources, while a decrease in the open space ratio (OSR) of 1.31% for the study area population would occur in an area with a relatively low existing open space ratio, the existing open space resources within the study area were found to be in acceptable condition and contain a variety of active and passive recreation uses. While the active OSR would continue to be below the City's goal of 2.0 acres per 1,000 residents, the passive OSR would be on par with the City's goal of 0.5 acres per 1,000 residents at 0.52 acres per 1,00 residents. Further, dedicated open spaces for housing complex residents in the defined study area and the presence of Astoria Park, a 59.96-acre public park located less than 1 mile from the project area, alleviate the low open space ratios exhibited in the study area. As such, the Proposed Actions would not result in a significant adverse impact on open space resources.

Shadows

A detailed analysis of shadows is included in the EAS. The proposed actions would result in a building greater than 50 feet in height. Per the CEQR Technical Manual, for open spaces containing vegetated and related natural resources, a minimum of four to six hours of sunlight is generally the minimum requirement to avoid the potential for a significant adverse shadows impact. The detailed shadows analysis considers incremental shadows that could be cast by the proposed project on three sunlight-sensitive resources: Socrates Sculpture Park, Vernon Boulevard Green Streets, and Long Island City High School Athletic Fields. New incremental shadows on Socrates Sculpture Park and the Vernon Boulevard Green Streets would occur during the morning hours of the December 21 analysis period and would last for a duration of 1 hour, 18 minutes and 3 hours, 23 minutes respectively. These new incremental shadows would fall during the winter months outside of the *2020 CEQR Technical Manual* specified growing season, such that the viability of vegetation within these spaces would not be jeopardized. Further, utilization of these spaces would be at an annual low during the winter months due to inclement weather, such that the public's use and enjoyment of these resources for passive recreation would not be significantly affected by these new incremental shadows. The Long Island City High School Athletic Fields would experience new incremental shadows on small, northwestern portions of the athletic fields during the late afternoon or evening hours of the June 21 analysis day for 32 minutes. No portion of the Long Island City High School Athletic Fields contains live vegetation, such that new incremental shadows could not jeopardize the viability of any flora at this resource. Further, these shadows would only fall during the summer months when school is out of session and the fields are therefore not regularly used for organized activities. Additionally, due to the small extent of these new incremental shadows and their presence only towards the end of the analysis day, active recreational uses are not expected to be significantly affected. Therefore, no significant adverse shadows impacts would occur as a result of the proposed actions.

Transportation

A detailed analysis for pedestrians is included in this EAS. A Level 1 screening showed that the proposed actions would generate less than 50 total incremental peak hour vehicle trips, less than 200 incremental peak hour subway trips, less than 50 incremental peak hour bus trips. As such, no further analysis is required for traffic, parking, or transit. The proposed actions would generate a total of 167, 517, 362, and 386 pedestrian trip ends during the

Project Name: Broadway and 11th Street Rezoning
CEQR # 21DCP022Q
SEQRA Classification: Unlisted

Weekday AM, Midday, PM, and Saturday Midday peak hours, respectively. A Level 2 pedestrian assessment found that pedestrian trips would exceed the *2020 CEQR Technical Manual* threshold of 200 pedestrian trip ends at 2 corners and 1 sidewalk during the Weekday Midday peak hour, warranting a detailed analysis. Overall, the detailed analysis indicates that all of the study area's pedestrian elements would operate at an acceptable level of service and, therefore, the proposed actions would not result in any significant adverse transportation impacts.

Hazardous Materials and Air Quality

An (E) designation (E-613) related to hazardous materials and air quality would be established as part of the approval of the proposed actions. Refer to "Determination of Significance Appendix: (E) designation" for the applicable (E) designation requirements. The hazardous materials, air quality, and noise analyses conclude that with the (E) designation in place, the proposed actions would not result in a significant adverse impact related to hazardous materials, air quality, or noise.

No other significant effects upon the environment that would require the preparation of a Draft Environmental Impact Statement are foreseeable. This Negative Declaration has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law (SEQRA). Should you have any questions pertaining to this Negative Declaration, you may contact Rachel Antelmi at rantelmi@planning.nyc.gov.

TITLE	LEAD AGENCY
Director, Environmental Assessment and Review Division	Department of City Planning on behalf of the City Planning Commission 120 Broadway, 31st Fl. New York, NY 10271 | 212.720.3493
NAME Olga Abinader	DATE April 16, 2021
SIGNATURE	

TITLE	
Chair, City Planning Commission	
NAME Marisa Lago	DATE April 19, 2021
SIGNATURE	

Project Name: Broadway and 11th Street Rezoning
CEQR # 21DCP022Q
SEQRA Classification: Unlisted

Determination of Significance Appendix

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

Development Site	Borough	Block and Lot
Projected Development Site 1	QN	316/1, 13

(E) Designation Requirements

To ensure that the proposed actions would not result in significant adverse impacts related to hazardous materials and air quality an (E) designation (**E-613**) would be established as part of approval of the proposed actions on **Projected Development Site 1** as described below:

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

Hazardous Materials

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

Task 1-Sampling Protocol

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

Task 2-Remediation Determination and Protocol

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

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

A construction-related health and safety plan should be submitted to OER and would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse

impacts associated with contaminated soil, groundwater and/or soil vapor. This plan would be submitted to OER prior to implementation.

Air Quality

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

Projected Development Site 1:

Stationary Source – HVAC Source
Any new residential or commercial or industrial development on the above-referenced property must exclusively use natural gas as the type of fuel for heating, ventilating, air conditioning (HVAC), and hot water system(s), ensure that the stack is located at the building's highest level or at least 78 feet above grade, and that the stack is located at least 150 feet from the northern lot line facing Broadway and at least 100 feet from the western lot line facing 11th Street to avoid any potential significant adverse air quality impacts.

Stationary Source – Industrial/Manufacturing Source
To preclude any potential significant adverse air quality impacts from the following light industrial uses (fine arts-related uses as present in the nearby Noguchi Museum and Socrates Sculpture Park such as studios, galleries, storage and conservation, or innovation/maker spaces such as technology and floral design) developed pursuant to Section 74-962 of the Zoning Resolution of the City of New York, the emission stack must be located at the building's highest tier and at least 78 feet above grade. A mechanical ventilation system must be separated from the residential building to provide fresh air to and exhaust from the ground-floor, with vents running above the roof line of the residential towers. Any other processes that require an New York City Department of Environmental Protection Certificate of Operation (C of O) must provide an air quality analysis to OER prior to obtaining a Notice of Satisfaction in order to demonstrate that such process would not cause a significant adverse air quality impact.

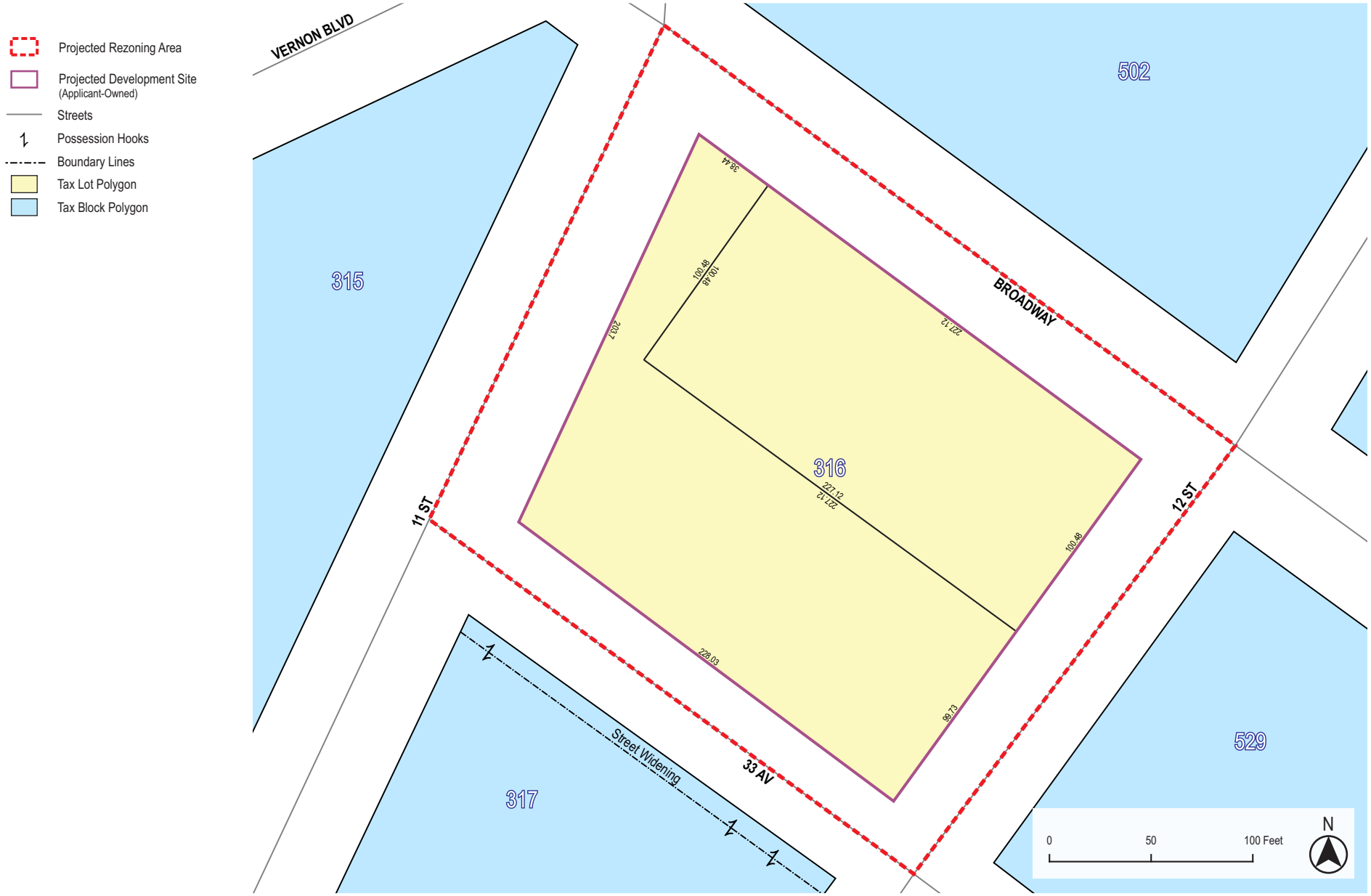
In addition, a licensed architect or engineer must certify with the Department of Buildings that the manufacturing use on the above-referenced property will adhere to the following restrictions:

(a) The manufacturing use in the building does not have a New York City or New York State environmental rating of "A", "B" or "C" under Section 24–153 of the New York City Administrative Code for any process equipment requiring a New York City Department of Environmental Protection C of O or New York State Department of Environmental Conservation state facility air permit; and

(b) is not required, under the City Right-to-Know Law, to file a Risk Management Plan for Extremely Hazardous Substances."

Broadway and 11th Street Rezoning, Queens

Figure 2: Tax Map



Data Source: MapPLUTO 2018v2.1, NYC DOF Digital Tax Map 2/22/19

Urban Cartographics

Broadway and 11th Street Rezoning, Queens

Figure 3: Land Use Map

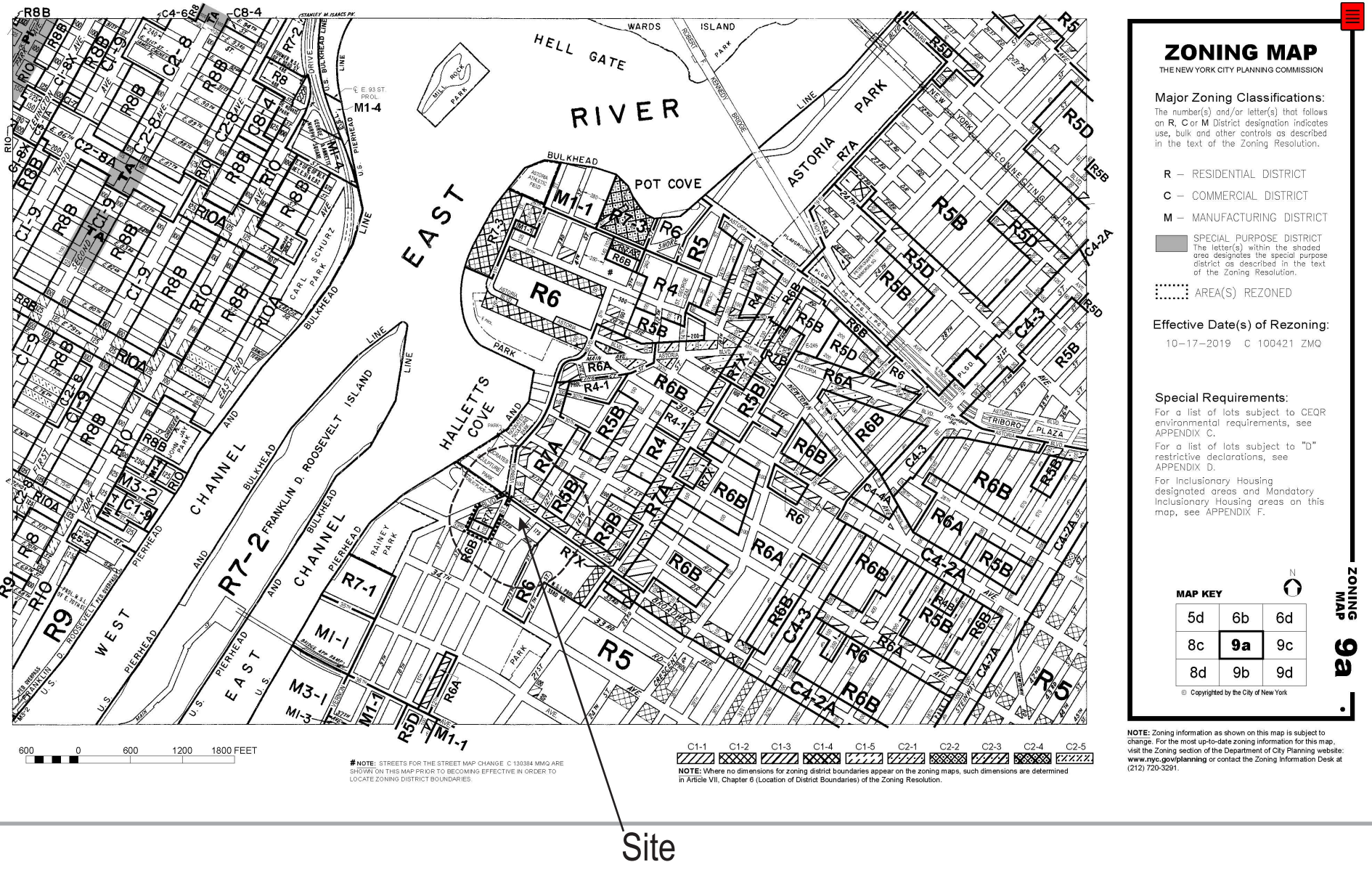


Data Source: MapPLUTO 2018v2.1, NYC DOF Digital Tax Map 2/22/19

Urban Cartographics

Broadway and 11th Street Rezoning, Queens

Figure 4: Zoning Map



#NOTE: STREETS FOR THE STREET MAP CHANGE C 130384 MMQ ARE SHOWN ON THIS MAP PRIOR TO BECOMING EFFECTIVE IN ORDER TO LOCATE ZONING DISTRICT BOUNDARIES.

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

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter 8 (Location of District Boundaries) of the Zoning Resolution.

ZONING MAP

THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:

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

R – RESIDENTIAL DISTRICT

C – COMMERCIAL DISTRICT

M – MANUFACTURING DISTRICT

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

AREA(S) REZONED

Effective Date(s) of Rezoning:

10–17–2019 C 100421 ZMQ

Special Requirements:

For a list of lots subject to CEQR environmental requirements, see APPENDIX C.

For a list of lots subject to "D" restrictive declarations, see APPENDIX D.

For Inclusionary Housing designated areas and Mandatory Inclusionary Housing areas on this map, see APPENDIX F.

MAP KEY

5d	6b	6d
8c	**9a**	9c
8d	9b	9d

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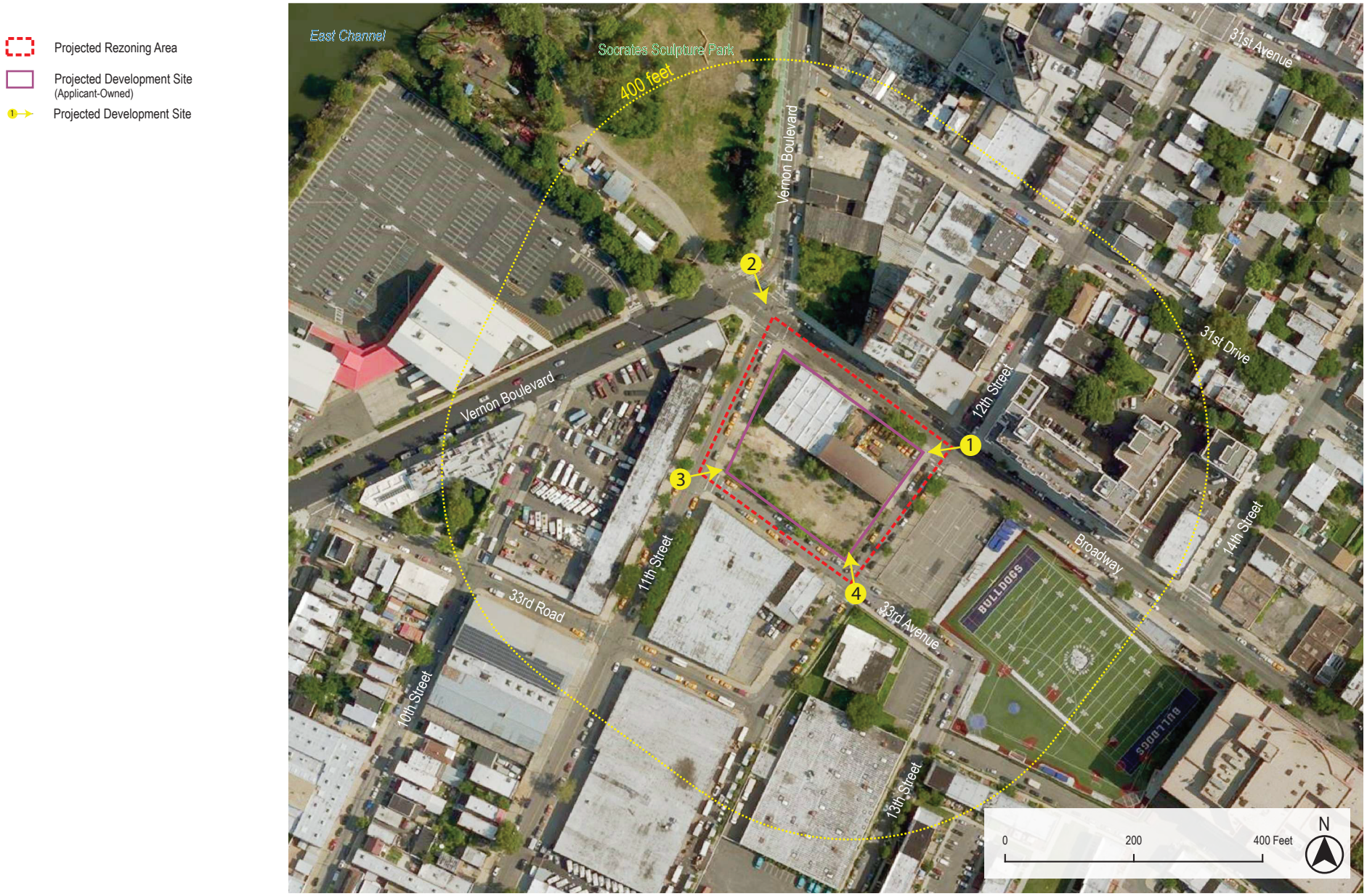
ZONING MAP **9a**

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

Urban Cartographics

Broadway and 11th Street Rezoning, Queens

Figure 5: Aerial Map



Imagery Source: 2019 Bing, Microsoft Corporation (OR) 2019 Google

Urban Cartographics



Photograph No. 1 – View of Projected Development Site 1, facing southwest from the intersection of Broadway and 12th Street.



Photograph No. 2 – View of Projected Development Site 1, facing southeast from the intersection of Broadway and 11th Street.



Photograph No. 3 – View of Projected Development Site 1, facing northwest from the intersection of 33rd Avenue and 12th Street.



Photograph No. 4 – View of Projected Development Site 1, facing northeast from the intersection of 33rd Avenue and 11th Street.

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

The Applicant, 11 St & Broadway LLC, seeks zoning map and text amendments (detailed below in Section 1.4) to facilitate the development of an approximately 254,773 gross square foot (gsf) mixed-use residential, commercial, and light manufacturing building at 11-01 33rd Avenue in the Astoria neighborhood of Queens Community District 1 (the "Proposed Project").

1.2 THE AFFECTED AREA AND APPLICANT'S DEVELOPMENT SITE

Affected Area

The proposed zoning map and zoning text amendments (see Section 1.4 below) encompass the entirety of Queens Block 316, comprised of Lots 1 and 13 (see **EAS Figure 2**), bounded by Broadway to the north, 12th Street to the east, 33rd Avenue to the south, and 11th Street to the west (see **EAS Figure 1**).

Applicant's Development Site

The Applicant-owned 49,411 square foot (sf) Development Site is a zoning lot comprised of Queens Block 316, Lots 1 (a 26,590 sf vacant and unimproved lot at 11-01 33rd Avenue) and 13 (a 22,821 sf lot at 11-01 Broadway improved with one-story [16-foot] building and a two-story [34.5-foot] building, totaling 14,800 gsf of floor area, with a surface parking lot occupied by auto-repair and storage uses).

1.3 DESCRIPTION OF THE SURROUNDING AREA

The Affected Area is located in the Astoria neighborhood of Queens, in Community District 1. The surrounding area is a mix of residential, commercial, light industrial, community facility, open space, and vacant/parking uses (see **EAS Figure 3**). To the north of the Affected Area in the R7A zoning district are new 8- to 20-story multi-family elevator residential buildings interspersed with two- to four-story residences and one-story industrial buildings. While there are C1-3 and C2-3 commercial overlays mapped along Vernon Boulevard and Broadway, there are few commercial uses. To the northeast of the Affected Area in the R5B zoning district are primarily one- to two-story residential buildings. To the west are industrial and commercial uses. Queens Block 315, Lot 1 is improved with a one-story garage/warehouse building with an open parking/storage yard. It is noted that zoning map and text amendments at Queens Block 315 were undertaken in October 2019 to rezone the entire block from R5 to R6B and R7X/C1-3 to facilitate the construction of three separate buildings that will feature housing and commercial uses at the entire block, as well as designating the block as a Mandatory Inclusionary Housing (MIH) area (ULURP No. C100421ZMQ/CEQR No. 12DCP139Q). Across Vernon Boulevard on Queens Block 313 is a Costco Wholesale store. To the south, Queens Block 317 is improved with a one-story warehouse building and one-story garages with automobile repair uses. Queens Block 318 is improved with a one-story warehouse on the northern portion of the block, one- and three-story industrial buildings, and a two-story residence and surface parking on the southern portion of the block. Similarly, Queens Block 522 is improved with one-story industrial buildings and surface parking. The area to the southwest of the Affected Area contains a mix of low-rise industrial and residential uses.

Community facility uses in the Affected Area include the Noguchi Museum located two blocks to the southwest, the Long Island City High School (Q450) located directly to the east on Broadway between 12th and 21st Streets, and the Islamic Unity mosque and Ideal Islamic School located to the northwest on 12th Street at 31st Drive. Open space facilities owned and operated by the Department of Parks and Recreation (DPR) include the 6.28-acre Socrates Sculpture Park on Vernon Boulevard at Broadway and the 8.09-acre Rainey Park on Vernon Boulevard between 33rd Road and 34th Avenue. Bus lines serving the Affected Area include the Q104 (Sunnyside/Ravenswood) along Broadway, the Q103 (Astoria/Hunters Point) along Vernon Boulevard, and the Q69 (Long Island City/Jackson Heights) along 21st Street. The Broadway N/W subway station is located approximately ¾-mile east of the Affected Area at Broadway and 31st Street, and the 21st Street-Queensbridge F subway station serving the F line is approximately one-mile south.

The proposed Affected Area was zoned R5 with the enactment of the 1961 Zoning Resolution. The area directly to the north of the Affected Area was included in the West Astoria Rezoning (C 870580 ZMQ, effective September 14, 1989), initiated by the NYC Department of City Planning (DCP). The West Astoria Rezoning changed R5 and R6 zoning districts to R3-1, R4, R5, R6A, R6B, R7A, R7B, and R7X zoning districts with C2-2 commercial overlays on Broadway, 21st Street and Astoria Boulevard. The rezoning was intended to reflect existing conditions in West Astoria, to prevent the construction of developments not consistent with the scale and character of the neighborhood, and to encourage new development in appropriate areas. The Astoria Rezoning (C 100199 ZMQ, effective May 25, 2010), also initiated by the NYC DCP, rezoned all or portions of 238 blocks to the north of the Affected Area. It was intended to protect neighborhood character from out-of-scale development, more closely reflect established development patterns, direct opportunities for moderate residential and commercial growth to locations along wide streets and transit resources, and provide incentives for the production of affordable housing. An associated text amendment established the voluntary Inclusionary Housing Program in R7A and equivalent districts.

No E-Designations have been instituted at either of the lots comprising the Affected Area.

1.4 THE PROPOSED ACTIONS

The Applicant is seeking the following actions to facilitate the Proposed Project (detailed below in Section 1.5):

1. a Zoning Map Amendment to change the existing R5 zoning district mapped on Block 316, Lots 1 and 13 (the Affected Area) to a Special Mixed-Use (MX) district pairing an R7A residential district with an M1-4 manufacturing district;

2. a Zoning Text Amendment modifying Zoning Resolution (ZR) Appendix F: Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas for Community District 1, Queens to establish the Project Area as a Mandatory Inclusionary Housing (MIH) Area; and

3. a Zoning Text Amendment to ZR Article XII, Chapter 3 [Special Mixed-Use District] to establish a M1-4/R7A (MX) district in Northwest Ravenswood in Queens.

Collectively, these three separate actions are hereinafter referred to as the "Proposed Actions."

1.5 THE PROPOSED PROJECT

The proposed zoning map and text amendments (described above in Section 1.4) would facilitate the development on the Applicant-owned Projected Development Site 1 (Block 316, Lots 1 and 13) with an up to 7-story and cellar, 254,773 gsf/226,556 zoning square foot (zsf) (4.58 FAR) mixed-use residential, commercial, and light manufacturing building with approximately 205 dwelling units, of which 51 would be reserved as affordable pursuant to MIH Option 1, and 80 accessory parking spaces located in the cellar of the building.

The proposed development wraps the entire block, maintaining a continuous street wall on each frontage with active first floor uses to enhance the streetscape. An open court above the first floor allows for efficient double-loaded residential floorplates on the upper floors. It also allows for a driveway with a circular turnaround accessible from 33rd Avenue to facilitate vehicular pick up and drop off to the residential lobby, in addition to access to the ramp to cellar parking below. The proposed development has varying heights along its four street frontages. The highest portion is along the Broadway frontage, where it rises to a height of 75 feet, seven-stories, after 10-foot and 15-foot setbacks above the base height of 65 feet. Along 33rd Avenue, the southwestern corner of the building at 11th Street is 65 feet, six-stories, and the southeastern corner of the building at 12th Street is 55 feet, five-stories. The northwestern corner of the proposed development is chamfered to accommodate an outdoor seating area accessory to the first floor commercial space. At the center of the site plan of the proposed development a driveway, accessible via a 15-foot wide curb cut on 33rd Avenue, provides access to a cellar level attended parking garage with 80 accessory off-street parking spaces. Off-street accessory loading berths are provided on 33rd Avenue and 12th Street. A freight elevator is located adjacent to the 12th Street loading dock to provide direct access to the cellar.

With respect to the programming of the non-residential space in the proposed development, first floor uses would include approximately 3,864 gsf of local retail (Use Group 6), an approximately 11,092 gsf grocery store (Use Group 6), an approximately 4,753 gsf artist studio (Use Group 9), an approximately 4,668 gsf wine distributor (Use Group 16), and an approximately 6,430 gsf floral production studio (Use Group 16).[1] The artist studio in the proposed development is intended for the local artist that currently works out of the studio in the Project Area. The wine distributor and floral production studio are both intended for existing local Queens businesses that are seeking new space in the area. Loading docks, total 2,121 gsf including 1,037 sf for the supermarket, 542 sf for the wine distributor, and 542 sf for the floral production space, are included in the gsf numbers for these uses noted above.

Due to the location of the Project Area partially within Flood Zone AE (AE flood zones are areas that present a 1% annual chance of flooding), the proposed development is designed to meet the flood resiliency requirements of the Zoning Resolution and NYC Building Code. The Project Area has a Design Flood Elevation ("DFE") of 13 feet. The first-floor portions of the proposed development below the DFE will employ dry floodproofing measures and utility/mechanical rooms will be elevated above the DFE.

[1] The Applicant would seek discretionary tax incentives for the proposed grocery store under the Food Retail Expansion to Support Health ("FRESH") Program. The Project Area is located within an area where FRESH discretionary tax initiatives are available, but FRESH zoning incentives are not available. According to the Department of City Planning's Supermarket Needs Index for 2018, the Project Area is located in a moderate need area directly north of a high need area. The high need area encompasses more than two dozen blocks and portions of blocks to the west and south of the Project Area. The proposed grocery store is intended to serve this need.

1.6 PROJECT PURPOSE AND NEED

The Proposed Actions would permit the development of the Applicant-owned development site with approximately 205 new housing units, including 51 affordable units, in the Astoria neighborhood of Queens on currently underutilized land. The Applicant seeks to develop the zoning lot with housing consistent with the standards of the Quality Housing Program and the NYC MIH Program. The development of the building in part with affordable units is consistent with the expressed desires of the City's current mayoral administration to substantially increase the amount of affordable housing. The Proposed Actions would result in the development of 30,807 gsf of ground floor space at the development site that could accommodate various commercial and light industrial uses (including Use Groups 6 through 10 and 16, as permitted by the proposed MX district). The Applicant is interested in providing a mix of traditional commercial retail uses and light industrial tenants permitted in the MX district, including fine arts-related uses, as present in the nearby Noguchi Museum and Socrates Sculpture Park (studios, galleries, storage, conservation) or innovation/maker spaces (technology, floral design).

The Proposed Project cannot be developed under the current R5 zoning district as the maximum permitted residential FAR is 1.25 while commercial and manufacturing uses are not permitted. The proposed rezoning reinforces emerging land use patterns and allows the replacement of longstanding non-conforming uses. The proposed increase in density is appropriate at this location because it is located on two wide streets near public transit. The proposed MX (R7A/M1-4) zoning district would permit comparable area and bulk to the adjacent R7A district, including the 8-to-20-story multi-family residential developments north of Broadway, and promote mixed-use development consistent with the commercial overlays mapped along Broadway. The proposed Zoning Map and Text Amendments would promote new mixed-use development on a suitable, underutilized property and also allow for the creation of new income-restricted housing in Queens Community District 1, where, according to the U.S. Census Bureau, 38.4 percent of households are rent burdened (spending 35 percent or more of their income on rent).[2]

The proposed MX(R7A/M1-4) zoning district is consistent with City policy to position higher density developments near transit along wide streets that can support such development. The proposed district is appropriate because of the close proximity of the Affected Area to public transportation and the location of the Affected Area at the intersection of wide streets. The Affected Area is located near transit and is within a Transit Zone, which is recognized as an area well-served by public transportation with low automobile ownership rates. Bus service is directly accessible from the Affected Area via the Q104 bus line along Broadway, the Q103 bus line along Vernon Boulevard, and the Q69 bus line along 21st Street. These buses provide connections to the Broadway N/W and the 21st Street-Queensbridge F subway stations a short distance away. Moreover, the MX(R7A/M1-4) zoning district (within an MIH Area) is appropriate for the Affected Area because the surrounding wide streets, Broadway and 11th Street, can support the R7A envelope as is evident from existing 8-story buildings within the R7A/C2-3 district across Broadway directly north of the Affected Area.

In addition to allowing residential use at a higher density, the proposed MX(R7A/M1-4) zoning district also allows a range of commercial (Use Groups 5-14), semi-industrial (Use Group 16), and light industrial uses (Use Group 17) that are not permitted within the existing R5 district.[3] The MX(R7A/M1-4) zoning district is necessary to allow the semi-industrial Use Group 16 wine distributer and floral production studio uses

[2] Based on American Community Survey 2013-17 Five Year Estimates for Public Use Microdata Area (PUMA) 4101, which approximates Queens Community District 1, available at: https://communityprofiles.planning.nyc.gov/queens/1#resources.

[3] While the proposed development only contains non-residential uses on the first floor, the proposed MX(R7A/M1-4) offers more flexibility than a commercial overlay to expand non-residential uses above the first floor in a mixed-use building.

within the proposed development. It further provides the flexibility to allow for light industrial tenants in addition to proposed commercial and semi-industrial uses. Semi-industrial and light industrial uses are not permitted within C1 or C2 commercial overlays. The expansive range of uses available in the proposed MX(R7A/M1-4) zoning district is consistent with the historic industrial and arts-based character of the surrounding area. The wine distributer and floral production uses in the proposed development would contribute to the historic industrial character of the area, and the artist studio fits with the existing cluster of arts uses, including the Noguchi Museum and Socrates Sculpture Park. The proposed MX(R7A/M1-4) zoning district ensures that this wide range of commercial, semi-industrial, and light industrial uses would be permitted in the Affected Area.

While there are existing commercial overlays along Vernon Boulevard and Broadway, there are currently few local retail, eating and drinking establishment, and service uses in the area. Despite this lack of built commercial use, the proposed zoning map amendment establishes zoning that is consistent with surrounding commercial overlays. The proposed local retail, supermarket, artist studio, wine distributer, and floral production uses permitted in the proposed MX(R7A/M1-4) zoning district will serve new residents of the proposed development, existing area residents, and visitors to the surrounding area.

The proposed MX(R7A/M1-4) zoning district is consistent with City's *New York Works Plan*, which seeks to create 20,000 jobs within the industrial and manufacturing sectors and the creation of 10,000 jobs within the creative and cultural sectors. The proposed MX(R7A/M1-4) zoning district permits a range of commercial, semi-industrial, and light industrial uses to facilitate job creation in various sectors. The uses in the proposed development, including an artist studio, wine distributer, and floral production studio, would contribute to job creation in the sectors emphasized in *New York Works*. These semi-industrial uses in the proposed development would create approximately 25 jobs based on preliminary estimates.

Overall, the proposed zoning map and text amendments are consistent with existing land uses within the surrounding area and would promote new mixed-use development on a suitable, underutilized property. These actions will also further the objectives of the City's *Housing New York: A Five-Borough, Ten-Year Plan* by creating more opportunities for housing and the City's *New York Works Plan* by promoting the creation of new jobs in the industrial and cultural sectors. The existing R5 zoning designation within the Affected Area does not promote the development of new higher density or affordable housing, nor does it permit commercial use. The rezoning of the Affected Area to an MX(R7A/M1-4) district with an MIH Area designation facilitates the proposed mixed-use, transit-oriented development with approximately 205 dwelling units, including 51 permanently income-restricted housing units, and new commercial and semi-industrial uses.

1.7 BUILD YEAR / PROJECT PHASING

It is assumed that the Proposed Actions and associated development approval requirements (including ULURP) would be granted by and construction activities (including demolition) would commence by early 2022. It would take approximately 18 months to construct the Proposed Project on the Applicant's Projected Development Site 1. For the purposes of a conservative analysis, it is assumed the Project Build Year would be 2024.

1.8 ANALYSIS FRAMEWORK

For the purposes of analysis pursuant to CEQR, the Applicant's Development Site is considered a Projected Development Site, hereinafter referred to as "Projected Development Site 1." The existing, No-Action, and With-Action conditions at Projected Development Site 1 are described below.

The Existing Condition

Projected Development Site 1 is located at 11-01 33rd Avenue, Queens, New York, approximately 49,411 sf in area, comprised of Queens Block 316, Lots 1 and 13 (see **EAS Figure 2**). Projected Development Site 1 is bounded by Broadway to the north (with approximately 266 feet of frontage), 12th Street to the east (with approximately 200 feet of frontage), 33rd Avenue to the south (with approximately 228 feet of frontage), and 11th Street to the west (with approximately 204 feet of frontage). Existing land use conditions at the individual tax lots comprising Projected Development Site 1 are described as follows (as well as visualized in **EAS Figure 3**):

- Lot 1: the 26,590 sf lot is vacant and unimproved, portions of which are used as a storage yard for vehicles and other equipment; and

- Lot 13: the 22,821 sf lot is improved with a 16-foot, one-story building and a 34.5-foot, two-story building, totaling 14,800 gsf of floor area, with a surface parking lot occupied by auto-repair and storage uses. It is noted that this is a nonconforming use (i.e., Use Group 16); the R5 zoning district at Projected Development Site 1 currently only permits Use Group 1 through 4 uses (i.e., residential and community facility uses).

The No-Action Condition

Without the Proposed Actions it is assumed that the Affected Area's existing R5 zoning would remain and the site would not be rezoned to MX(R7A/M1-4). Under the No-Action Scenario for the Project Build Year of 2024, it is assumed that the Applicant's Proposed Development Site (Projected Development Site 1), identified as Block 316, Lots 1 and 13 in Queens, would be developed with a mixed-use residential and community facility project totaling 101,305 gsf in total floor area. The No-Action Scenario under the existing R5 zoning mapped on the property would consist of one zoning lot developed with a total of 62 dwelling units within 62,199 gsf of residential floor area, 9,303 gsf of community facility space (Use Group 4 medical offices), and 72 accessory parking spaces. The number of residential dwelling units is based on the NYC DCP's standard average size of 1,000 gsf per unit. It is anticipated that the community facility space would consist of general medical offices (urgent care, dentist, general practitioner, medical specialists) which would be appropriate for this area given the large amount of new residential development that is planned for and occurring in the area as well as the Affected Area's close proximity to the Mt. Sinai medical center at 30th Avenue and Crescent Street. The development envisions the construction of a 4-story and cellar residential and community facility building fronting on 11th Street and containing 26 dwelling units within 24,168 gsf of floor area plus 9,303 gsf of community facility space. The cellar would be comprised of 13,500 gsf of parking space for 42 parking spaces plus 3,877 gsf of storage and mechanical areas. The remainder of the zoning lot would be developed with 12 three-story, three-family dwellings for a total of 36 dwelling units within 37,951 gsf of floor area plus 12,506 gsf of cellar level storage and mechanical space and 30 at-grade parking spaces. The existing auto repair and storage uses would be removed to accommodate this development.

The No-Action Scenario for the Applicant property (Projected Development Site 1) has been determined based on the provisions of the existing R5 zoning and the Applicant's stated intent to develop the zoning lot with 62 dwelling units, 9,303 gsf of community facility space (Use Group 4 medical offices), and 72 accessory parking spaces.

The With-Action Condition

The With-Action Reasonable Worst-Case Development Scenario (RWCDS) at Projected Development Site 1 detailed below is considered for analysis purposes in the EAS.

The With-Action RWCDS Scenario projects an up to 7-story and cellar, 254,773 gsf mixed-use building with 223,965 gsf of residential floor area for 224 residential units (calculated at 1,000 gsf/unit) and 30,807 gsf of ground floor commercial and light industrial floor area (with 19,709 gsf of commercial space and 11,098 gsf of light industrial space, including an 11,092 gsf supermarket, a 4,753 gsf artist studio, 3,864 gsf of local retail space, a 4,668 gsf wine distributor, and 6,430 gsf of floral production space; Use Groups 6 through 10 and 16). The proposed development also includes 90 accessory parking spaces in the cellar of the building as well as two loading docks with one located on 33rd Avenue and another on 12th Street. The loading docks, total 2,121 gsf including 1,037 sf for the supermarket, 542 sf for the wine distributor, and 542 sf for the floral production space, are included in the gsf numbers for these uses noted above. The proposed building would have a height of 75 feet after a 15 feet setback above the base height of 65 feet. The building would have a FAR of 4.58 based on 226,556 zsf on the 49,411sf lot. For the purposes of a conservative analysis pursuant to CEQR, the EAS assumes that 20% of the residential floor area would be reserved as affordable to households with incomes at or below 80% of the AMI resulting in 45 affordable units. The no-action and with-action buildings would have the same footprint and there would be no incremental ground disturbance.

With the exception of the residential dwelling unit density (and associated parking requirements), the With-Action RWCDS is the same as the Applicant's Proposed Project with respect to area and bulk.

1.9 INCREMENT BETWEEN NO-ACTION AND WITH-ACTION SCENARIO

The net increase from the No-Action Condition to the With-Action Condition development parameters for the proposed development scenario is provided in **Table 1-1** below.

Table 1-1 – RWCDS Incremental Increase	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
Describe type of residential structures	N/A	multi-family dwelling units	multi-family dwelling units	
No. of dwelling units	N/A	62	224	+162
No. of low- to moderate-income units	N/A	0	45	+45
Gross floor area (sq. ft.)	N/A	62,119	223,965	+161,846
Commercial	☑ Yes ☐ No	☐ Yes ☑ No	☑ Yes ☐ No	
If "yes," specify the following:			FALSE	
Describe type (retail, office, other)	N/A	N/A	retail; supermarket; artist studio	retail; supermarket; artist studio
Gross floor area (sq. ft.)	N/A	N/A	19,709	19,709
Manufacturing/Industrial	Yes	No	Yes	
If "yes," specify the following:				
Type of Use	auto repair, storage	N/A	wine distributor; floral production	wine distributor; floral production
Gross floor area (sq. ft.)	14,800	N/A	11,098	+11,098
Open storage area (sq. ft.)	N/A	N/A	N/A	
If any enclosed activities, specify:	N/A	N/A	N/A	
Community Facility	☐ Yes ☑ No	☑ Yes ☐ No	☐ Yes ☑ No	
If "yes," specify the following:				
Type of Use	N/A	medical offices	N/A	(medical offices)
Gross floor area (sq. ft.)	N/A	9,303	N/A	-9,303
Vacant Land	☑ Yes ☐ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes", describe:	26,590 sf vacant lot	N/A	N/A	
Publicly Accessible Open Space	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," specify type (mapped City, State, or Federal Parkland, wetland-mapped or otherwise known, other):	N/A	N/A	N/A	
Other Land Uses	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If "yes," describe:	N/A	N/A	N/A	
Parking				
Garages	☐ Yes ☑ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. of public spaces	N/A	N/A	N/A	
No. of accessory spaces	N/A	42	90	48
Operating hours	N/A	24 hrs/7 days	24 hrs/7 days	
Attended or non-attended	N/A	non-attended	attended	attended
Lots	☐ Yes ☑ No	☑ Yes ☐ No	☐ Yes ☑ No	
If "yes," specify the following:	TRUE	FALSE	TRUE	
No. of public spaces	N/A	N/A	N/A	
No. of accessory spaces	N/A	30	N/A	-30
Operating hours	N/A	24 hrs/7 days	N/A	
Other (includes street parking)	☐ Yes TRUE ☑ No	☐ Yes TRUE ☑ No	☐ Yes TRUE ☑ No	
If "yes," describe:	N/A	N/A	N/A	
Population				
Residents	☐ Yes TRUE ☑ No	☑ Yes FALSE ☐ No	☑ Yes ☐ No	

Table 1-1 – RWCDS Incremental Increase	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
If "yes," specify number:	N/A	148	535	387
Briefly explain how the number of residents was calculated:	Based on an average household size of 2.39 persons (per 2013-17 ACS data for the development site's census tract)			
Businesses	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	
If "yes," specify the following:				
No. and type	1 auto repair, 1 storage use	1 medical office	1 supermarket, 1 artist studio, 1 wine distributor, 1 floral production company, 1 local retail	1 supermarket, 1 artist studio, 1 wine distributor, 1 floral production company, 1 local retail; (1 medical office)
No. and type of workers by business	6 auto repair workers, 2 storage use workers	37 medical office workers	70 commercial/ light manufacturing workers	70 commercial/ light manufacturing workers; (37 medical office workers)
No. and type of non-residents who are not workers	25 daily customers	50 daily patients and visitors	150 daily customers	+150 daily customers (50 daily patients and visitors)
Briefly explain how the number of businesses was calculated:	Existing: existing businesses; No-Action: assumes 4 workers/1,000 gsf medical office space; With-Action: assumes 3 workers/1,000 gsf commercial retail space and 1 worker per 1,000 gsf of light manufacturing space			
Other (students, visitors, concert-goers, *etc* .)	☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	
If any, specify type and number:	N/A	N/A	N/A	
Briefly explain how the number was calculated:				
Zoning				
Zoning classification	R5	R5	MX (R7A/M1-4)	MX (R7A/M1-4); (R5)
Maximum amount of floor area that can be developed	61,763 sf residential; 98,822 sf community facility	61,763 sf residential; 98,822 sf community facility	98,822 sf com'l/manuf; 227,290 sf resid; 197,644 sf comm facility	+98,822 sf com/mf; +165,527 sf resid; +98,822 sf comm facility
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	parking; manufact-storage-auto related; comm facility; resid; R5, R5B, R6, R7A, C2-3	parking; manufact-storage-auto related; comm facility; resid; R5, R5B, R6, R7A, C2-3	parking; manufact-storage-auto related; comm facility; resid, retail; R5, R5B, R6, R7A, C2-3, MX (R7A/M1-4)	retail; MX (R7A/M1-4)
Attach any additional information that may be needed to describe the project. If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

1.10 REQUIRED SUPPLEMENTAL ANALYSES

Based on the analysis and the screens contained in the Environmental Assessment Statement (EAS) Short Form for the Proposed Project as well as the development increment between the No-Action and With-Action Conditions for the Development Scenario provided in **Table 1-1** in the Project Description, the following environmental review areas require additional screening analyses, listed by section number as follows:

- 2.1 – Land Use, Zoning, and Public Policy
- 2.2 – Open Space
- 2.3 – Shadows
- 2.4 – Historic and Cultural Resources
- 2.5 – Urban Design and Visual Resources
- 2.6 – Hazardous Materials
- 2.7 – Transportation
- 2.8 – Air Quality
- 2.9 – Noise

2.1 LAND USE

2.1-1 - Introduction

This analysis of land use, zoning and public policy follows the guidelines set forth in the *New York City Environmental Quality Review 2020 Technical Manual* (hereinafter the *2020 CEQR Technical Manual*). It characterizes the existing conditions in the area surrounding Projected Development Site 1 and addresses potential impacts to land use, zoning, and public policy that would be associated with the Proposed Actions.

2.1-2 - Methodology

This preliminary analysis of land use, zoning, and public policy follows the guidelines set forth in the *2020 CEQR Technical Manual* for a preliminary assessment (Section 320). According to the *2020 CEQR Technical Manual*, a preliminary land use and zoning assessment includes a basic description of existing and future land uses and zoning information and describes any changes in zoning that could result in changes in land use. It also characterizes the land use development trends in the area surrounding the development site that might be affected by the Proposed Actions and determines whether the Proposed Project is compatible with those trends or may affect them.

For public policy, the *2020 CEQR Technical Manual* stipulates that a preliminary assessment should identify and describe any public policies (formal plans, published reports) that pertain to the study area, and should determine whether the Proposed Project could alter or conflict with identified policies. If so, a detailed assessment should be conducted; otherwise, no further assessment is needed.

The following land use, zoning and public policy assessment follows this guidance and provides a description of existing conditions of the project area and its surroundings. This is followed by an assessment of the No-Action condition and the With-Action condition, and a determination that no further analysis is needed.

According to the *2020 CEQR Technical Manual*, the appropriate study area for a land use, zoning, and public policy analysis is related to the type and size of the project, as well as the location and context of the area that could be affected by the project. To assess the potential for project related impacts, the land use study area has been defined as the area located within a 400-foot radius of the proposed Affected Area. The 400-foot land use study area is generally bounded by 31st Drive to the north, 14th Street to the east, mid-block between 33rd Road and 34th Avenue to the south, and mid-block between Vernon Boulevard and the East River to the west (see **EAS Figure 3**). Various sources have been used to prepare a comprehensive analysis of land use, zoning, and public policy characteristics of the area, including field surveys, studies of the neighborhood, census data, and land use and zoning maps.

2.1-3 – Land Use

Existing Conditions

Existing land uses are described at Projected Development Site 1 within the Affected Area (as established in Section 1.0, “Project Description”) below, as well as within the 400-foot land use study area.

Projected Development Site 1

Projected Development Site 1 is located at 11-01 33rd Avenue, Queens, New York, approximately 49,411 sf in area, comprised of Queens Block 316, Lots 1 and 13 (see **EAS Figure 2**). Projected Development Site 1 is bounded by Broadway to the north (with approximately 266 feet of frontage), 12th Street to the east (with approximately 200 feet of frontage), 33rd Avenue to the south (with approximately 228 feet of frontage), and 11th Street to the west (with approximately 204 feet of frontage). Existing land use conditions at the individual tax lots comprising Projected Development Site 1 are described as follows (as well as visualized in **EAS Figure 3**):

- Lot 1: the 26,590 sf lot is vacant and unimproved; and

- Lot 13: the 22,821 sf lot is improved with a 16-foot, one-story building and a 34.5-foot, two-story building, totaling 14,800 gross square feet (gsf) of floor area, with a surface parking lot occupied by auto-repair and storage uses. It is noted that this is a nonconforming use (i.e., Use Group 16); the R5 zoning district at Projected Development Site 1 currently only permits Use Group 1 through 4 uses (i.e., residential and community facility uses).

400-Foot Land Use Study Area

The 400-foot land use study area is generally defined by land uses north and south of Broadway as well as uses west of Vernon Boulevard (refer to **EAS Figure 3** for an illustration of land uses within the study area). South of Broadway, industrial/manufacturing (e.g., several shipping and distribution facilities) and institutional uses (i.e., the Long Island City High School) are prevalent, as well as a large parking facility adjacent to Projected Development Site 1 to the east (which is associated with the Long Island City High School). Additionally, a small pocket of one- and two-family residential uses is found at the far southeastern extent of the study area. North of Broadway features a number of one- and two-family and multi-family residential uses interspersed with several industrial/manufacturing uses (including several metalworking and automobile-related businesses). Land uses west of Vernon Boulevard include the Socrates Sculpture Park open space and a Costco Wholesale Center commercial business.

<u>No-Action Condition</u>

As described in Section 1.0 "Project Description," absent the Proposed Actions (i.e., the No-Action Condition), it is expected that Projected Development Site 1 would be redeveloped pursuant to the existing R5 zoning district. This No-Action Development Scenario is characterized as a mixed-use residential and community facility project totaling 101,305 gsf in floor area, including a total of 62 dwelling units within 62,199 gsf of residential floor area, 9,303 gsf of community facility space (Use Group 4 medical offices), and 72 accessory parking spaces. The number of residential dwelling units was calculated assuming a size of 1,000 gsf per unit. It is anticipated that the community facility space would consist of general medical offices (urgent care, dentist, general practitioner, medical specialists). The development envisions the construction of a 4-story and cellar residential and community facility building fronting on 11th Street and containing 26 dwelling units within 24,168 gsf of floor area plus 9,303 gsf of community facility space. The cellar would be comprised of 13,500 gsf of parking space for 42 parking spaces plus 3,877 gsf of storage and mechanical areas. The remainder of the zoning lot would be developed with 12 three-story, three-family dwellings for a total of 36 dwelling units within 37,951 gsf of floor area plus 12,506 gsf of cellar level storage and mechanical space and 30 at-grade parking spaces. The existing auto repair and storage uses would be demolished and removed to accommodate this development.

A description of impacts to existing land uses under the No-Action Condition in the context of Projected Development Site 1 and the land use study area is provided below.

Projected Development Site 1

Under the No-Action Condition the existing vacant and automobile repair and storage uses at the development site would change to mixed-use multi-family residential and community facility medical offices. These uses would be consistent with land uses within the larger study area, which features a multitude of one- and two family and multi-family residential uses concentrated in its northern portions interspersed with light industrial/manufacturing uses. Further, the No-Action Scenario is generally consistent with development trends in the area, specifically those encouraged by the aforementioned Astoria rezoning, including to direct opportunities for moderate residential and commercial growth to locations along wide streets and transit resources.

400-Foot Land Use Study Area

The following No-Action development was identified within the land use study area for the Proposed Project based on a review of the NYC Major Active Construction (MAC) database and the NYC Zoning Application Search (ZAP) on January 30, 2020:

- *11-28 31st Drive, Queens Block 512, Lot 22 (NYC Department of Buildings [DOB] Permit No. 420605964)*: A proposed vertical enlargement of an existing one-story building to six stories with 9 total residential dwelling units. It is assumed this project would be completed by the Proposed Project's 2024 build year.

The MAC and ZAP databases were searched again on February 11, 2021 and this project was no longer listed. The NYC Department of Buildings issued a temporary Certificate of Occupancy for the building in November 2019. No other projects were shown within the 400-foot project study area radius.

Pursuant to the zoning map and text amendments approved at Queens Block 315, Lot 1 in October 2019 (i.e., the *Vernon Boulevard-Broadway Rezoning)*, it assumed the block would be redeveloped pursuant to the description of the EAS filed on April 19, 2019, consisting of 351 residential dwelling units within 332,208 gsf of residential floor area, 11,236 gsf of commercial floor area, 6,882 gsf of community facility floor area, 164 parking spaces, and 33,606 sf of open space (including 16,547 sf of public open space). The development would be comprised of three buildings at heights of 55 feet, 95 feet, and 145 feet. Pursuant to information provided in the EAS for this project, it would be completed by the Proposed Project's 2024 build year.

Based on the foregoing, no significant adverse impacts to land use at Projected Development Site 1 or the land use study area are anticipated under the No-Action Condition.

<u>With-Action Condition</u>

As described in Section 1.0, "Project Description," the With-Action Condition under the Proposed Actions considers one development scenario at Projected Development Site 1. It is noted that the Development Scenario is very similar to the Applicant's Proposed Project, with a slightly greater number of residential dwelling units (due to residential dwelling units being calculated at 1,000 gsf/DU) and the associated number of parking spaces.

The With-Action RWCDS Scenario projects an up to 7-story and cellar, 254,773 gsf mixed-use building with 223,965 gsf of residential floor area for 224 residential units (calculated at 1,000 gsf/unit) and 30,807 gsf of ground floor commercial and light industrial floor area (with 19,709 gsf of commercial space and 11,098 gsf of light industrial space, including an 11,092 gsf supermarket, a 4,753 gsf artist studio, 3,864 gsf of local retail space, a 4,668 gsf wine distributor, and 6,430 gsf of floral production space; Use Groups 6 through 10 and 16). The proposed development also includes 90 accessory parking spaces in the cellar of the building as well as two loading docks with one located on 33rd Avenue and another on 12th Street. The loading docks totaling 2,121 gsf, including 1,037 sf for the supermarket, 542 sf for the wine distributor, and 542 sf for the floral production space, are included in the gsf numbers for these uses noted above. The proposed building would have a height of 75 feet after a 15 feet setback above the base height of 65 feet. The building would have a FAR of 4.58 based on 226,556 zsf on the 49,411 sf lot. For the purposes of a conservative analysis pursuant to CEQR, the EAS assumes that 20% of the residential floor area would be reserved as affordable to households with incomes at or below 80% of the AMI resulting in 45 affordable units.

With the exception of the residential dwelling unit density (and associated parking requirements), the With-Action RWCDS is the same as the Applicant's Proposed Project with respect to area and bulk.

Under the development scenario described above, land uses at Projected Development Site 1 would transition from vacant and automobile repair and storage uses (Use Group 16) to mixed-use multi-family residential (Use Group 2) with commercial (Use Groups 6 through 10, including grocery, local retail, and artist studio spaces) and light industrial uses (including wine distributor and floral production spaces – Use Group 16). These uses would be consistent with land uses currently found within the land use study area under the No-Action condition, which includes numerous residential and light industrial/manufacturing uses. This development scenario is also consistent with development trends within the study area as identified in the No-Action Scenario described above, including the proposed residential expansion in the northern portion of the study area and the mixed-use multi-family residential, commercial, and community facility development immediately west of Projected Development Site 1.

Overall, the development scenario would activate land uses at Projected Development Site 1, which is currently underutilized with vacant and non-conforming automobile-related uses, with new, conforming, mixed-use multi-family residential, commercial, and light manufacturing uses. Further, these uses would be consistent with existing land uses within the study area as well as identified development trends. Based on the foregoing, the Proposed Actions are not anticipated to create significant adverse land use impacts, and no further analysis is warranted.

2.1-4 – Zoning

Existing Conditions

Existing zoning conditions, including zoning districts, commercial overlays, special zoning districts, and historical zoning actions, at Projected Development Site 1 within the Affected Area and within the land use study area, are discussed in detail below.

Projected Development Site 1

The entirety of Projected Development Site 1 is situated within the R5 zoning district (see **EAS Figure 4**). The R5 zoning district permits residential and community facility uses up to FARs of 1.25 and 2.0, respectively. R5 district requirements include a maximum lot coverage of 55 percent, and a maximum building height of 40 feet (with a maximum street wall height of 30 feet). Yard requirements include a minimum 10-foot front yard, 30-foot rear yard, and 8-foot side yards for detached buildings, with parking space provision requirements for 85 percent of dwelling units and 42.5 percent of income restricted housing units. The minimum dwelling unit square footage in R5 zoning districts is 760 sf.

400-Foot Land Use Study Area

Existing zoning within 400 feet of Projected Development Site 1 includes the R5 district mapped throughout the study area south of Broadway, an R6 district mapped at the northwest corner of the study area, the R5B zoning district mapped in the northern and northeastern extents of the study area, the R6B district mapped in the far eastern extent of the study area, and the R7A district mapped in the northern central portion of the study area, as well R7X and R6B zoning districts immediately west of Projected Development Site 1 instituted as part of the *Vernon Boulevard-Broadway Rezoning* approved in October 2019 (see **EAS Figure 4**). The C1-3 commercial overlay is mapped along the east side of Vernon Boulevard in the northwestern portion of the study area as well as coterminous with the aforementioned R7X district, while the C2-3 commercial overlay is mapped along the north side of Broadway in the central and eastern portions of the study area (both of which are mapped in conjunction with an underlying R7A zoning district - see **EAS Figure 4**). No special purpose districts are mapped in the study area.

The R5B zoning district permits residential and community facility uses up to FARs of 1.35 and 2.0, respectively, with a maximum building height of 33 feet (with a maximum street wall height of 30 feet) and lot coverage of 55 percent. Yard regulations include a minimum 5-foot front yard and 30-foot rear yard, with parking required for 66 percent of dwelling units and 42.5 percent of income restricted dwelling units. The minimum dwelling size in the R5B zoning district is 760 square feet. The R5B zoning district is a contextual district, which indicates that its various area and bulk regulations were designed to produce buildings consistent with existing neighborhood character.

The R6 zoning district is a Quality Housing district (which encourages development consistent with existing development character via permitted density bonuses) that permits FARs of 3.0 for residential uses (up to 3.6 for participation in inclusionary housing programs) and 4.8 for community facility uses. Maximum building heights within the R6 district include a maximum base height of 65 feet and a maximum overall height of 85 feet (assumes participation in an inclusionary housing program, development on a wide street, and utilization of a qualifying ground floor), over a maximum of 8 stories. A minimum 30-foot rear yard is required with a maximum lot coverage of 65 percent on interior lots and 100 percent on corner lots.

The R6B district permits residential and community facility uses to a FAR of 2.0 (which can be increased to 2.2 FAR for residential uses if the building participates in the Inclusionary Housing Program) and features Quality Housing Program regulations. Base building heights are required to be between 30 and 45 feet, and the maximum building height is 55 feet after a setback from the street (all of which assumes bonuses acquired from participation in the Inclusionary Housing Program). New multi-family residences in R6B districts must provide one off-street parking space for 50 percent of dwelling units.

The R7A zoning district permits residential and community facility uses to a FAR of 4.0, which can be increased to 4.6 FAR for residential uses if the proposed building participates in the Inclusionary Housing Program. Base heights are required to be between 40 and 75 feet, and the maximum building height is 85 feet after a 10- or 15-foot setback from the street, with a maximum building height of 95 feet allowed for inclusionary housing buildings. Special height regulations limit buildings located within 25 feet of an R6B district to a height of 65 feet. The R7A district requires one off-street parking spot for 50 percent of residential dwelling units. When mapped in conjunction with an R7A district, C1-3 and C2-3 commercial overlays permit a commercial FAR of 2.0.

The R7X zoning district is a medium density contextual residential zoning district that permits residential and community facility uses up to an FAR of 5.0 (with residential uses up to a FAR of 6.0 assuming participation in an inclusionary housing program). A base height between 60 and 105 feet is required, with a maximum permitted building height of 145 feet, with a maximum of 14 building stories permitted. The R7X district requires one off-street parking space for 50 percent of residential dwelling units. When mapped in conjunction with an R7X district, C1-3 commercial overlays permit a commercial FAR of 2.0.

It is noted that the Astoria Rezoning (C 100199 ZMQ, effective May 25, 2010), initiated by the NYC DCP, rezoned all or portions of 238 blocks to the north of the Affected Area, including that portion of the land use study area north of Broadway and east of Vernon Boulevard. It was intended to protect neighborhood character from out-of-scale development, more closely reflect established development patterns, direct opportunities for moderate residential and commercial growth to locations along wide streets and transit resources, and provide incentives for the production of affordable housing. An associated text amendment established the voluntary Inclusionary Housing Program in R7A and equivalent districts.

Further, as previously discussed, the *Vernon Boulevard-Broadway Rezoning* (C 100421 ZMQ, effective October 25, 2019), a private application, rezoning the entirety of Queens Block 315 from R5 to R6B and R7X/C1-3, to facilitate the construction of a mixed-use, multi-building residential, commercial, and community facility development. An associated text amendment established a Mandatory Inclusionary Housing (MIH) district coterminous with the rezoning area.

No-Action Condition

Projected Development Site 1

Under the No-Action Condition absent the Proposed Actions, Projected Development Site 1 would continue to governed by the R5 zoning district.

400-Foot Land Use Study Area

Based on a review of the NYC ZAP on February 8, 2021, no rezonings or land use applications are proposed within the land use study are for the Proposed Project.

Based on the foregoing, no significant adverse zoning impacts are anticipated in the No-Action Condition.

With-Action Condition

Projected Development Site 1

Under the With-Action Condition the Applicant is requesting the following zoning-related actions at Projected Development Site 1:

1. A Zoning Map Amendment to change the existing R5 zoning district mapped on Block 316, Lots 1 and 13 (the Affected Area) to a Special Mixed-Use (MX) district pairing an R7A residential district with an M1-4 manufacturing district;

2. A Zoning Text Amendment modifying Zoning Resolution (ZR) Appendix F: Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas for Community District 1, Queens to establish the Project Area as a Mandatory Inclusionary Housing (MIH) Area; and

3. A Zoning Text Amendment to ZR Article XII, Chapter 3 [Special Mixed-Use District] to establish a M1-4/R7A (MX) district in Northwest Ravenswood in Queens.

See **Figure 2.1-1**, appended to the end of this Section, for a comparison of zoning maps in the vicinity of the Affected Area under the No-Action and With-Action Conditions.

These requested zoning actions are necessary in order to permit the Proposed Project to proceed. The existing R5 zoning mapped at Projected Development Site 1 typically produces three-story attached houses and small apartment buildings at a maximum residential FAR of 1.25. The Applicant proposes rezoning the Affected Area with an MX(R7A/M1-4) zoning to develop a higher density residential development with accessory commercial and light industrial/manufacturing spaces at Projected Development Site 1 which would not be allowed under the current zoning. The proposed MX(R7A/M1-4) district per the redevelopment of Projected Development Site 1 with a residential FAR up to 4.60 and commercial/manufacturing uses up to a FAR of 2.0. The action would serve the needs of this area of Queens for high quality residential dwellings, affordable housing, and retail services with adequate parking, and would promote the development of the property in a fashion that would be compatible with and beneficial to adjacent and nearby residential and other uses.

The area, bulk, and dimensional requirements of the proposed MX(R7A/M1-4) are similar to existing zoning regulations found within the 400-foot study area, notably the existing R7A district (with C1-3 and C2-3 commercial overlays) and recently mapped R7X district (with a C1-3 commercial overlay), which are found in northern and western portions of the study area, respectively. As previously discussed, the R7A district permits a maximum FAR of 4.6 for residential uses and maximum building heights of 95 feet/9 stories, comparable to those area and bulk regulations that would be instituted as part of the Proposed Actions. The R7X district permits residential FARs up to 5.0 (up to 6.0 when participating in inclusionary housing programs) and building heights up to 125 feet.

The proposed Zoning Text Amendment to modify ZR Section 23-933, Appendix F is necessary in order map the Affected Area as an MIH area. For the purposes of a conservative analysis pursuant to the *2020 CEQR Technical Manual*, the With-Action Scenario for Projected Development Site 1 assumes that 20 percent of the residential floor area would be reserved as affordable to households with incomes at or below 80 percent of the AMI, resulting in the development of 45 affordable units.

Table 2.1-1 below summarizes the major provisions of the No-Action and With-Action zoning districts as applicable to Projected Development Site 1.

Table 2.1-1 – No-Action and With-Action Zoning Districts, Selected Area and Bulk Provisions

	Projected Development Site 1	
	Existing	*Proposed*
Zoning District	R5	MX(R7A/M1-4)
Maximum Permitted FAR	1.25 Res / 2.0 CF	4.6 Res/ 2.0 MF/4.0 CF
Maximum Floor Area Potential[1]	61,763 Res; 98,822 CF	227,291 Res; 98,822 Com/MF; 197,644 CF
Maximum Building Height (FT)	40	95 Res/ Sky Exposure Plane MF
Use Groups	1-4	1-14, 16-17

Notes:
Res – Residential; Com - Commercial; CF – Community Facility; MF - Manufacturing
[1] – Based on the 49,411-sf lot area of Projected Development Site 1

400-Foot Land Use Study Area

The Proposed Actions would not result in any changes in zoning in the 400-foot land use study area as it is limited to the Affected Area only.

Based on the foregoing, the Proposed Actions are not expected to result in significant adverse zoning impacts. The Proposed Actions would be limited to Projected Development Site 1 such that the area beyond the development site would not be impacted. Further, the area, bulk, and density provisions associated with the proposed MX(R7A/M1-4) district are similar to other zoning districts found within the study area, particularly the R7A zoning district with C1-3 and C2-3 commercial overlays mapped in the northern study area and the R7X zoning district (with C1-3 commercial overlay) mapped immediately west of the Affected Area. As such, no further analysis is warranted.

2.1-5 Public Policies

According to the *2020 CEQR Technical Manual*, a project that would be located within areas governed by public policies controlling land use, or that has the potential to substantially affect land use regulation or policy controlling land use, requires an analysis of public policy. Public policies applicable to the Affected Area and 400-foot radius project study area are discussed below.

Existing Conditions

Projected Development Site 1 and 400-Foot Land Use Study Area

The Affected Area and the entire 400-foot radius project study area are located within the City's Coastal Zone Boundary (CZB). These areas are therefore subject to the provisions of the City's Waterfront Revitalization Program (WRP). See **Figure 2.1-2** (appended to the end of this Section) for an illustration of the CZB in the context of Projected Development Site 1 and the study area.

Projected Development Site 1 and the entire 400-foot radius study area except for its northeastern corner beyond 12th Street and Broadway are located within the boundaries of the City's Food Retail Expansion to Support Health (FRESH Program). The City has established the FRESH program in response to the issues raised in neighborhoods that are underserved by grocery stores. FRESH provides zoning and financial incentives to promote the establishment and retention of neighborhood grocery stores in underserved

communities throughout the five boroughs. The FRESH program is open to grocery store operators renovating existing retail space or developers seeking to construct or renovate retail space that will be leased by a full-line grocery store operator in FRESH-eligible areas that meet the following criteria:

- Provide a minimum of 6,000 sf of retail space for a general line of food and non-food grocery products intended for home preparation, consumption and utilization;
- Provide at least 50 percent of a general line of food products intended for home preparation, consumption and utilization;
- Provide at least 30 percent of retail space for perishable goods that include dairy, fresh produce, fresh meats, poultry, fish, and frozen foods; and
- Provide at least 500 sf of retail space for fresh produce.

Financial incentives are available to eligible grocery store operators and developers to facilitate and encourage FRESH Food Stores in the designated area. These incentives include real estate tax reductions, sales tax exemptions, floor area bonuses, and mortgage recording tax deferrals. Projected Development Site 1 and the relevant portion of the 400-foot radius project study area are eligible for various tax incentives related to grocery store development and operation.

The NYC DCP has undertaken the Western Queens Transportation Study with the goal of improving mobility and enhancing connections both within western Queens and to other areas of the city, including nearby Roosevelt Island and northern Brooklyn. The objectives of this study are to:

- Enhance the connections between the various neighborhoods of western Queens;
- Create and enhance connections to neighborhoods outside western Queens, including Roosevelt Island;
- Link existing and new development and improve access and mobility throughout the neighborhood; and
- Connect new and existing destinations such as waterfront parks and cultural institutions.

The study is a comprehensive examination of transportation facilities in an area encompassing Roosevelt Island to the west, Steinway Street to the east, Newtown Creek to the south, and Astoria Boulevard to the north, in which Projected Development Site 1 is located. This report presents analysis based upon factors including fieldwork, analysis of existing land use and zoning, recent and potential future development, demographics, literature search, field data, and crash data. Extensive community outreach was performed to gain an understanding of community needs and desires.

The recommendations in the final report include:

- Identifying ways to improve transit service for waterfront communities on the East River;
- Changes to the bus network to improve access to Roosevelt Island, Hallets Point, and Hunter's Point;
- Expanded East River ferry service;
- A new entrance ramp to the Long Island Expressway;
- Traffic calming, intersection improvements, and streetscape enhancements along the 21st Street and Vernon Boulevard corridors;
- Improved access to Roosevelt Island via a protected bike lane and a redesigned bridge/parking garage complex;

- A proposed new approach to urban design and streetscape improvements for mixed-use industrial streets; and
- Strategic intersection improvements throughout the study area.

All of the recommendations in the report require further analyses and design work by the applicable operating agency, such as the New York City Department of Transportation and the Metropolitan Transportation Authority. DCP will continue its dialogue with those agencies to facilitate implementation.

An Inclusionary Designated Housing Area is mapped north of Projected Development Site 1 across Broadway and east of Vernon Boulevard to the west of 12th Street. The Inclusionary Housing Program promotes economic integration in areas of the City undergoing substantial new residential development by offering an optional floor area bonus in exchange for the creation or preservation of affordable housing, on-site or off-site, principally for low-income households. The Inclusionary Housing Program requires a percentage of the dwelling units within a building to be set aside, or new or rehabilitated affordable units be provided off-site within the same community district or within one-half mile of the bonused development. All affordable residential units created through the Inclusionary Housing Program must remain permanently affordable. Affordable apartments may be rental units or, under modifications made to the program in 2009, available in an ownership plan.

A Mandatory Inclusionary Housing Area is mapped over the entire block to the west of the Affected Area (Block 315, Lot 1, bounded by Vernon Boulevard, 10th and 11th Streets, and 33rd Road; C 100421 ZMQ, effective October 25, 2019). As part of the Mayor's Housing New York plan, the City Council has approved a citywide zoning text amendment to authorize an MIH program (ULURP # 160051ZRY). The purpose of the MIH program is to promote neighborhood economic diversity in locations where land use actions create substantial new housing opportunities. The text amendment will have no effect until mapped through subsequent discretionary actions of the City Planning Commission (CPC), each of which will be subject to a public review process and separate environmental review. As with zoning actions generally, MIH Areas may be applied through DCP-initiated actions or as part of private applications, including certain zoning map amendments, text amendments, and Special Permits that create opportunities for significant new housing development. The MIH program would require (through zoning) that when CPC actions create significant new housing capacity in medium and high-density areas, either 25 or 30 percent of new housing would be permanently affordable. The CPC and ultimately the City Council would apply at least one of these requirements to each MIH area:

- Option 1: 25 percent of residential floor area must be for affordable housing units for residents with incomes averaging 60 percent Area Median Income (AMI) ($46,620 for a family of three) with no unit targeted at a level exceeding 130 percent AMI; or

- Option 2: 30 percent of residential floor area must be for affordable housing units for residents with incomes averaging 80 percent AMI with no unit targeted at a level exceeding 130 percent AMI.

In addition to the options above, the City Council and the CPC could decide to apply one or both of the following options:

- A deep affordability option, where:

- 20 percent of the total residential floor area must be for housing units for residents with incomes averaging 40percent AMI ($31,080 per year for a family of three);

- No direct subsidies could be used for these units except where needed to support more affordable housing; or

- An additional, limited workforce option for markets where moderate-income development is marginally feasible without subsidy. Under this option:

  - 30 percent of the residential floor area must be for housing units for residents with incomes averaging 115 percent AMI ($104,895/year for a family of three);
  - No units could go to residents with incomes above 130 percent AMI ($101,010/year for a family of three);
  - No direct subsidies could be used for these affordable housing units; and
  - This option would not be available in Manhattan CDs 1-8, which extend south of 96th Street on the east side and south of 110th Street on the west side.

Requirements would apply to developments, enlargements and residential conversions of more than ten units. Developments between 11 and 25 units would have the optional alternative of making a payment into an affordable housing fund, to be used to support affordable housing within that Community District.

In 2017 New York City set a goal of using direct City actions to spur the development of 100,000 new, quality jobs over the next ten years via the *New York Works Plan*. The Plan's overarching goal is to specifically catalyze 100,000 quality jobs through City investments and direct actions. The plan is a roadmap to meet that goal, to drive up New Yorkers' incomes and, together with investments in housing and schools, make New York a more affordable place for people to live and work.

No other public policies would apply to the Proposed Actions or Projected Development Site 1 as neither the development site or the surrounding 400-foot radius study area are located within the boundaries of any 197-a Community Development Plans or Urban Renewal Area plans, historic districts or individually designated historic resources, and also are not within a critical environmental area, a significant coastal fish and wildlife habitat, a wildlife refuge, or a special natural waterfront area.

No-Action Condition

Absent the Proposed Actions, new development (including the No-Action Condition development) in the Affected Area and within the 400-foot radius project study area would remain within the boundaries of the City's CZB, the FRESH Program, and the Western Queens Transportation Study Area, and would therefore remain subject to the provisions of these public policies. The Inclusionary Housing Designated Area mapped north of the Affected Area across Broadway and east of Vernon Boulevard to the west of 12th Street would also remain and development within this area would be subject to the provisions of this designation. The Mandatory Inclusionary Housing Designated Area mapped west of the Affected Area bounded by Vernon Boulevard, 10th and 11th Streets, and 33rd Road would also remain and development within this area would be subject to the provisions of this designation. No other public policy initiatives would pertain to the Affected Area or to the 400-foot study area around the Area by the project build year of 2024. In addition, no changes are anticipated to any public policy documents relating to Projected Development Site 1 or the surrounding study area by the project build year.

With-Action Condition

Projected Development Site 1

As discussed above, the Proposed Actions include a Zoning Text Amendment to modify ZR Appendix F to designate the newly mapped MX(R7A/M1-4) district as an MIH area, with the Option 1 requirement applied to the With-Action Condition, which requires that 25 percent of the residential floor area must be for affordable housing units for residents with incomes averaging 60 percent AMI with no unit targeted at a level exceeding 130 percent of AMI. As previously discussed, the Proposed Development Scenario would include 45 affordable units. It is noted that the final MIH Option ultimately applicable to the Proposed Project will be determined by the CPC.

Waterfront approval is required for the proposed development as Projected Development Site 1 is located within the New York City CZB (see **Figure 2.1-2**) and, therefore, the Proposed Project must be assessed for its consistency with the City's WRP. A narrative assessing the Proposed Project's consistency with applicable WRP policies and goals is attached to the end of the Section (with related WRP forms, worksheets, and figures included as part of the **Waterfront Revitalization Program Appendix** of this EAS). The Proposed Actions are consistent with WRP policies, and no potentially significant adverse impacts related to the WRP are anticipated as a result.

Any recommendations from the Western Queens Transportation Study applicable to Projected Development Site 1 and the Proposed Project will require further analyses and design work by the applicable operating agency, such as the New York City Department of Transportation or the Metropolitan Transportation Authority. DCP will continue its dialogue with those agencies to facilitate implementation.

The Proposed Actions are consistent with City's *New York Works Plan*, which seeks to create 20,000 jobs within the industrial and manufacturing sectors and the creation of 10,000 jobs within the creative and cultural sectors. The Proposed Actions would permit a range of commercial, semi-industrial, and light industrial uses and would facilitate job creation in various sectors. The uses in the Proposed Project, including an artist studio, wine distributer, and floral production studio, would contribute to job creation in the sectors emphasized in the *New York Works Plan*. These semi-industrial uses in the proposed development would create approximately 25 jobs based on preliminary estimates.

400-Foot Land Use Study Area

The proposed development would not have any impact on the Coastal Zone, the FRESH Program, or the Western Queens Transportation Study Area within a 400-foot radius of the Affected Area.

Conclusions

Based on the above analyses, it has been determined that no potentially significant adverse impacts related to public policy are expected to occur as a result of the Proposed Actions. The Proposed Project would meet the City's public policy goals as explained above as well as similar State and national public policy goals related to the provision of affordable housing and the development of grocery stores providing fresh produce. All development would comply with the provisions of the City's WRP applicable to the Coastal Zone. Overall, the Proposed Actions would result in an appropriate development in the Affected Area and would be a positive contribution to Queens Community District 1 and to the surrounding neighborhood. Therefore, further analysis of public policy is not warranted.

11th Street and Broadway Rezoning, Explanation of Consistency with Waterfront Policies

1. **Policy 1: Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**

   WRP Policy 1 relates to the development of new residential and commercial uses on the waterfront in order to revitalize derelict waterfront areas. Projected Development Site 1 is not located on the waterfront, but approximately two blocks to the east of the East River. Nevertheless, the development that would be facilitated by the Proposed Project would bring new residents, workers, shoppers, and other visitors to the area resulting in new activity in the nearby waterfront area.

2. **Policy 1.1: Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.**

   Projected Development Site 1 is an appropriate location for the proposed development and meets the criteria of Policy 1.1 as described below.

   A. Criteria that should be considered to determine areas appropriate for reuse through public and private actions include: compatibility with the continued functioning of the designated Special Natural Waterfront Areas, the Arthur Kill Ecologically Sensitive Maritime and Industrial Area, or Significant Maritime and Industrial Areas, where applicable; the absence of unique or significant natural features or, if present, the potential for compatible development; the presence of substantial vacant or underused land; proximity to existing residential or commercial uses; the potential for strengthening upland residential or commercial areas and for opening up the waterfront to the public; transportation access; the maritime and industrial jobs potentially displaced or created; and the new opportunities created by redevelopment.

   Public actions—such as property disposition, urban renewal plans, and infrastructure provision—should facilitate redevelopment of underused property to promote housing and economic development and enhance the city's tax base, subject to consideration of Policy 2, where applicable.

   Relative to Policy 1.1 A., the Affected Area is not designated either as a Special Natural Waterfront Area (SNWA) or as a Significant Maritime and Industrial Area (SMIA) nor is it in close proximity to any areas so designated. The Affected Area is located inland and does not border the shoreline. The Affected Area does not contain any unique and significant natural features. The 49,411 sf property is currently partially developed with a 14,800 gsf, one-to-two-story building (16 to 34.5 feet in height) with associated parking area, both of which are utilized for automobile storage and repair. The remainder of the property is vacant/unimproved. The surrounding area is characterized by a mix of light industrial/manufacturing, open space, multi-family residential, and commercial development.

   The Proposed Project would add to and strengthen the surrounding residential, commercial, and manufacturing community. Development of the Proposed Project would have no impact upon public access to the waterfront as the development site is not located along or near the waterfront. Although the Proposed Project would result in the loss of the few jobs associated with

the automobile repair and storage business at the site, it is anticipated to result in the generation of up to approximately 78 new retail, office, artist studio, wholesale, and residential maintenance jobs.

The Proposed Actions would not involve any public actions, such as property disposition, Urban Renewal Plans, and infrastructure provision. However, the Actions would facilitate redevelopment of underused property to promote housing and economic development and would thereby enhance the city's tax base.

3. **Policy 1.3: Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.**

   A. Encourage development at a density compatible with the capacity of surrounding roadways, mass transit, and essential community services such as public schools. Lack of adequate local infrastructure need not preclude development, but it may suggest the need to upgrade or expand inadequate or deteriorated local infrastructure.

   Projected Development Site 1 is located in an area with fully developed infrastructure with adequate capacity to serve the Proposed Project. The development site is bounded by Broadway to the north, 12th Street to the east, 33rd Avenue to the south, and 11th Street to the west in Astoria, Queens, providing access in all direction from and to the development site. No through roadway access is provided to the west of Vernon Boulevard as there are only one block of development remaining beyond which is the East River. Access to I-278 is provided approximately 1.75 miles north of the development site which connects the development site to eastern Queens as well as Manhattan and the Bronx via the Triborough Bridge. Access to Manhattan is also available approximately one-mile south of the development site via the 59th Street Bridge.

   The Affected Area is approximately 0.66 miles west of the Broadway subway station (N and W trains) at Broadway and 21st Street and 0.9 miles north of the 21st Street/Queensbridge subway station (F train) near Queensborough Plaza. The Area is also served by the Q103 and Q69 bus lines providing north-south access and the Q104 providing east-west access.

   The nearest public elementary school, P. S. 76 at 36-36 10th Street serving grades pre-K through 5, is located approximately 0.42 miles from Projected Development Site 1. The most recent enrollment and capacity data from the NYC Department of Education indicates that in the 2018-2019 school year, the target capacity of P. S. 76 was 723 seats while 457 students were enrolled, representing a utilization rate of approximately 63 percent.

4. **Policy 1.5: Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.**

   A. Projects should consider potential risks related to coastal flooding to features specific to each project, including, but not limited to, critical electrical and mechanical systems, residential living areas, and public access areas.

   See discussion under Policy 6.2 below.

5. **Policy 6: Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change; and**

6. **Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.**

   Pursuant to the preliminary 2015 FEMA flood hazard area mapping for New York City, the entirety of Projected Development Site 1 is situated within Zone AE with a Base Flood Elevation (BFE) of 12 feet (NAVD88) and a 1 percent annual chance flood hazard. Zone AE is described as "Areas subject to inundation by the 100-year flood determined in a Flood Insurance Study by detailed methods. Base flood elevations are shown within these zones. Mandatory flood insurance purchase requirements apply." See **Figure 2.1-3** (appended to the end of this Section) for an illustration of the mapped flood zone at Projected Development Site 1.

   This area is subject to storm surge flooding from the one percent annual chance coastal flood. Such zones are not subject to high velocity wave action but are still considered high risk flooding areas. Accordingly, the Proposed Project would incorporate all New York State and New York City flooding and erosion requirements, including compliance with ZR Article VI, Chapter 4 "Special Regulations Applying in Flood Hazard Areas" and Appendix G of the Building Code.

   In addition, the NYC Building Code requires that construction meets flood resistant construction standards. All development at the development site would be required to meet these standards which require that all spaces below the flood elevation, plus 1 foot for freeboard, are floodproofed subject to applicable limitations on use.

7. **Policy 6.2: Integrate consideration of the latest New York City projections of climate change and sea level rise (as published by the NPCC, or any successor thereof) into the planning and design of projects in the city's Coastal Zone.**

   Projected Development Site 1 would not contain publicly accessible waterfront and is located upland from any shore, approximately 600 feet from the nearest shoreline along the East River. Two blocks of existing development separate the development site from the river.

   The current 1 percent annual chance Base Flood Elevation (BFE) at Projected Development Site 1 is 12.0 feet. Due to the site's location in an AE flood zone, the proposed building has been designed to meet the requirements of the NYC Building Code to minimize the effects of flooding, including dry floodproofing of the ground floor, as portions of it are below the BFE and therefore at risk during a flood event.

   The cellar level of the Proposed Project would be constructed at an elevation of 0.0 feet and would therefore be entirely below the DFE. The cellar would contain accessory parking and storage and would be constructed of poured concrete. The cellar would be below the 1 percent annual chance BFE between now and the year 2124, the project's lifespan, under all sea level rise projections. Potential consequences from flooding would include minor damage to the parking and storage area for the Proposed Project. This could result in minor damage to property and temporary displacement of the parking and storage facilities.

The next lowest point of the Proposed Project is the ground floor, with a grade elevation ranging from a minimum of 9.42 feet to a maximum of 11.52 feet, such that this floor would be partially below the BFE of 12.0 feet. However, all interior areas of the first floor (including residential lobbies, commercial retail, light manufacturing, artist studio space, and building mechanical/utility rooms) would be dry floodproofed with removable barriers, such that they would be watertight with all elements substantially impermeable to the entrance of floodwater. Further, the mechanical/utility rooms would be elevated (via a ramp) above the 12.0-foot BFE, such that in a 1 percent annual chance flood event these rooms would remain above the projected floodwater elevation. The ground/first floor level of the building would be above the Mean Higher High Water + Sea Level Rise beyond the anticipated lifespan of the project in 2124.

The lowest residential levels would begin at the second floor of the proposed building at an elevation of 18 feet, which is well above the BFE. The residential levels would be above the elevation of the 1 percent annual chance flood level under all projections through the lifespan of the Proposed Project. As such, there is no chance for flooding of any residential floors under these projections.

The roof of the building would feature auxiliary power generators such that in the event of power loss (due to flooding or otherwise), power can be maintained throughout the building.

The development would be landscaped with salt water proof plantings.

Coastal storms could bring high winds in addition to the flood hazards described above. The site is not within a Coastal V zone.

The project would not make flooding on adjacent sites worse, nor would it conflict with other plans for flood protection on adjacent sites.

Adaptive measures to protect the Affected Area from future flooding could include elevation of the site or the construction of a floodwall to protect the site from higher water levels. Although elevation of the Affected Area may not be feasible, construction of a floodwall or installation of water barriers will be given ongoing consideration as water levels continue to rise. The Proposed Project would comply with all applicable current and future flood zone building code requirements.

Based on the foregoing, the Proposed Project is consistent with Policy 6.2. The proposed building has been designed to minimize the effects of flooding under present conditions, and potential losses resulting from higher high-water levels in the future can feasibly be managed by adaptive measures such as floodwalls.

8. **Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety;**

9. **Policy 7-1: Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems;**

10. **Policy 7-2: Prevent and remediate discharge of petroleum products; and**

11. **Policy 7-3: Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.**

These policies largely pertain to hazardous waste sites and major petroleum storage and off-loading facilities, none of which would be included in the Proposed Project. In addition, as the new residential commercial/retail, and artist studio (or community facility) uses would likely utilize natural gas and electricity for their heating and hot water generation needs, oil storage tanks would not be located in these structures, thereby eliminating a potential source of petroleum contamination. Any businesses or other facilities using petroleum products would be required to handle, store and dispose of these products and to clean up any spills in accordance with current Federal, State, and City rules and regulations.

Conclusions

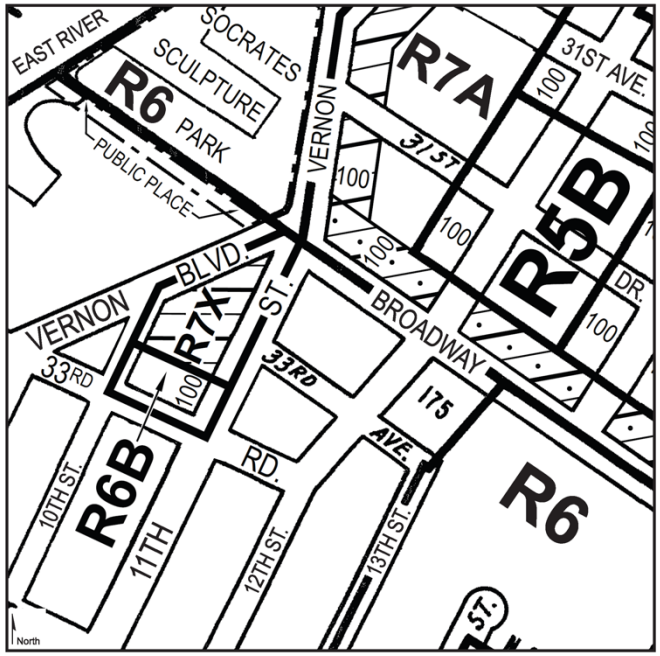
DCP's Waterfront and Open Space division has completed their review of the project for consistency with the policies and intent of the NYC Waterfront Revitalization Program (WRP). Based on the information submitted, the Waterfront Open Space Division, on behalf of the New York City Coastal Commission, having reviewed the waterfront aspect of this action, finds that the actions will not substantially hinder the achievement of any WRP policy and determines the project consistent with the WRP policies.

This determination is only applicable to the information received and the current proposal. Any additional information or project modifications would require an independent consistency review.

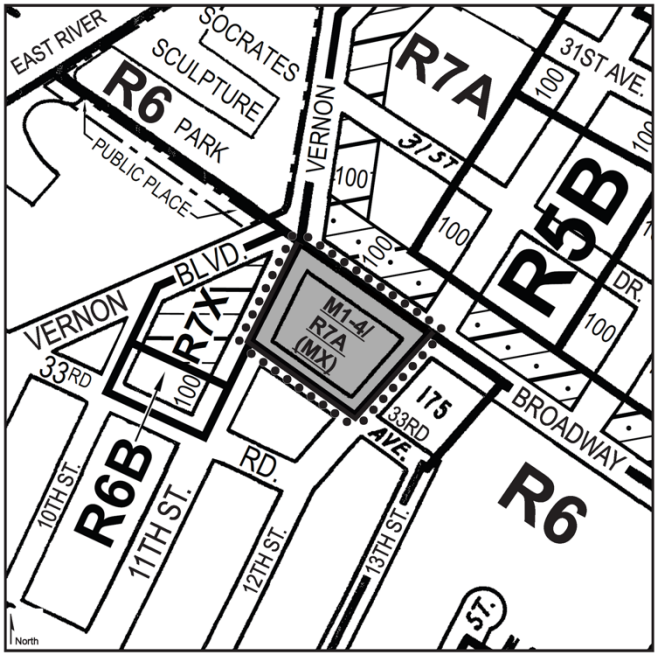
This project has been assigned **WRP # 19-029**.

Figure 2.1-1 – Zoning Comparison Map, No-Action vs. With-Action Conditions

Zoning Change Map



Current Zoning Map (9a)



Proposed Zoning Map (9a) - Area being rezoned is outlined with dotted lines

Rezoning from R5 to M1-4/R7A (MX)

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

NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter 6 (Location of District Boundaries) of the Zoning Resolution.

Figure 2.1-2 – Coastal Zone Boundary Map

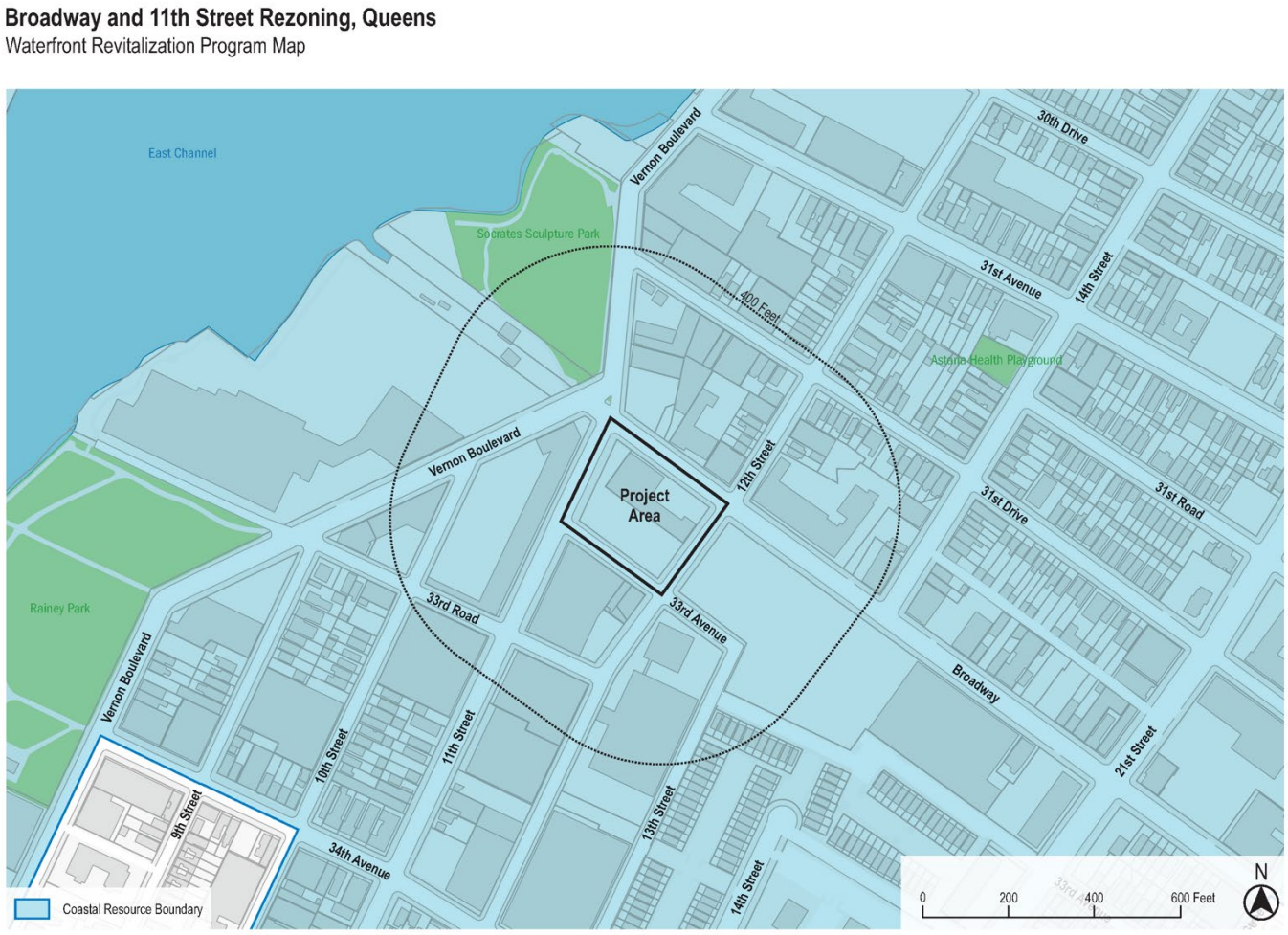
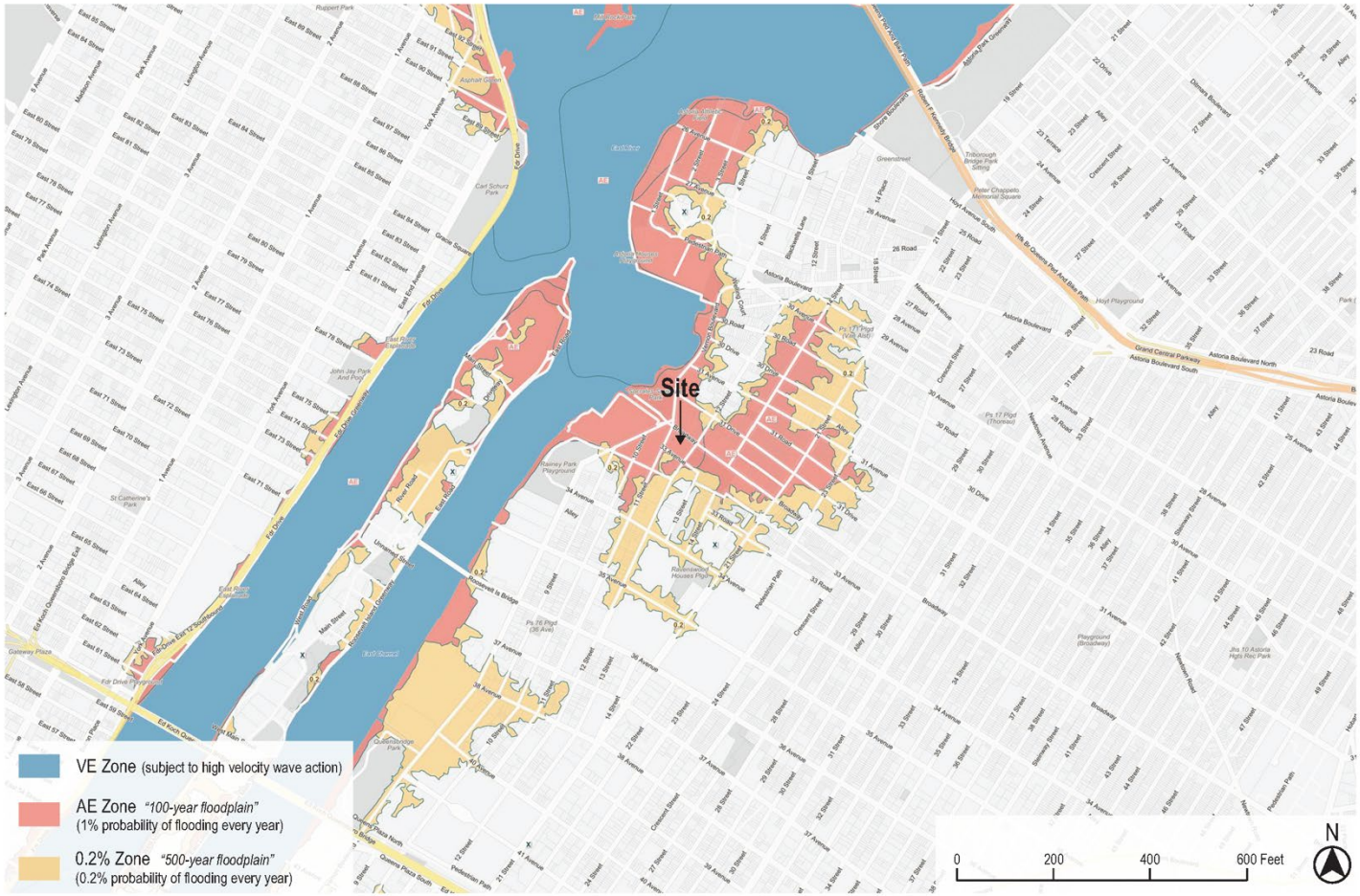


Figure 2.1-3 – FEMA Flood Zone Map

Broadway and 11th Street Rezoning, Queens
FEMA Flood Hazard Areas 2015



Source: Federal Emergency Management Agency (fema.gov) / PropertyShark.com
Urban Cartographics

2.2 OPEN SPACE

2.2-1 - Introduction

For the purpose of CEQR, open space is defined as publicly- or privately-owned land that is publicly accessible and has been designated for leisure, play, or sport; or land that is set aside for the protection and/or enhancement of the natural environment. Under CEQR, an open space analysis is conducted to determine whether or not a proposed action would have either a direct impact resulting from the elimination or alteration of open space or an indirect impact resulting from overtaxing the use of open space. The analyses focus only on officially designated existing or planned public open space. Open space may be public or private and may include active and/or passive areas. 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 with benches, walkways, and picnicking areas. Certain spaces such as lawns, can be used for both active and passive recreation.

Open space analyses may be necessary when an action would potentially have a direct or indirect effect on open space. A direct impact would physically change, diminish or eliminate an open space or reduce its utilization or aesthetic value. An indirect impact could result from an action introducing a substantial new user population that would create or exacerbate an overutilization of open space resources.

2.2-2 – Direct Effects

The Affected Area is located directly across the intersection of Vernon Boulevard and Broadway from the Socrates Sculpture Park. Due to the proximity of the Affected Area to this open space resource, potential shadow impacts could occur from the Proposed Projected at Projected Development Site 1. A detailed discussion of potential shadows impacts on this facility is presented in the Section 2.3, "Shadows."

2.2-3 – Indirect Effects

Introduction

On the basis of *2020 CEQR Technical Manual* criteria, the development scenario under the With-Action Condition could potentially result in indirect effects to open space resources within the project study area and must be further assessed to determine whether significant indirect effects would be expected to occur. The Affected Area is located within the underserved open space area of the Astoria neighborhood of Queens Community District 1 (see **Figure 2.2-1**, appended to the end of this Section). If a project is located in an underserved area, the *2020 CEQR Technical Manual* requires that an open space assessment be conducted if that project would generate more than 50 residents or 125 workers.

As discussed in **Table 1-1** of Section 1.0, "Project Description," the Proposed Development Scenario under the With-Action Condition would generate a net increase of 162 residential dwelling units over the 62 dwelling units projected in the No-Action Condition. Based on an average household size of 2.32 persons for Queens U.S. Census Tract 45 (U.S. Census American Community Survey [ACS] 2014-18 data), the Proposed Development Scenario is projected to generate 376 net new residents over the No-Action Condition based on an incremental increase of 162 dwelling units. Therefore, the development scenario under the With-Action Condition would exceed the threshold of 50 new residents and a preliminary quantitative analysis of indirect residential open space impacts is required.

Further, as indicated in **Table 1-1**, the Proposed Development Scenario would result in commercial (grocery store, an artist's studio, and other local retail) and light manufacturing (a wine distributor and floral production) spaces, totaling 30,807 gsf. These spaces, in addition to the residential component of the Proposed Project, are projected to generate up to 78 new employees (this estimate assumes 3 workers per 1,000 sf of commercial space (59 workers), 1 worker per 1,000 sf of light manufacturing space (11 workers), and 1 employee per 25 residential units (8 workers). The 9,303 gsf of medical office space proposed in the No-Action Condition is projected to generate 37 employees (based on a factor of 1 employee per 250 sf of medical office space), resulting in a net incremental increase of 41 employees in the With-Action Condition. Thus, the development scenario would not meet the threshold criteria for commercial open space analysis in underserved areas (125 new employees) and no further analysis is warranted with regard to that analysis.

Preliminary Assessment

Based on methodologies presented in the *2020 CEQR Technical Manual*, an initial quantitative residential open space assessment involves a determination of an area's open space ratio based on the population of the open space study area and the acreage of all publicly accessible open space resources within this study area.

Study Area

The generalized residential open space study area is that area within a half-mile of the study area, and the defined residential open space study area is comprised of those census tracts with 50 percent or more of their area within the generalized study area. If an area's open space ratio decreases significantly as a result of a proposed action or if an area has a very low open space ratio, a more detailed assessment may be required.

However, for the purposes of this analysis, and in coordination with the NYC Department of Parks and Recreation (DPR), Queens Census Tracts 37 and 85 with less than 50 percent of their area within the generalized study area were also included in the defined study area as their proximity to Projected Development Site 1 (approximately 130 and 270 feet, respectively) warranted partial inclusion, based on the underlying census block geographies. It is further noted that although the half-mile radius area includes more than 50 percent of Manhattan Census Tract 238.02, this tract is located on Roosevelt Island and is separated from Projected Development Site 1 by the East River and is therefore not considered regularly accessible to Projected Development Site 1. **Figure 2.2-2** (appended to the end of this Section) illustrates the generalized and defined residential study areas for the Proposed Project, as well as the aforementioned conditional geographic inclusions and exclusions.

Based on the calculation of the ratio of publicly accessible open space acres to the open space study area population, a determination of the adequacy of open space resources in that study area was quantified. The resultant computation for the study area was then compared with the median ratio for New York City, which is 1.5 acres per 1,000 residents, and with the City's planning goal as expressed in the *2020 CEQR Technical Manual* of 2.5 acres per 1,000 population. Ideally, this would comprise 0.50 acres of passive space and 2.0 acres of active open space per 1,000 residents.

The *2020 CEQR Technical Manual* considers an action to result in significant impacts to open space resources if it would decrease the open space ratio substantially, thereby reducing the availability of open

spaces for an area's population. A decrease in the open space ratio of 5 percent or more is generally considered to be a significant adverse impact on open space resources. However, if the existing open space ratio is low even an open space ratio change of less than 1 percent may result in potential significant open space impacts.

Existing Conditions

Open Space Study Area Population

The existing open space study area population was estimated using data from the U.S. Census American Community Survey (ACS) 2014-2018 population estimates, projected to 2021 using the calculated average annual population change between U.S. Census 2010 and ACS 2014-2018 data for the identified qualifying census tracts and conditionally included census blocks. See **Figure 2.2-2** for an illustration of the open space study area census geographies (included conditional inclusions and exclusions), as well as **Table 2.2-1** below which also includes 2021 population estimates.

Table 2.2-1 – 2021 Existing Open Space Study Area Population Estimates

Census Tract	2010 U.S. Census Population	ACS 2014-2018 Population	Average Annual Growth Rate, 2010-18 (%)	2021 Population Estimate
Queens 37 [1]	0	0	0%	0
Queens 39	1,592	1,424	-1.32%	1,369
Queens 43	2,437	2,626	0.97%	2,703
Queens 45	2,975	3,456	2.02%	3,670
Queens 47	3,984	3,743	-0.76%	3,659
Queens 75	4,116	4,101	-0.05%	4,058
Queens 77	1,478	1,798	2.71%	1,948
Queens 79	3,493	2,886	-2.17%	2,702
Queens 81	1,188	1,393	2.16%	1,485
Queens 85[2]	938	824	-1.52%	787
Queens 87	4,582	4,470	-0.31%	4,429
TOTAL:	**26,783**	**26,721**	**N/A**	**26,810**

Notes:
[1] – Includes Queens Census Tract 37 Census Blocks 1001, 1002, 1005, and 1006 (see **Figure 2.2-1**)
[2] – Includes Queens Census Tract 85, Census Block Group 1 (the smallest geography for which population data is available for the 2014-2018 ACS; Queens Census Tract 85, Census Block Group 1 contains all of Queens Census Tract 85 census blocks included in the detailed study area

As indicated in **Table 2.2-1** above, the estimated study area population in the year 2021 is 26,810 persons.

Open Space Study Area Open Space Resources

As illustrated in **Figure 2.2-2**, the defined open space study area for the Proposed Project contains nine existing open space resources, identified below in **Table 2.2-2**.

Table 2.2-2 – Open Space Resources within the Defined Open Space Study Area (Existing and No-Action Condition)

Map Key ID	Open Space Resource Name	Owner	Amenities	Park Quality / Conditions[2]	Hours of Operation / Access[3]	Observed Utilization Level[3]	Use Groups	Size (Acres)	Active Recreation (Acres)[1]	Passive Recreation (Acres)[1]
EXISTING OPEN SPACE FACILITIES WITHIN THE DEFINED OPEN SPACE STUDY AREA										
1	Astoria Health Playground	DPR	Playground, Basketball Court	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 9:00 PM	Moderate	Children, Teenagers, Adults	0.21	0.189 (90 percent)	0.021 (10 percent)
2	Two Coves Community Garden	DPR	Garden, Benches	**Overall Condition:** Acceptable **Cleanliness:** Acceptable[3]	Variable[4]	Light	Adults, Senior Citizens	0.78	0 (0 percent)	0.78 (100 percent)
3	Hallets Cove Playground / Astoria Houses Playground	DPR	Playground, Athletic Courts	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 9:00 PM	Light	Children, Teenagers	5.84	5.26 (90 percent)	0.58 (10 percent)
4	Ravenswood Playground	DPR	Playground, Athletic Courts, Fitness Equipment	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 9:00 PM	Light	Children, Teenagers, Adults, Senior Citizens	2.76	2.49 (90 percent)	0.27 (10 percent)
5	P.S. 76 / Spirit Playground	DPR / DOE	Playground, Athletic Courts	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 9:00 PM	Light	Children, Teenagers	0.79	0.71 (90 percent)	0.08 (10 percent)
6	Socrates Sculpture Park	DPR	Open Lawns w/ Art Installations	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 10:00 PM	Moderate	Adults, Senior Citizens	6.28	0 (0 percent)	6.28 (100 percent)
7	Rainey Park	DPR	Playground, Athletic Fields, Dog-Friendly Areas, Eateries	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 10:00 PM	Light	Children, Teenagers, Adults, Senior Citizens	8.09	3.24 (40 percent)	4.85 (60 percent)
8	Costco Waterfront Esplanade	Private	Benches, Walking Path	**Overall Condition:** Acceptable **Cleanliness:** Acceptable[3]	Dawn to Dusk	Light	Teenagers, Adults, Senior Citizens	1.05	0 (0 percent)[2]	1.05 (100 percent)[2]
9	Sixteen Oaks Grove	DPR	Benches	**Overall Condition:** Acceptable **Cleanliness:** Acceptable	6:00 AM – 10:00 PM	Light	Teenagers, Adults, Senior Citizens	0.22	0 (0 percent)	0.22 (100 percent)
							TOTAL:	**26.02**	**11.89 (45.7 percent)**	**14.13 (54.3 percent)**
NO-ACTION OPEN SPACE FACILITIES WITHIN THE DEFINED OPEN SPACE STUDY AREA										
A	Future Open Space Facility[5]	Private	Benches and Landscaping	N/A	N/A	N/A	Teenagers, Adults, Senior Citizens	0.38	0 (0 percent)	0.38 (100 percent)
B	35th Avenue Visual Corridor[6]	Private	Benches and Landscaping	N/A	N/A	N/A	Teenagers, Adults, Senior Citizens	0.54	0 (0 percent)	0.54 (100 percent)
							TOTAL:	**26.94**	**11.89 (44.1 percent)**	**15.05 (55.9 percent)**

Notes:

[1] - It is assumed playgrounds feature an active and passive recreational area split of 90 and 10 percent, respectively, unless otherwise noted.

[2] - Based on the most recent Park Inspection data via NYCDPR's website (https://www.nycgovparks.org/park-features/parks-inspection-program, accessed November 25, 2020), unless noted otherwise

[3] - Based on field inspections / surveys conducted on December 6, 2020

[4] - Pursuant to the Two Coves Community Garden Website (http://www.twocovescommunitygarden.org/visiting-the-garden (accessed December 1, 2020) and field surveys on December 6, 2020, visitors can access the garden 20 hours per week as posted while volunteers can access the garden more regularly.

[5] - To be completed by 2022, pursuant to the Vernon Boulevard-Broadway Rezoning EAS (12DCP139Q, April 2019)

[6] - Currently under construction – assumed to be completed by the Proposed Project's 2024 Build Year

As illustrated in **Figure 2.2-1**, there are several public housing open space areas dedicated to their respective housing complexes within the defined open space study area for the Proposed Project (e.g., the New York City Housing Authority Astoria and Ravenswood housing complexes and the Queensview and North Queensview cooperative housing). These open spaces, totaling approximately 5.62 acres, are for the exclusive use of their respective housing complexes and are generally not publicly accessible. While these open spaces are not included in subsequent open space ratio calculations of this analysis, it should be noted that these spaces likely serve as primary recreation opportunities for residents of the associated housing developments, which represent significant proportions of the open space study area population.

Assessment of Existing Open Space Ratio and Adequacy

The existing open space ratio for the defined open space study area was calculated based on the estimated 2021 study area population (26,810 persons – see **Table 2.2-1**) and the total existing open space acreage for the defined study area (26.02 acres – see **Table 2.2-2**), resulting in a ratio of approximately 0.9705 acres of open space per 1,000 residents, which is below both the City's planning goal of 2.5 acres of open space per 1,000 persons city-wide and the 1.5-acre per 1,000 persons median ratio for New York City as a whole. The study area has an active open space ratio of 0.4435 acres per 1,000 residents (short of the City's target of 2.0 acres per 1,000 residents) and a passive open space ratio of 0.5270 acres per 1,000 residents (exceeding the City's target of 0.5-acre per 1,000 residents).

No-Action Condition

Open Space Study Area Population

In order to calculate the defined open space study area open space ratio in the No-Action Condition, the study area's No-Action Condition population was first projected to the Proposed Project's build year of 2024 from 2021 estimates using the same annual growth rates in **Table 2.2-1**, after which the proposed residential population at Projected Development Site 1 under the No-Action Condition was added, resulting in a population of 28,409 persons (see **Table 2.2-3 below**).

Table 2.2-3 – Future No-Action Condition Open Space Study Area Population

Census Tract	2021 Estimated Population	Annual Growth Rate (%)	2024 Population Estimate
Queens 37	0	0%	1,241[1]
Queens 39	1,369	-1.32%	1,315
Queens 43	2,703	0.97%	2,782
Queens 45	3,670	2.02%	3,897
Queens 47	3,659	-0.76%	3,576
Queens 75	4,058	-0.05%	4,090
Queens 77	1,948	2.71%	2,110
Queens 79	2,702	-2.17%	2,530
Queens 81	1,485	2.16%	1,583
Queens 85	787	-1.52%	752
Queens 87	4,429	-0.31%	4,389
TOTAL:	**28,041**	**N/A**	**28,265**
Project No-Action Population at Projected Development Site 1			144[2]
TOTAL FUTURE NO-ACTION STUDY AREA POPULATION:			**28,409**

Notes:
[1] - Reflects a 404-unit residential development currently under construction within Queens Census Tract 37 (assumed to be completed by the Proposed Project's 2024 build year), assuming an average household size of 3.07 persons based on 2014-2018 ACS data for Queens Census Tract 39, adjacent to Queens Census Tract 37 to the east (Queens Census Tract 37 has an average household size of 0 persons for all census years). The estimate also conservatively assumes full occupancy of the development.
[2] - Based on 62 proposed residential dwelling units in the No-Action Condition and an average household size of 2.32 persons

Open Space Study Area No-Action Condition Open Space Resources

Two future open spaces were identified within the defined open space study area for the projected development, including:

1. Pursuant to the EAS for the project located at Queens Block 315 directly west of Projected Development Site 1 (CEQR No. 12DCP139Q), a 16,547 sf (0.38-acre) landscaped public open space at that block would be created by the 2024 build year for the Proposed Project (assumed to be all passive open space based on a review of associated project plans – see **Table 2.2-2** and **Figure 2.2-2**, Map Key I.D. A); and

2. Pursuant to the same EAS and field surveys, a 0.54-acre visual corridor is currently under construction in the southwestern study area (see **Table 2.2-2** and **Figure 2.2-2**, Map Key I.D. B) and is projected to be completed by the Proposed Project's 2024 build year. This future open space is projected to be entirely passive in character, including benches, walking paths, lawns, and landscaping.

Therefore, under the No-Action Condition, 0.92-acres of new open space would be added to the study area, resulting in a total acreage of 26.92 acres, including 11.89 acres of active open space and 15.05 acres of passive open space.

Assessment of No-Action Condition Open Space Ratio and Adequacy

Under the No-Action Condition, the open space ratio within the defined open space study area for the Proposed Project would be 0.9483 acres per 1,000 persons, based on the projected population of 28,409 persons in 2024 and 26.94 acres of open space area. The active and passive open space study area ratios would be 0.4185 (below City's goal of 2.0 acres per 1,000 residents) and 0.5298 acres per 1,000 persons (above the City's goal of 0.5-acre per 1,000 residents), respectively.

<u>With-Action Condition</u>

As previously discussed, the development scenario considered under the With-Action Condition exceeds the analysis thresholds within an underserved open space area. As such, an analysis for the Proposed Development Scenario is provided below.

With-Action Condition

As discussed previously, the Proposed Development Scenario is projected to result in the generation of 376 additional residents over the No-Action Condition at Projected Development Site 1, while no new open space would be created. See **Table 2.2-4** below for a comparison of the defined study area population open space ratios under the No-Action and With-Action Conditions under the Proposed Development Scenario.

Table 2.2-4 – Open Space Study Area Incremental Increases

	No-Action Condition (2024)	With-Action Condition (2024)
Publicly Accessible Open Space (Acreage)	26.94	26.94
Study Area Population	28,409	28,785
Open Space Ratio (Acres per 1,000 Residents)	0.9483	0.9359
Incremental Open Space Ratio Decrease, No-Action to With-Action Condition:		-0.0124
Open Space Ratio Percent Decrease, No-Action to With-Action Condition:		**-1.31%**

As indicated in **Table 2.2-4** above, the open space ratio for the study area under the Proposed Development Scenario would be 0.9359-acre per 1,000 residents, a decrease of 0.0124-acre per 1,000 residents from the No-Action Condition, representing an approximate 1.31 percent decrease. The active and passive open space ratios under this development scenario were calculated to be 0.4131- and 0.5228-acre per 1,000 residents, respectively.

This With-Action Condition open space ratio would remain somewhat below the New York City median open space ratio of 1.5 acres of open space per 1,000 residents. This With-Action Condition active and open space ratio would also fall below the City's target of 2.0-acres per 1,000 residents.

Based on the foregoing, a detailed open space analysis is necessary for the Proposed Development Scenario.

2.2-4 – Detailed Open Space Analysis

The *2020 CEQR Technical Manual* considers an action to result in significant impacts to open space resources if it would directly displace or alter an existing resource to the detriment of its users. The Proposed Project would not result in the direct displacement of any parklands or recreational facilities. However, the Proposed Actions would result in decreases in the open space ratio, such that a detailed open space analysis is required.

Demographic Characteristics of the Defined Study Area

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 4 years old or younger use traditional playgrounds that have play equipment for toddlers and preschool children. Children ages 5 through 9 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 10 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 vehicle-free roadways. Adults also gather with families for picnicking, ad hoc active sports such as Frisbee, and recreational activities in which all ages can participate. Senior citizens typically engage in active recreation such as tennis, gardening, and swimming, as well as recreational activities that require passive facilities.

The residential population of the study area was broken down by age groups, indicated in **Table 2.2-5** below. As shown in that table, approximately 76.72 percent of the study area residents are adults, with approximately 63.97 percent between the ages of 20 and 64 and approximately 12.75 percentage 65 and

older. Conversely, 23.28 percent of the study area population are children, with 6.45 percent under the age of 5 and 16.83 percent between the ages of 5 and 19.

Table 2.2-5 –Defined Open Space Study Area Population by Age Group

Age Category	Total Persons	Percent of Population (%)
4 Years and Younger	1,724	6.45
5 to 9 Years	1,557	5.83
10 to 14 Years	1,331	4.98
15 to 19 Years	1,609	6.02
20 to 64 Years	17,094	63.97
65 Years and Older	3,406	12.75
TOTAL:	**26,721**	**100.00**

Inventory of Open Space Resources in the Defined Study Area

According to the *2020 CEQR Technical Manual*, open space may be public or private and may be used for active or passive recreational purposes. Pursuant to CEQR, public open spaces are defined as facilities open to the public at designated hours on a regular basis and are assessed for impacts under CEQR guidelines, whereas private open spaces are not accessible to the general public on a regular basis, and are therefore only considered qualitatively. Field surveys and secondary sources were used to determine the number, availability, and condition of publicly accessible open space resources in the study area.

An open space is determined to be active or passive by the uses which the design of the space allows. Active open space is the part of a facility used for active play such as sports or exercise and may include playground equipment, playing fields and courts, swimming pools, skating rinks, golf courses, lawns and paved areas for active recreation. Passive open space is used for sitting, strolling, and relaxation, and typically contains benches, walkways and picnicking areas. However, some passive spaces can be used for both passive and active recreation; such as a green lawn or riverfront walkway, which can also be used for ball playing, jogging or rollerblading. Within the defined study area, all publicly accessible existing and future open spaces were inventoried and identified by their location, size, owner, type, utilization, equipment, hours, and condition of available open space (refer to **Table 2.2-2** and **Figure 2.2-2**). The information used for this analysis was gathered from the DPR's website, DCP's Primary Land Use Tax Lot Output (PLUTO) data, and through a field survey conducted in December 2020.

The condition of each public open space facility is based on DPR's Park Inspection Program (PIP), derived from an assessment of up to sixteen features, grouped into one of three categories: cleanliness, landscape, and structural features. When a park is inspected, each feature is evaluated and is deemed either "Acceptable" or "Unacceptable" by PIP inspectors. The four cleanliness features are used to determine each park's cleanliness rating while all sixteen features are used to determine the overall condition. For those private open space facilities (or otherwise not subject to DPR's inspection program), field observations were used to make determinations on the overall condition and cleanliness of the facility similar to that of the PIP.

Determination of the intensity of use of the facilities were qualitative, based on an observed degree of activity or utilization on a weekend between 11:30 AM to and 2:30 PM. If a facility seemed to be at or near capacity with the majority of equipment in use, then utilization was considered heavy. If equipment was in use but could accommodate additional users, utilization was considered moderate. If equipment was being used by few people, utilization was considered light. **Table 2.2-2** provides relevant information for each open space in the defined open space study area, while **Figure 2.2-2** maps their locations.

Quantitative Analysis of Open Space Adequacy

There are nine existing publicly-accessible open space resources and two future publicly accessible open spaces (to be completed by the Proposed Project's 2024 build year) within the study area comprising 26.92 acres, including 11.89 acres of active open space and 15.05 acres of passive open space.

Within the study area, the closest public open space resources to the Proposed Project is the 6.28-acre Socrates Sculpture Park (**Figure 2.2-2** Map Key I.D. 6). The Socrates Sculpture Park, a neighborhood park pursuant to the NYC DPR, is entirely dedicated to passive recreation, featuring open lawns with art installations. The overall condition and cleanliness of this open space was graded as acceptable by the NYC DPR PIP) while the utilization of Socrates Sculpture Park was observed as light.

The future 0.38-acre publicly-accessible open space located directly southwest of the rezoning area (**Figure 2.2-2** Map Key I.D. A) would be constructed as part of a redevelopment project at Queens Block 315 projected to be completed by the Proposed Project's 2024 build year. The entire open space is projected to be passive recreation, featuring benches and landscaping.

Rainey Park and the Costco Waterfront Esplanade are located west/southwest of the rezoning area (**Figure 2.2-2** Map Key I.D.s 8 and 7, respectively). The Costco Waterfront Esplanade is a 1.05-acre privately owned passive recreation area, featuring a walking path and seating areas. The southwestern portion of the Costco Waterfront Esplanade connects to Rainey Park, an 8.09-acre public park featuring a variety of passive and active recreation amenities, including playgrounds, athletic fields, open lawn areas, benches, dog-friendly area, etc. The condition of both resources was observed to be acceptable (including both their overall condition and cleanliness) with utilization at both resources was observed to be light.

The Astoria Health Playground, a 0.21-acre public playground located directly north of the rezoning area (**Figure 2.2-2** Map Key I.D. 1), with an overall condition and cleanliness rating of acceptable per the NYC DPR PIP. Utilization at this resource was observed to be moderate.

There are two publicly-accessible open spaces at the northern end of the defined study area, including the Two Coves Community Garden and Hallets Cove/Astoria Houses Playground (**Figure 2.2-2**, Map Key I.D.s 2 and 3, respectively). The Two Coves Community Garden is a 0.78-acre public community garden observed to have an acceptable overall condition and cleanliness with utilization levels observed as light. The Hallets Cove/Astoria Houses playground is a 5.84-acre public playground and athletic court facility with overall and cleanliness conditions of acceptable per the NYC DPR PIP. Utilization at this resource was observed to be light.

Ravenswood Playground is located south of the Proposed Project (**Figure 2.2-2**, Map Key I.D. 4) featuring playground equipment, athletic courts, and fitness equipment, with a NYC DPR PIP grade of acceptable for both overall condition and cleanliness. Utilization at this resource was observed to be light.

The future 35th Avenue Visual Corridor open space is located south of Rainey Park in the southwestern study area (**Figure 2.2-2**, Map Key I.D. B). This will be a 0.54-acre privately-owned publicly accessible space that is entirely dedicated to passive recreation (includes benches, walking paths, and landscaping).

Spirit Playground and Sixteen Oaks Grove are located in the southern portion of the study area (**Figure 2.2-2**, Map Key I.D.s 5 and 9, respectively). Sixteen Oaks Grove is a 0.22-acre triangle/plaza featuring passive recreation amenities (e.g., benches); the NYC DPR PIP indicates the overall condition and

cleanliness of this resource is acceptable, while its utilization was observed to be light. Spirit Playground is a 0.79-acre public playground featuring playground equipment and athletic courts, with its overall condition and cleanliness graded as acceptable by the NYC DPR PIP. Utilization at this resource was observed to be light.

Qualitative Analysis of Open Space Adequacy

As previously discussed, there are approximately 5.62 acres of dedicated open space facilities (e.g., playgrounds, athletic courts, landscaping, benches, etc.) associated with housing complexes within the defined open space study area that serve as the primary recreation facilities for those respective complex residents (see **Figure 2.2-2**). While the area of these facilities was not included in the total open space acreage used in the analysis, these facilities likely defray demand on surrounding, publicly-accessible open space, such that the calculated open space ratios are likely an understatement of open space adequacy within the study area.

Pursuant to the *2020 CEQR Technical Manual*, regional parks proximate to a defined open space study area can be noted in the qualitative assessment of open space adequacy in detailed analyses, as such facilities attract users from greater distances than neighborhood parks and the like. Astoria Park, while only defined as a community park by the NYC DPR, is a major open space slightly north of the defined open space study and less than one-mile from the Proposed Project. The 59.96-acre public park contains a multitude of facilities, including the Astoria Park Pool (New York City's largest public swimming pool), 14 tennis courts, a track, a bandstand, multiple trails, basketball and bocce courts, a skate park, and two playgrounds, as well as various passive recreation opportunities, including multiple benches and other viewing areas along its waterfront providing views of the New York City skyline. Based on the breadth of amenities this open space resource provides and its relatively close proximity to the Proposed Project (despite being located outside of the defined open space study area), it can be assumed that Astoria Park would attract users from the Proposed Project and defray demand on surrounding open spaces in the defined open space study area, such that the calculated open space ratios are likely an understatement of open space adequacy within the study area.

<u>Open Space Adequacy under the With-Action Condition</u>

As previously stated, the Proposed Actions would not result in any direct displacement of existing public open space resources. The open space ratio under the Proposed Development Scenario of the With-Action Condition would be 0.9359 (a 1.31 percent decrease from the No-Action Condition), therefore remaining below the city-wide median of 1.5-acres per 1,000 residential and the planning goal of 2.5 acre per 1,000 residents. However, the Proposed Development Scenario is not anticipated to significantly exacerbate the deficiency of open space in the study area.

There are 11 publicly-accessible open space facilities within the defined open space study area (including nine existing spaces and two future open spaces) that provide a range of active and passive amenities, including playgrounds and fitness equipment, athletic fields and courts, benches, bicycle paths, and walking paths. The overall condition and cleanliness of all of these existing open space resources was determined to be acceptable (based on the NYC DPR PIP and field observations), with utilization generally observed as light, indicating these resources could easily accommodate additional users without being adversely impacted.

Additionally, there is a significant amount of additional open space within and nearby outside of the study area that alleviates the low ratio of open space resources located within the study area. This includes 5.62 acres of dedicated open space facilities for housing complexes within the defined open space study and the nearly 60-acre Astoria Park located one-mile north of the Proposed Project just outside of the defined study area.

The population added under the Proposed Development Scenario is not expected to noticeably affect utilization of the study area's open space. Under the development scenario, the ratio of open space to residents would continue to be lower than citywide averages of open space and the optimal planning goals furnished by the City. Under the Proposed Development Scenario, the projected residential population is expected to exhibit similar characteristics to the current residents of the study area and the breakdown of the population is expected to remain the same. As previously discussed, the passive open space ratio under the Proposed Development Scenario would be 0.5228-acres per 1,000 residents, above the city-wide planning goal for this type of open space. Senior citizens would be more likely to use this type of open space due to physical limitations and there are several open space resources featuring abundant passive recreation opportunities nearby to the Proposed Project, including Socrates Sculpture Park, Rainey Park, and the Costco Waterfront Esplanade.

2.2-5 – Conclusions

Pursuant to the *2020 CEQR Technical Manual* guidelines, a project may result in a significant adverse impact on open space resources if there would be a direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing and anticipated users and/or it would reduce the open space ratio and consequently result in overburdening existing facilities or further exacerbates a deficiency in open space. A decrease in the open space ratio of 5 percent or more is generally considered to be a significant adverse impact on open space resources. However, if the existing open space ratio is low (as in this case), even an open space ratio change of less than 1 percent may result in potential significant open space impacts.

The Proposed Actions would not result in the direct displacement or alteration of existing public open space resources in the study area. The open space ratio under the Proposed Development Scenario of the With-Action Condition would be 0.9359 (a 1.31 percent decrease from the No-Action Condition). As noted above, there is a significant amount of additional open space within and nearby outside of the study area that alleviates the low ratio of open space resources located within the study area. This includes 5.62 acres of dedicated open space facilities for housing complexes within the defined open space study and the nearly 60-acre Astoria Park located one-mile north of the Proposed Project just outside of the defined study area. Although there would continue to be a shortage of publicly accessible open space adequacy in the study area under the Proposed Development Scenario, the increase in demand from the Proposed Actions would not result in a significant decrease in open space ratios that result in overburdening existing and future facilities or significantly exacerbating deficiencies in open space.

Existing open space resources within the study area were found to be in acceptable condition and contain a variety of active and passive recreation uses. Further, dedicated open spaces for housing complex residents in the defined study area and the presence of Astoria Park slightly north of the study area alleviate the low open space ratios exhibited in the study area.

Based on the foregoing, the Proposed Actions would not result in a significant adverse open space impacts.

Figure 2.2-1 – Underserved Open Space Area Queens Community District 1: Astoria

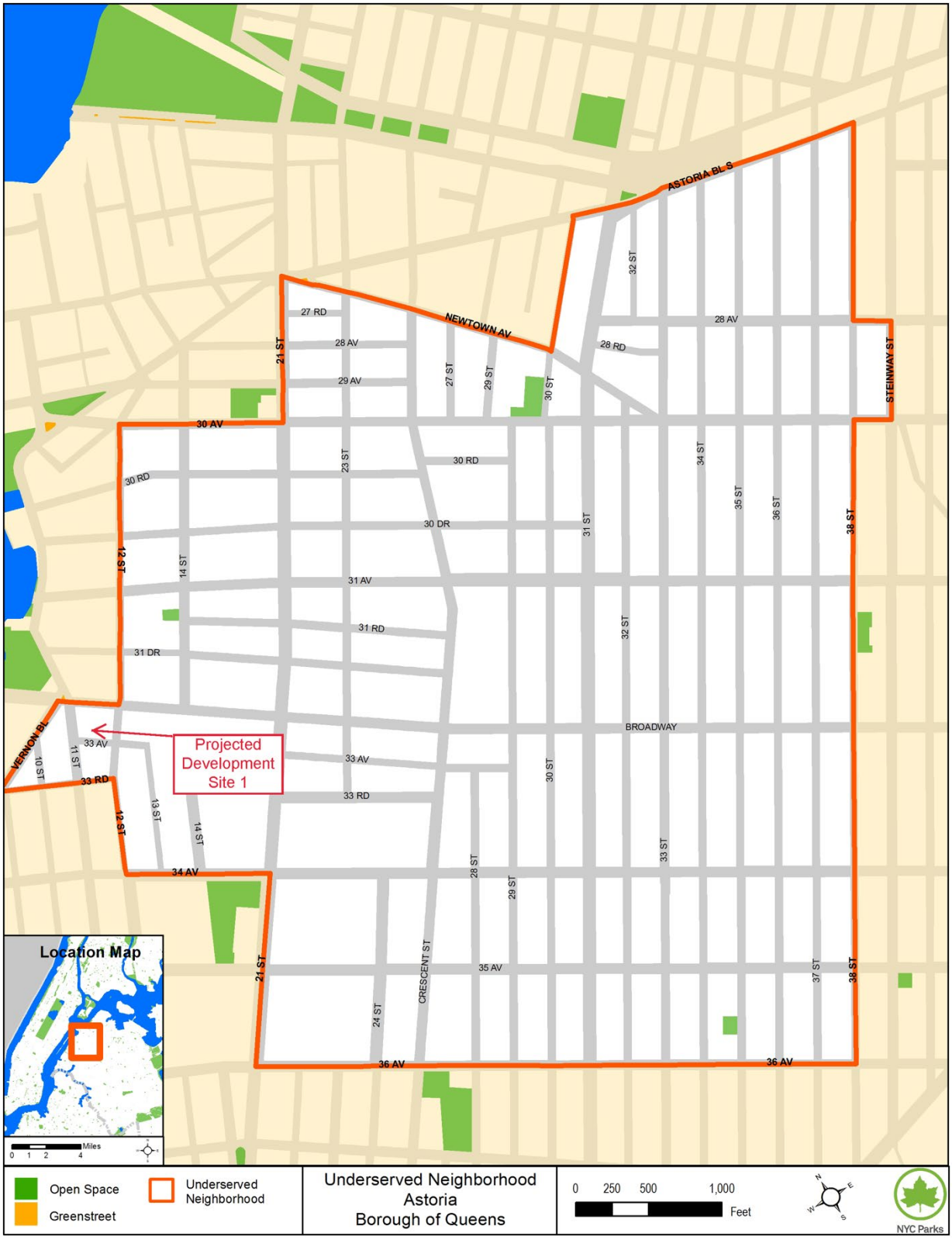
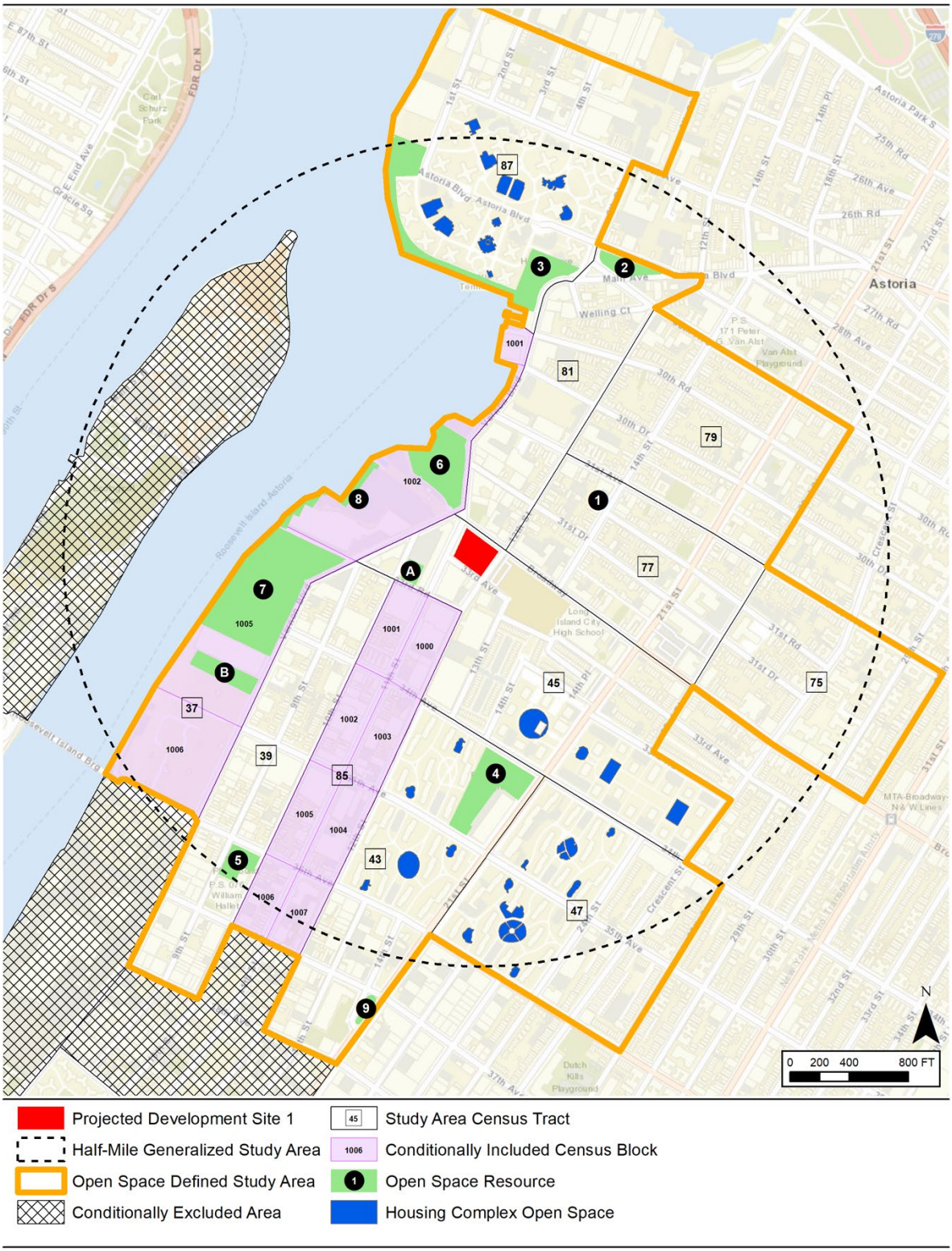


Figure 2.2-2 – Open Space Study Area Map for the Proposed Project



2.3 SHADOWS

A shadow is defined in the *2020 CEQR Technical Manual* as the condition that results when a building or other built structure blocks the sunlight that would otherwise directly reach a certain area, space, or feature. The purpose of this chapter is to assess whether new structures may cast shadows on sunlight sensitive publicly accessible resources or other resources of concern such as natural resources, and to assess the significance of their impact.

2.3-1 - Introduction

According to the *2020 CEQR Technical Manual*, a shadows assessment is required for projects that would result in new structures greater than 50 feet in height or located adjacent to, or across the street from, a sunlight-sensitive resource. Such resources include publicly-accessible open spaces, sunlight-sensitive natural features, or historic resources with sun-sensitive features. 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 eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

The Proposed Actions could result in the redevelopment of Projected Development Site 1 with a 7-story mixed-use residential and retail commercial building with a zoning height of 75 feet (the building would measure 85 feet based on a maximum 75-foot building height with multiple 10-foot rooftop bulkheads), representing a 45-foot incremental height increase over the No-Action Condition. Based on this incremental height increases a preliminary shadows screening is required.

2.3-2 - Methodology

In accordance with the *2020 CEQR Technical Manual*, a preliminary screening assessment is conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year. This preliminary screening assessment consists of three tiers of analysis:

- *Tier 1 Screening:* The first tier determines a radius around the proposed buildings representing the longest shadow that could be cast. The radius is calculated based on a factor of 4.3 times the proposed maximum building height. If there are sunlight-sensitive resources within the radius, the analysis proceeds to the second tier;

- *Tier 2 Screening:* The second tier analysis 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. According to the *2020 CEQR Technical Manual*, shadows cannot be cast within New York City outside of 108 degrees from True North;

- *Tier 3 Screening:* 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. For the Tier 3 screening, three-dimensional modeling software with the capacity to model shadows is used, and the maximum building envelope that could be achieved because of a proposed action is modeled and geo-located within the program. Terrain provided by the modeling software is also

incorporated into the model to account for how changes in elevation throughout the study area can influence shadows that could be cast by the proposed project. The representative days are December 21 (winter solstice), June 21 (summer solstice), March 21/September 21 (vernal/autumnal equinox), and May 6/August 6 (halfway between summer solstice and the equinoxes). The modeling software is also used to approximate times that shadows cast from the proposed project could enter and exit a resource.

If the Tier 3 screening indicates that, in the absence of intervening buildings, shadows from the proposed project would reach a sunlight sensitive resource on any of the representative analysis days, a detailed shadow analysis could be warranted. Because existing buildings may already cast shadows on a sun-sensitive resource (or a future building could be expected to cast shadows), the proposed project may not result in new incremental shadows upon that resource. The detailed shadow analysis models a baseline condition (the No-Action Condition) that is compared to the future condition resulting from the proposed project (the With-Action Condition) to illustrate the shadows cast by existing or future buildings and distinguish the new incremental shadow cast by the project. Like in the Tier 3 analysis, the detailed analysis considers the maximum building envelope that could be achieved as a result of the proposed project.

2.3-3 – Preliminary Shadows Screening Assessment

Tiers 1 and 2 Screening Assessment

Figure 2.3-1 (appended to the end of this Section), illustrates the 365.5-foot maximum shadow screening radius for the Proposed Project, based on an overall building height of 85 feet (including a 75-foot building height and additional 10-foot rooftop bulkheads) multiplied by the *2020 CEQR Technical Manual* specified factor of 4.3.

As shown in **Figure 2.3-1**, there are five sunlight-sensitive resources partially or wholly within the maximum shadow screening radius for the Proposed Project, including two existing open space resources, one Greenstreets facility, a sculpture garden associated with the Noguchi Museum, and a No-Action Condition open space associated with the *Vernon Boulevard-Broadway Rezoning* project, all of which are described below.

1. *Socrates Sculpture Park (O1):* A 6.28-acre neighborhood park owned and operated by the NYC DPR. The park is primarily a venue for passive recreation, including various art exhibits situated in the park's lawn areas among landscaping features (e.g., shrubbery and trees, etc.). That portion of the Socrates Sculpture Park within the maximum shadow screening radius for the proposed project includes the Vernon Boulevard entrance and various lawn and landscaped areas.

2. *Greenstreets, Vernon Boulevard (O2):* A small (approximately 0.01-acre) Greenstreets facility located at the intersection of Vernon Boulevard and Broadway, owned and maintained by the NYC DPR as part of the NYC Greenstreets Program. The facility contains one tree situated in small planter bed.

3. *Long Island City High School Athletic Fields (O3):* A 3.22-acre athletic field complex, including a football field and multiple baseball/softball fields with associated infrastructure serving the Long Island City High School (and therefore owned and operated by the New York City Department of Education [NYC DOE]). That portion of the athletic fields within the maximum shadow screening

radius for the proposed project includes a paved parking area, the majority of the football field, and the western baseball/softball field. It is noted that the athletic fields contain no live vegetation, and the fields themselves are synthetic turf, clay, and/or dirt.

4. *Noguchi Museum Sculpture Garden (O4)*: An approximate 0.21-acre landscaped sculpture garden associated with the Noguchi Museum to the west of the Proposed Project. While technically not meeting the thresholds of a public open space resource, it was included for the purposes of a conservative analysis consistent with the shadows analysis found in the *Vernon Boulevard – Broadway Rezoning*.

5. *Future Publicly-Accessible Open Space (O5):* A future 0.38-acre publicly accessible open space at the southwest corner of the Queens Block 315 to be constructed by the 2024 build year as part of redevelopment associated with the *Vernon Boulevard – Broadway Rezoning*.

As indicated above, all these open space resources are considered sunlight sensitive. While a southern portion of the Long Island City High School Athletic Fields falls within that area that cannot be shaded by the Proposed Project (i.e., outside of 108 degrees from True North), a significant northern portion remains in the area of the longest shadow for the Proposed Project. All other identified resources do not fall within the area that cannot be shaded by the Proposed Project. Therefore, based on the foregoing, the Tiers 1 and 2 shadows screenings could not rule out the potential for significant adverse shadow impacts to all five of these sunlight sensitive resources, all of which therefore warrant a Tier 3 analysis.

Tier 3 Screening Assessment

In accordance with the *2020 CEQR Technical Manual*, a Tier 3 screening assessment was performed because the Tier 1 and Tier 2 assessments identified multiple sunlight-sensitive resources within ±108 degrees of True North and within the area of the longest shadow that could be cast by the proposed project. The Tier 3 screening assessment was performed for the four representative days of the year set forth in the *2020 CEQR Technical Manual*: December 21, the winter solstice and shortest day of the year; March 21/September 21, the equinoxes; May 6/August 6, the midpoints between the summer solstice and the equinoxes; and June 21, the summer solstice and the longest day of the year.

In accordance with the *2020 CEQR Technical Manual*, a model of the development site building representing the With-Action RWCDS maximum was developed in SketchUp three-dimensional modeling software. The model was geo-located and the surrounding terrain was imported into the models to account for differences in topography. As noted above, the Tier 3 shadow screening shows the shadows that could be cast as a result of the proposed project but does not account for existing buildings which may already cast shadows on the identified open space resource. The Tier 3 analysis also does not account for shadow that would be expected in the No-Action condition from the development site. **Figures 2.3-2a to 2.3-2d** (appended to the end of this section) illustrate the results of the Tier 3 analysis for the proposed project.

Table 2.3-1 below identifies that Tier 3 shadow durations on all of the sunlight sensitive resources carried forward from the Tier 2 analysis as discussed above.

Table 2.3-1 – Tier 3 Shadow Durations by Sunlight Sensitive Resource

	December 21		March 21/ September 21		May 6/August 6		June 21	
Sunlight Sensitive Resource	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*
Socrates Sculpture Park (O1)	8:51 AM - 10:09 AM	1 hour, 18 mins	None	N/A	None	N/A	None	N/A
Greenstreets, Vernon Boulevard (O2)	8:51 AM - 12:14 PM	3 hours, 23 mins	None	N/A	None	N/A	None	N/A
Long Island City High School Athletic Fields (O3)	None	N/A	3:44 PM - 4:29 PM	45 mins	3:25 PM - 5:18 PM	1 hour, 53 mins	3:28 PM - 6:01 PM	2 hours, 33 mins
Future Publicly-Accessible Open Space (O4)	None	N/A	None	N/A	None	N/A	5:57 AM - 6:01 AM	4 mins
Noguchi Museum Sculpture Garden (O5)	None	N/A	None	N/A	None	N/A	None	N/A

A discussion of the findings of the Tier 3 screening analysis on a resource-by-resource basis is provided below.

Socrates Sculpture Park (O1)

As indicated in **Table 2.3-1** and illustrated in **Figure 2.3-2a**, projected Tier 3 shadows would fall on southern portions of this open space from 8:51 AM to 10:09 AM during the December 21 analysis period for a total duration of 1 hour, 18 minutes. Based on this identified shadow duration, a detailed analysis is necessary.

As indicated in **Table 2.3-1** and **Figures 2.3-2b through 2.3-2d**, no Tier 3 shadows from the proposed project would fall on this park during the March 21/September 21, May 6/August 6, or June 21 analysis days, and no further analysis is necessary.

Greenstreets, Vernon Boulevard (O2)

As indicated in **Table 2.3-1** and illustrated in **Figure 2.3-2a**, projected Tier 3 shadows would fall on this Greenstreets facility during the December 21 analysis period for a total duration of 3 hours, 23 minutes (from 8:51 AM to 12:14 AM). As such, a detailed shadows analysis is necessary.

As indicated in **Table 2.3-1** and **Figures 2.3-2b through 2.3-2d**, no Tier 3 shadows from the Proposed Project would fall on this Greenstreets facility during the March 21/September 21, May 6/August 6, or June 21 analysis days, such that no further analysis is necessary.

Long Island City High School Athletic Fields (O3)

Tier 3 shadows from the Proposed Project are anticipated to fall on these athletic fields during the March 21/September 21, May 6/August 6, and June 21 analysis days for durations of 45 minutes (from 3:44 PM to 4:29 PM), 1 hour, 53 minutes (from 3:25 PM to 5:18 PM), and 2 hours, 33 minutes (from 3:28 PM to 6:01 PM), , as illustrated in **Figures 2.3-2b through 2.3-2d** and indicated in **Table 2.3-1**. However, as shown in the aforementioned figures, these Tier 3 shadows would be mostly or wholly limited to a paved parking and storage areas at the western end of the athletic field, which features no landscaping or other sunlight sensitive features or uses.

On the March 21/September 21 and May 6/August 6 analysis days, projected Tier 3 shadows on this resource would be wholly limited to this paved parking area, such that no shadow impacts to sunlight

sensitive resources could occur (see **Figures 2.3-2b and 2.3-2c**) and no further analysis would be necessary. During the May 6/September 6 analysis day, projected Tier 3 shadows would fall on actual athletic field area from 5:11 PM to 5:18 PM for a total duration of 9 minutes, which is below the 10-minute threshold for significant adverse shadow impacts pursuant to the *2020 CEQR Technical Manual*; as such, no further analysis is necessary. However, during the June 21 analysis period, projected Tier 3 shadows would begin to fall on actual athletic field areas associated with this resource at 5:32 PM within the identified shadow duration period and last until 6:01 PM (a total duration of 29 minutes; see **Figure 2.3-2d**). As such, a detailed shadows analysis is necessary.

As indicated in **Table 2.3-1** and illustrated in **Figure 2.3-2a**, projected Tier 3 shadows would not fall on this resource during the December 21 analysis period and, therefore, no further analysis is necessary.

Noguchi Museum Sculpture Garden (O4)

As illustrated in **Figures 2.3-2a through 2.3-2d** and indicated in **Table 2.3-1**, no Tier 3 shadows would fall on this open space resource during any of the required analysis days. As such, there would be no resultant significant adverse shadows impacts and no further analysis is warranted.

Future Publicly Accessible Open Space (O5)

As illustrated in **Figure 2.3-2d** and indicated in **Table 2.3-1**, Tier 3 shadows are projected to fall on a small northern portion of this future open space from 5:57 AM to 6:01 AM (a four-minute duration) on the June 21 analysis period. This duration would be extremely short (i.e., less than 10 minutes) such that no significant adverse impacts to the viability of any vegetation or the public's use and enjoyment of this resource could result, pursuant to the specifications of the *2020 CEQR Technical Manual*, and no further analysis is necessary.

As indicated in **Table 2.3-1** and illustrated in **Figures 2.3-2a through 2.3-2c**, no Tier 3 shadows from the Proposed Project would fall on this open space resource during the December 21, March 21/September 21, or May 6/August 6 analysis days, such that no significant adverse shadow impacts would result, and no further analysis is warranted.

2.3-4 – Detailed Shadows Analysis

For the detailed analysis, the 3d model used in the Tier 3 assessment was used to compare No-Action Condition shadow conditions at the identified resources of concern (including the No-Action Condition at Projected Development Site 1) versus the proposed With-Action RWCDS development to determine the new incremental shadows on these resources. **Table 2.3-2** below shows entry and exit times and total durations of new incremental shadows on these identified resources of concern projected from the With-Action RWCDS.

Table 2.3-2 – Detailed Analysis New Incremental Shadow Durations on Resources of Concern

	December 21		March 21/ September 21		May 6/August 6		June 21	
Sunlight Sensitive Resource	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*	*Time Duration*	*Time Elapsed*
Socrates Sculpture Park (O1)	8:51 AM - 10:09 AM	1 hour, 18 mins	None	N/A	None	N/A	None	N/A
Greenstreets, Vernon Boulevard (O2)	8:51 AM - 12:14 PM	3 hours, 23 mins	None	N/A	None	N/A	None	N/A
Long Island City High School Athletic Fields (O3)	None	N/A	None	N/A	None	N/A	5:32 PM - 6:01 PM	29 minutes

Figure 2.3-3a through **Figure 2.3-4b** (appended to the end of this document) provide representative illustrations of new incremental shadows on these resources, with a discussion of the findings of the detailed shadow analysis provided on a resource-by-resource basis below.

Socrates Sculpture Park (O1)

New incremental shadows as a result of the Proposed Actions on the Socrates Sculpture Park during the December 21 analysis period would last for a duration of 1 hour, 18 minutes (8:51 AM to 10:09 AM) and be limited to southern portions of the open space (see **Table 2.3-2** and **Figure 2.3-3a** and **Figure 2.3-3b**). These new incremental shadows would fall during the winter months outside of the *2020 CEQR Technical Manual* specified growing season (i.e., March through October), such that the viability of vegetation within the park would not be jeopardized as it would be dead or dormant at that time. Further, utilization of this open space would be at an annual low during the winter months due cold and inclement weather, such that the public's use and enjoyment of this resource for passive recreation would not be significantly jeopardized by these new incremental shadows.

Based on the foregoing, the Proposed Actions are not anticipated to create significant adverse shadows impacts on Socrates Sculpture Park during the December 21 analysis day, and no further analysis is necessary.

Greenstreets, Vernon Boulevard (O2)

The Greenstreets facility along Vernon Boulevard would receive new incremental shadows from the Proposed Actions for 3 hours, 23 minutes during the morning hours of the December 21 analysis period (from 8:51 AM to 12:14 PM; see **Table 2.3-2** and **Figure 2.3-3a and Figure 2.3-3b**). These new incremental shadows would fall during the winter months outside of the *2020 CEQR Technical Manual* specified growing season (i.e., March through October), such that the viability of the limited vegetation at this Greenstreets facility would not be jeopardized as it would be dead or dormant at that time. Further, these shadows would not impair the facility's primary function as a site for the infiltration and retention of stormwater resulting from precipitation events. Overall, during the December 21 analysis day, the viability of vegetation at this Greenstreets median and its stormwater retention function are not expected to be jeopardized as a result of new incremental shadows resulting from the Proposed Actions and no further analysis is warranted.

Long Island City High School Athletic Fields (O3)

Small, northwestern portions of the athletic fields associated with the Long Island City High School would receive new incremental shadows during the June 21 analysis day from 5:32 PM to 6:01 PM (i.e., 32 minutes; see **Table 2.3-2** and **Figure 2.3-4a** through **Figure 2.3-4b**). No portion of the Long Island City High School athletic fields contains live vegetation, such that new incremental shadows could not jeopardize the viability of any flora at this resource. Further, these shadows would only fall during the summer months (when school is out of session and the fields are therefore not regularly used for organized activities). Additionally, due to the small extent of these new incremental shadows and their presence only towards the end of the analysis day, active recreational uses are not expected to be significantly affected. As such, projected new incremental shadows from the Proposed Actions are not expected to jeopardize the public's use and enjoyment of these athletic fields and no further analysis is warranted.

2.3-5 – Conclusions

New incremental shadows generated from the Proposed Actions have the potential to reach five identified sunlight sensitive resources, including the Socrates Sculpture Park, a Greenstreets facility at the intersection of Vernon Boulevard and Broadway, large portions of athletic fields associated with the Long Island City High School, portions of the Noguchi Museum sculpture garden, and a future open space at Queens Block 315. The entirety and/or large portions of all of these resources are situated within 108 degrees of true north within the maximum shadow screening radius for the Proposed Project, such that a Tier 3 analysis was necessary. The Tier 3 analysis found that projected shadows under the With-Action Condition could fall on the Socrates Sculpture Park and Greenstreets facility during the December 21 analysis day, the Long Island City High School athletic fields during the March 21/September 21, May 6/August 6, and June 21 analysis days, and the future open space at Queens Block 315 during the June 21 analysis day.

Those identified Tier 3 shadows projected to fall on Socrates Sculpture Park and the Greenstreets facility along Vernon Boulevard required detailed shadows analyses, which found that such new incremental shadows would fall during winter months, which would impact neither the viability of their vegetation, the public's use and enjoyment of these resources, and/or the primary function of these resources. Tier 3 shadows at the future open space resource at Queens Block 315 found that such shadows would only fall on the resource for a maximum duration of 4 minutes, which is below the *2020 CEQR Technical Manual*-specified 10-minute duration threshold for new incremental shadows to be considered significant. Tier 3 shadows on the Long Island City High School athletic fields on the three identified analysis days would be largely limited to a western parking area that is not sunlight sensitive, apart from a 29-minute window at the end of the June 21 analysis day, for which a detailed shadows analysis was performed. This analysis showed that new incremental shadows during this 29-minute period would be limited to a small, northwestern portion of the resource that contains no sunlight sensitive vegetation and would occur when school is out of session and the fields are therefore not regularly used for organized activities.

Based on the foregoing analyses, no significant adverse shadows impacts would result at any of the identified sunlight sensitive resources as a result of the Proposed Actions and no further analysis is necessary.

Figure 2.3-1 – Tiers 1 and 2 Shadow Screening Assessment

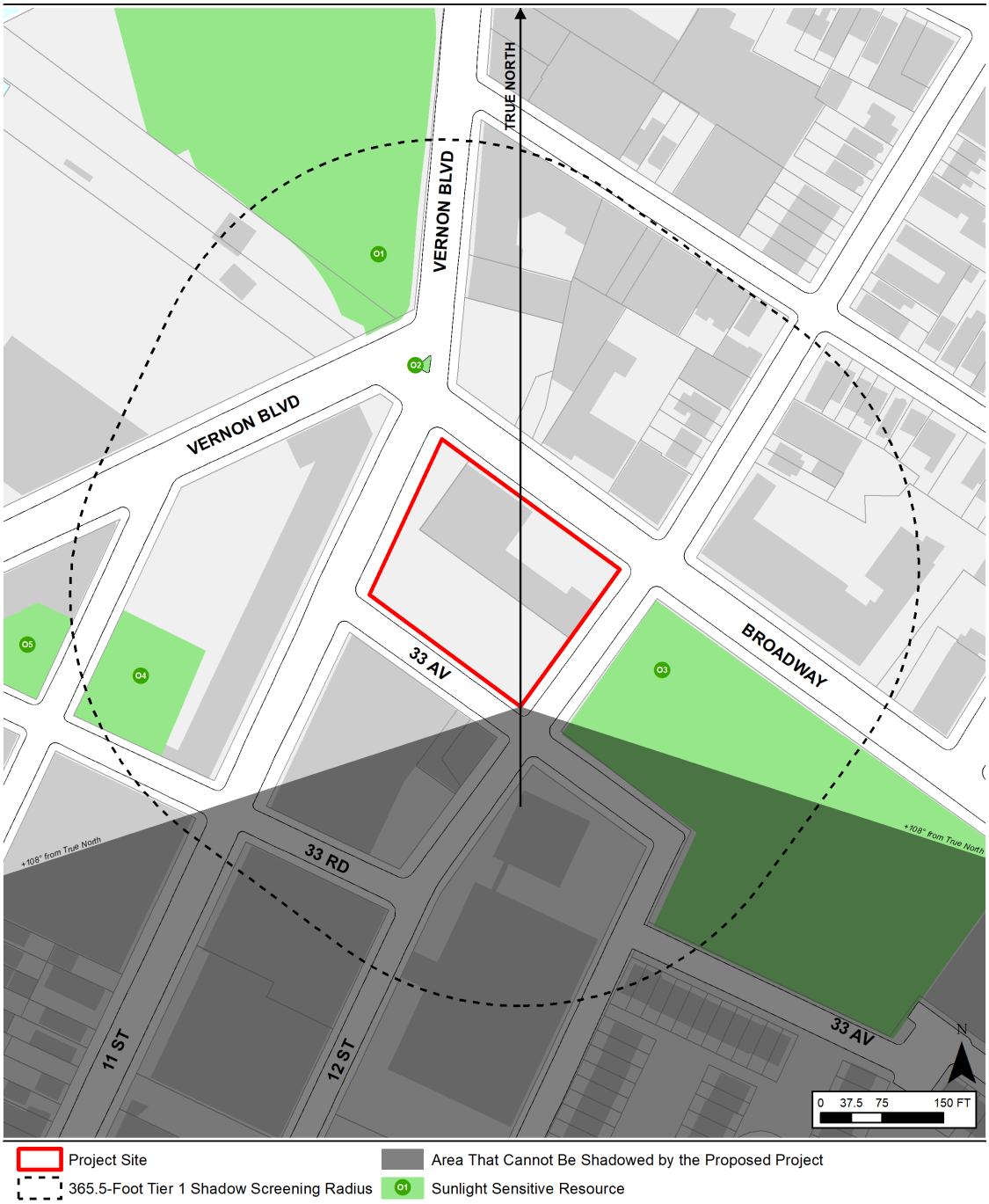


Figure 2.3-2a – Tier 3 Shadow Screening Assessment, December 21 Analysis Day

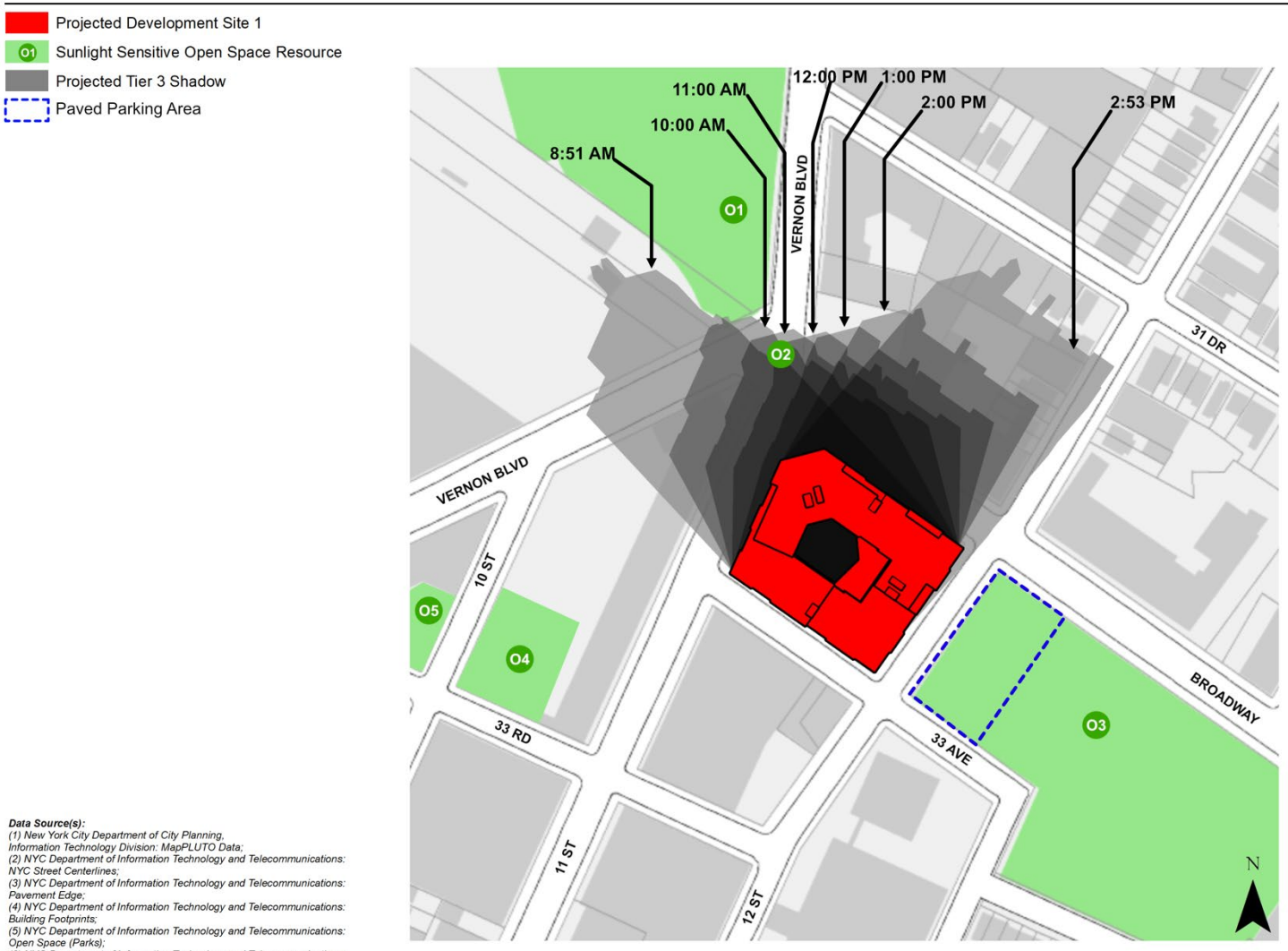


Figure 2.3-2b – Tier 3 Shadow Screening Assessment, March 21 / September 21 Analysis Day

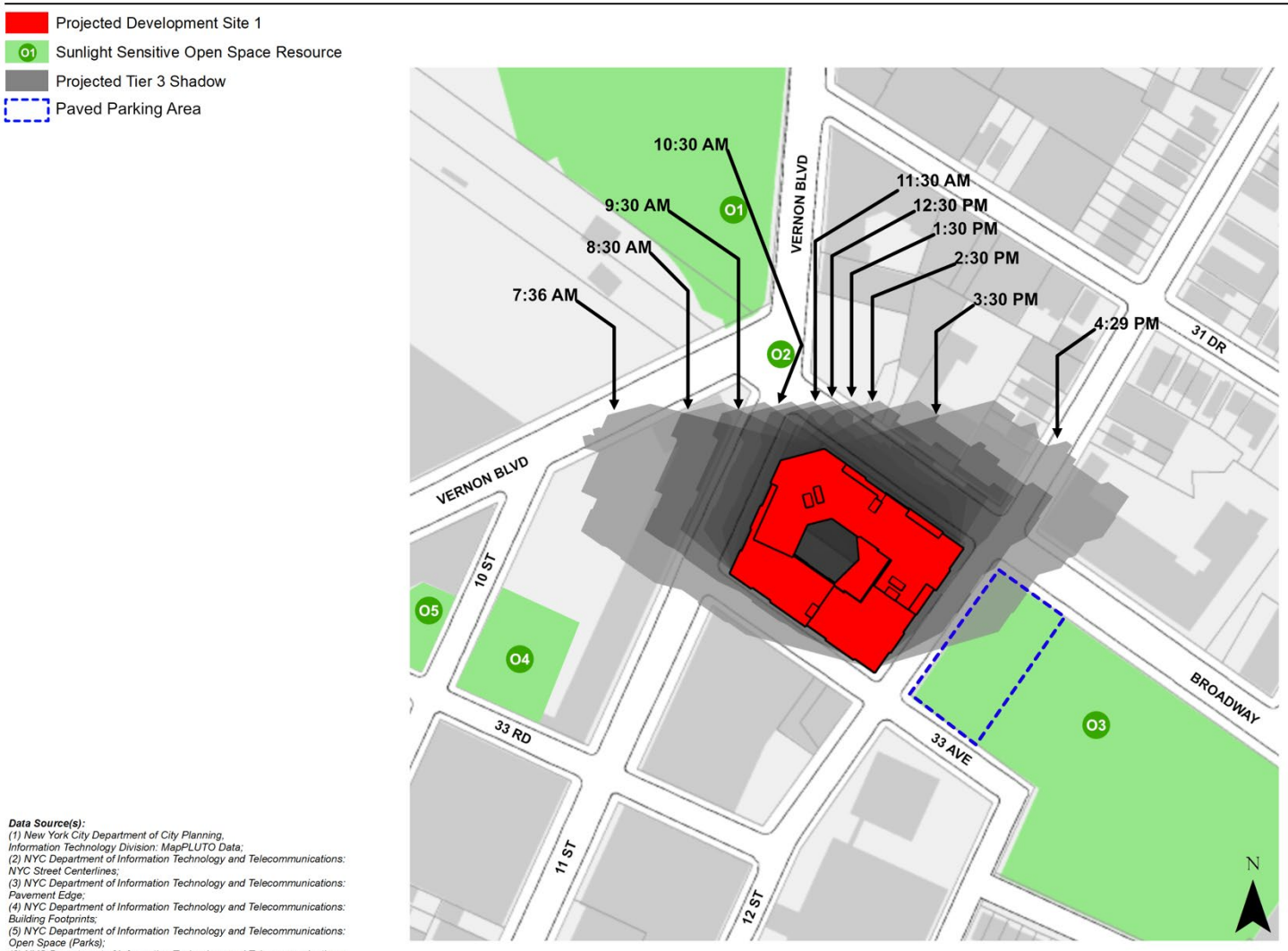


Figure 2.3-2c – Tier 3 Shadow Screening Assessment, May 6 / September 6 Analysis Day

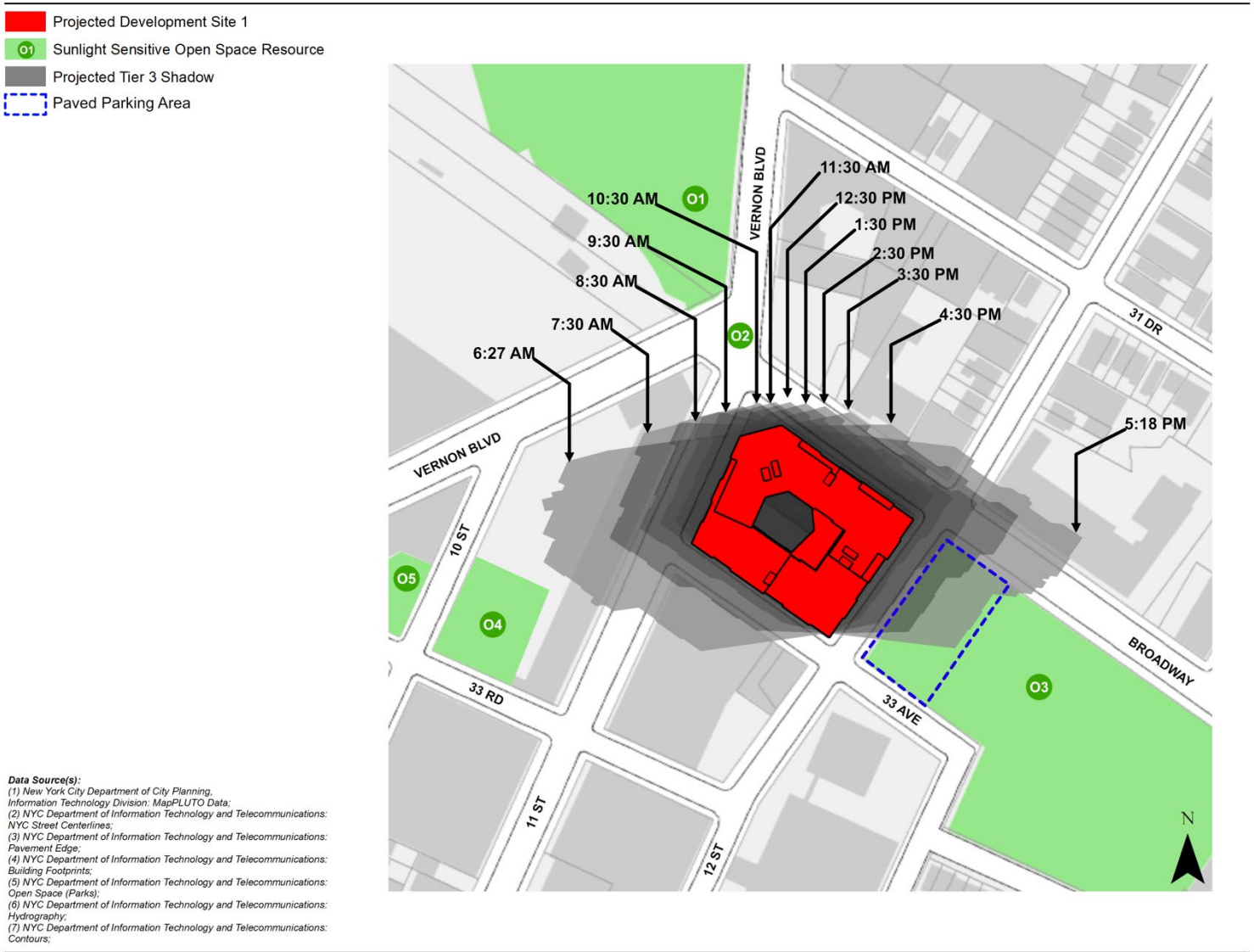
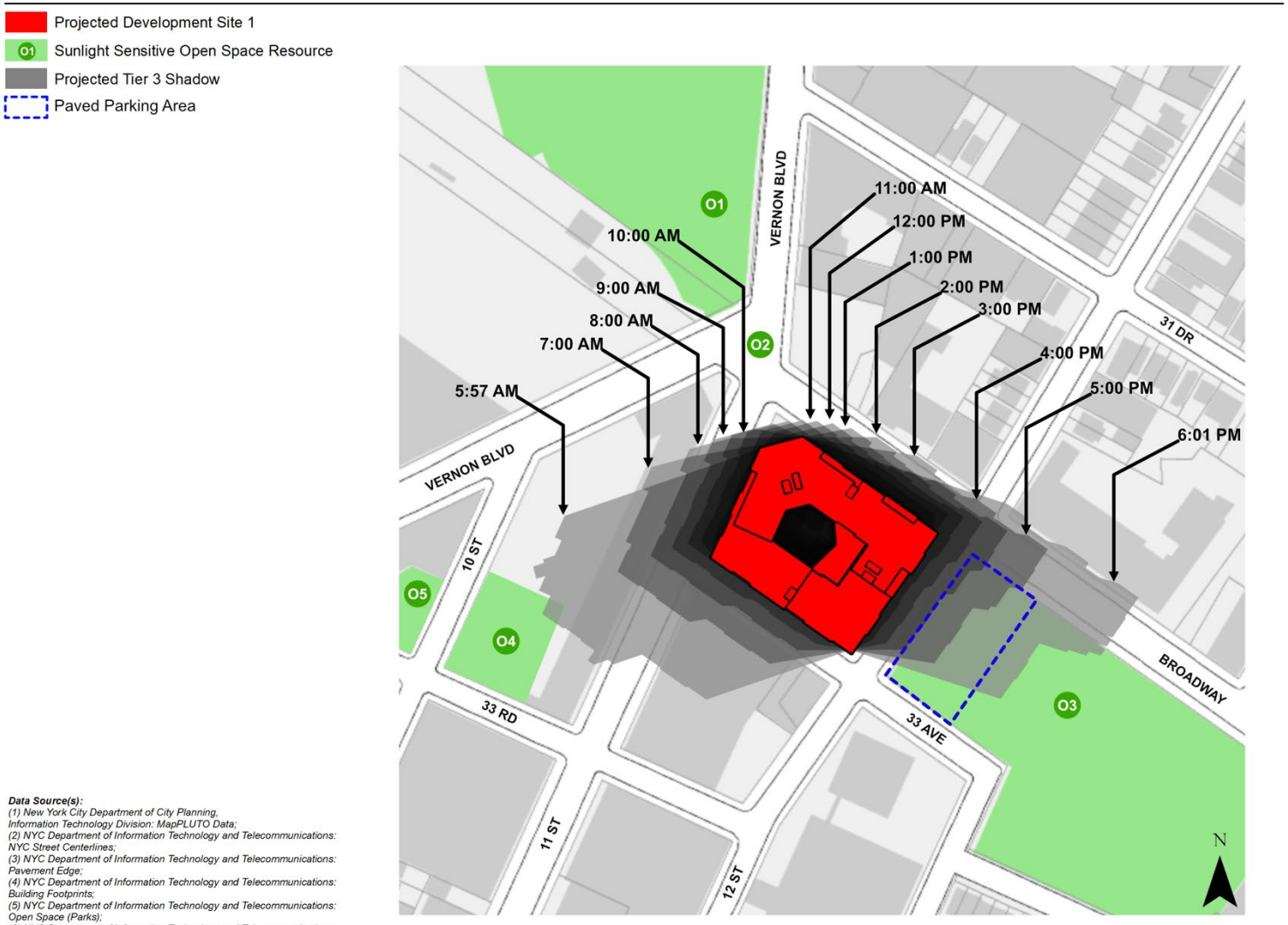


Figure 2.3-2d – Tier 3 Shadow Screening Assessment, June 21 Analysis Day



Data Source(s):
(1) New York City Department of City Planning, Information Technology Division: MapPLUTO Data;
(2) NYC Department of Information Technology and Telecommunications: NYC Street Centerlines;
(3) NYC Department of Information Technology and Telecommunications: Pavement Edge;
(4) NYC Department of Information Technology and Telecommunications: Building Footprints;
(5) NYC Department of Information Technology and Telecommunications: Open Space (Parks);
(6) NYC Department of Information Technology and Telecommunications: Hydrography;
(7) NYC Department of Information Technology and Telecommunications: Contours;

Figure 2.3-3a – Socrates Sculpture Park and Vernon Boulevard Greenstreets Facility Detailed Shadows Analysis, December 21 (1 of 2)

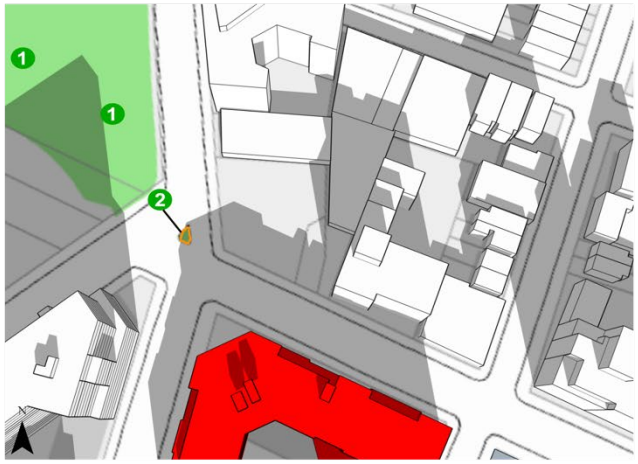


Projected Development Site
Projected Shadows
New Incremental Shadows
1 Sunlight Sensitive Open Space

Figure 2.3-3b – Socrates Sculpture Park and Vernon Boulevard Greenstreets Facility Detailed Shadows Analysis, December 21 (2 of 2)



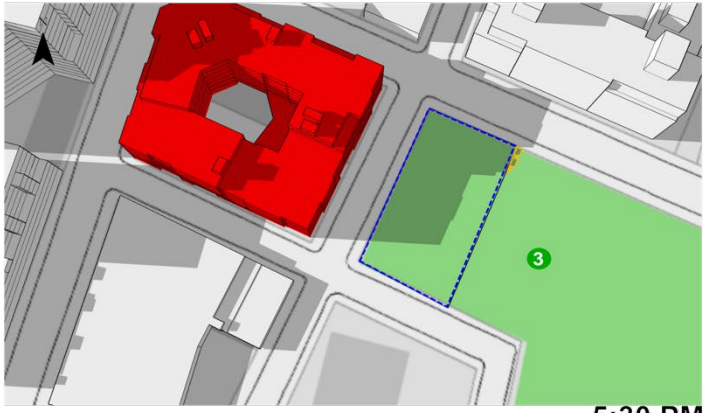
11:00 AM



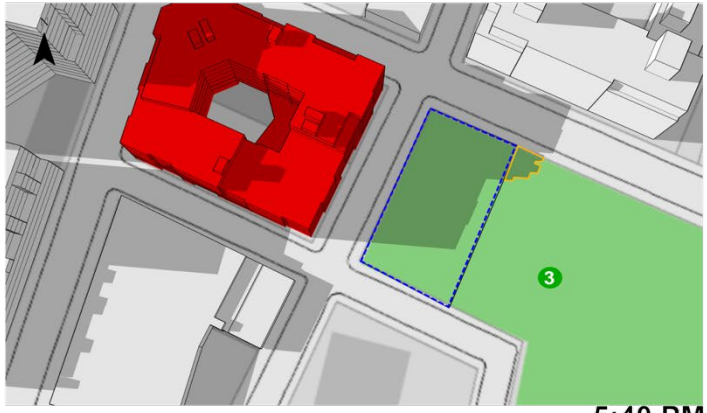
12:00 PM

Projected Development Site
Projected Shadows
New Incremental Shadows
1 Sunlight Sensitive Open Space

Figure 2.3-4a – Long Island City High School Athletic Field Detailed Shadows Analysis, June 21 (1 of 2)



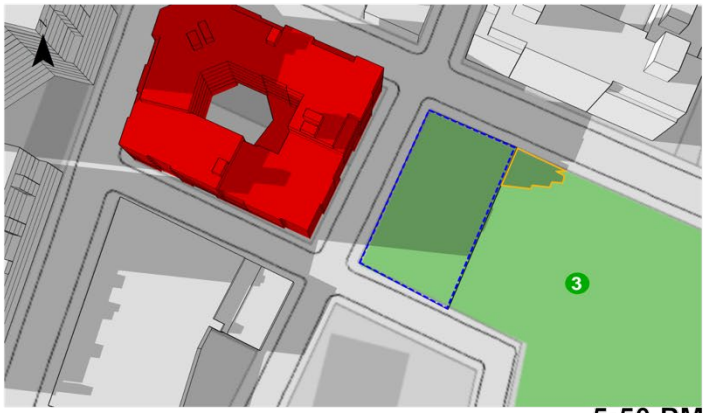
5:30 PM



5:40 PM

Projected Development Site
Projected Shadows
Parking Lot (Not Sunlight Sensitive)
New Incremental Shadows
1 Sunlight Sensitive Open Space

Figure 2.3-4b – Long Island City High School Athletic Field Detailed Shadows Analysis, June 21 (2 of 2)



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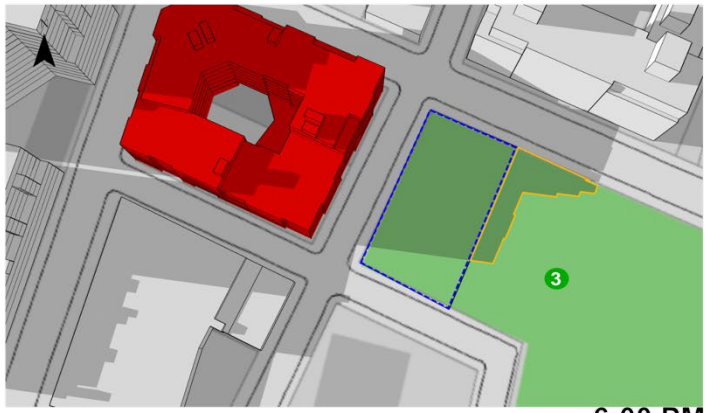


6:00 PM

Projected Development Site
Projected Shadows
Parking Lot (Not Sunlight Sensitive)
New Incremental Shadows
1 Sunlight Sensitive Open Space

2.4 HISTORIC AND CULTURAL RESOURCES

The *2020 CEQR Technical Manual* identifies historic resources as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes designated New York City Landmarks (NYCL); properties calendared for consideration as landmarks by the New York City Landmarks Preservation Commission (NYC LPC); properties listed in the State/National Registers of Historic Places (S/NR) or contained within a district listed in or formally determined eligible for S/NR listing; properties recommended by the New York State Board for listing on the S/NR; National Historic Landmarks (NHL); and properties not identified by one of the programs listed above, but that meet their eligibility requirements. An assessment of historic/archaeological resources is usually needed for projects that are located adjacent to historic or landmark structures or within historic districts, or projects that require in-ground disturbance, unless such disturbance occurs in an area that has already been excavated.

As discussed in the Section 1.0, "Project Description," the Applicant is seeking zoning map amendments and zoning text amendment encompassing the entirety of Queens Block 316, comprised of Lots 1 and 13, bounded by the centerlines of Broadway to the north, 12th Street to the east, 33rd Avenue to the south, and 11th Street to the west (see Section 1.0, "Project Description" for a complete discussion of the project geographies and details).

The Affected Area and the 400-foot study radius project study area are not a Federal, State, or New York City designated Historic District and do not contain any individually designated historic resources. As such, a historic architectural analysis is not warranted for the Proposed Actions. The NYC LPC has determined that the Applicant's Projected Development Site 1 does not have any historic or archaeological significance (see the NYC LPC determination sheet dated August 22, 2019 in the Historic and Archaeological Resources Appendix to this document.)

Based on the above, the Proposed Actions would not result in any significant adverse impacts to historic or archaeological resources in the Affected Area.

2.5 URBAN DESIGN AND VISUAL RESOURCES

An urban design assessment pursuant to the *2020 CEQR Technical Manual* considers whether and how a project may change the experience of a pedestrian in the study area. The assessment focuses on the components of a proposed project that may have the potential to alter the arrangement, appearance, and functionality of the built environment.

2.5-1 - Introduction

An assessment of urban design and visual resources is needed when a project may have effects on any of the elements that contribute to the pedestrian experience of public space. A preliminary assessment is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning, including the following:

1. Projects that permit the modification of yard, height, and setback requirements; and

2. Projects that result in an increase in built floor area beyond what would be allowed 'as-of-right' or in the future without the Proposed Actions.

As described in Section 1.0, "Project Description," the Applicant is requesting the following zoning actions:

1. A Zoning Map Amendment to change the existing R5 zoning district mapped on Block 316, Lots 1 and 13 (the Affected Area) to a Special Mixed-Use (MX) district pairing an R7A residential district with an M1-4 manufacturing district;

2. A Zoning Text Amendment modifying Zoning Resolution (ZR) Appendix F: Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas for Community District 1, Queens to establish the Project Area as a Mandatory Inclusionary Housing (MIH) Area; and

3. A Zoning Text Amendment to ZR Article XII, Chapter 3 [Special Mixed-Use District] to establish a M1-4/R7A (MX) district in Northwest Ravenswood in Queens.

As indicated in **Table 2.1-1**, the permissible residential FAR and building height at Projected Development Site 1 would increase significantly under the Proposed Actions (from 1.25 to up to 4.6 FAR and from a 40-foot building height to an 85-foot building height, respectively). Based on the foregoing, a preliminary urban design and visual resources screening assessment was conducted.

2.5-2 - Methodology

Pursuant to the *2020 CEQR Technical Manual* guidelines, the preliminary urban design and visual resources assessment analyzes a 400-foot radius study area where the Proposed Actions would be most likely to influence the built environment. The following preliminary urban design and visual resources assessment follows these guidelines and provides a characterization of existing conditions, a description of urban design under the future No-Action and With-Action conditions, and an analysis determining the extent to which physical changes resulting from the Proposed Actions would alter the pedestrian experience and visual resources.

Pursuant to the *2020 CEQR Technical Manual*, the appropriate study area for an urban design and visual resources analysis is within a 400-foot radius of the proposed Affected Area. The 400-foot land use study area is generally bounded by 31st Drive to the north, 14th Street to the east, mid-block between 33rd Road and 34th Avenue to the South, and mid-block between Vernon Boulevard and the East River to the west (see **Figure 2.5-1**, appended to the end of the Section, for an illustration of the urban design study area).

2.5-3 – Preliminary Assessment

Existing Conditions

Projected Development Site 1

Projected Development Site 1 includes Queens Block 316, Lots 1 and 13, the existing development on which is described lot-by-lot, below:

- Lot 1: the 26,590 sf lot is vacant and unimproved; and

- Lot 13: the 22,821 sf lot is improved with a 16-foot, one-story building and a 34.5-foot, two-story building, totaling 14,800 gsf of floor area, with a surface parking lot occupied by auto-repair and storage uses. It is noted that the current land use at this lot is considered nonconforming.

Refer to the **EAS Figure 5** and associated photographs for views of urban design conditions at Projected Development Site 1.

400-Foot Urban Design Study Area

Development patterns within the urban design study area are generally defined by development west of Vernon Boulevard, east of Vernon Boulevard and north of Broadway, and east of Vernon Boulevard and south of Broadway. Both Vernon Boulevard and Broadway are two-way streets within the study area, with Vernon Boulevard featuring one lane of traffic running north and south and Broadway featuring two lanes of traffic in each direction (with the exterior lane of each direction on Broadway observed to be primarily used for curbside parking, rendering only the interior lanes usable for vehicle traffic). Otherwise, the street network within the study area generally follows the standard New York City grid pattern in this area, with several north-south and east-west intersecting streets complemented with sidewalks, crosswalks, and other pedestrian infrastructure.

The urban design context west of Vernon Boulevard is defined by waterfront open space and big box commercial development (see **Figure 2.5-1, Photograph Nos. 1 and 2**, appended to the end of this Section). Socrates Sculpture Park is located to the north in this area, characterized as passive, landscaped open space featuring art installations and occasionally hosting food vendors. To the south within the area west of Vernon Boulevard is a Costco Wholesale retailer, featuring 113,146 gsf of commercial retail floor area (0.32 FAR) within three total buildings set mostly towards the interior of the lot, reaching a maximum height of 63 feet. More than half of the site is dedicated to street level parking. A landscaped promenade is found at the western (i.e. waterfront side) boundary of that site.

East of Vernon Boulevard and north of Broadway the built environment is characterized by one-to-three story buildings (with several six-to-eight story buildings) with FARs ranging from 1.0 to 3.61 (see **Figure 2.5-1, Photograph Nos. 3 through 7**). The building stock is generally older (most buildings were built in or

prior to 1963, with several developments constructed in 2011 or later) all of which feature prominent street frontage creating a continuous street wall in this area. There are several large multi-family residential and mixed-use multi-family residential and ground floor commercial buildings within this portion of the study area, including the development at 12-15 Broadway (immediately northeast of the development site), which is an eight-story, 144,303-gsf multi-family residential building constructed in 2011 pursuant to the underlying R7A zoning district. The building has an overall height of approximately 114 feet.

East of Vernon Boulevard and south of Broadway the built environment is characterized by lower lying, one-to-three story commercial and industrial buildings situated on relatively larger lots with FARs ranging from 0.34 to 1.8 (with the six-story Long Island City High School to the east having an FAR of 3.26) (see **Figure 2.5-1, Photograph Nos. 8 through 17**). Building heights generally range from 12 to 27 feet (with the Long Island City High School rising to approximately 47 feet). These buildings generally extend to their respective lot lines to create a continuous street wall within this portion of the study area.

The aforementioned Socrates Sculpture Park represents the only visual resource within the urban design study area, located directly northwest of Projected Development Site 1 across Vernon Boulevard and Broadway. Socrates Sculpture Park is a 6.28-acre open space area owned and operated by the NYC DPR, featuring waterfront passive recreational areas with art installations and occasionally hosting food vendors. This resource is visible from Projected Development Site 1 and vice versa.

No other visual resources, including public parks, publicly accessible waterfront, and/or historic landmarks are found within the study area.

No-Action Condition

Projected Development Site 1

As described in Section 1.0, "Project Description," absent the Proposed Actions (the No-Action Condition) the Applicant would redevelop Projected Development Site 1 with a mixed-use residential and community facility project totaling 101,305 gsf in total floor area, including a four-story residential and community facility building fronting on 11th Street containing 26 dwelling units within 24,168 gsf of floor area plus 9,303 gsf of community facility space as well as 12 three-story, three-family dwellings for a total of 36 dwelling units within 37,951 gsf of floor area plus 12,506 gsf of cellar level storage and mechanical space and 30 at-grade parking spaces. The existing auto repair and storage uses would be removed to accommodate this development. This No-Action Condition project would be developed in accordance with the existing R5 zoning district mapped at Projected Development Site 1.

See **Figures 2.5-2 through 2.5-4** (appended to the end of this Section) for representative street level simulations of the No-Action Condition development in the context of the surrounding built environment.

400-Foot Urban Design Study Area

Two development projects were identified within the urban design study area for the Proposed Project that would be completed by the projected 2024 build year, as describe below:

- *11-28 31st Drive, Queens Block 512, Lot 22 (NYC Department of Buildings [DOB] Permit No. 420605964)*: A proposed vertical enlargement of an existing one-story building to six stories

with 9 total residential dwelling units. It is assumed this project would be completed by the Proposed Project's 2024 build year.

- *Vernon Boulevard Broadway Rezoning, Queens Block 315, Lot 1 (12DCP139Q):* As previously discussed, these approved zoning map and text amendments would facilitate the development of housing and commercial uses on the entire block. Pursuant to the EAS filed on April 19, 2019, this project would include 351 residential dwelling units within 332,208 gsf of residential floor area, 11,236 gsf of commercial floor area, 6,882 gsf of community facility floor area, 164 parking spaces, and 33,606 sf of open space (including 16,547 sf of public open space). The development would be comprised of three buildings at heights of 55 feet, 95 feet, and 145 feet. Pursuant to information provided in the EAS for this project, it would be completed by the Proposed Project's 2024 build year.

Based on the foregoing, development at Projected Development Site 1 and within the 400-foot urban design study area under the No-Action Condition would not be anticipated to create significant adverse impacts to urban design or visual resources.

With-Action Condition

Based on the provisions of the Proposed Actions as described above, a single development scenario is being considered under the With-Action Condition at Projected Development Site 1, described as follows:

The With-Action RWCDS Scenario projects an up to 7-story and cellar, 254,773 gsf mixed-use building with 223,965 gsf of residential floor area for 224 residential units (calculated at 1,000 gsf/unit) and 30,807 gsf of ground floor commercial and light industrial floor area (with 19,709 gsf of commercial space and 11,098 gsf of light industrial space, including an 11,092 gsf supermarket, a 4,753 gsf artist studio, 3,864 gsf of local retail space, a 4,668 gsf wine distributor, and 6,430 gsf of floral production space; Use Groups 6 through 10 and 16). The proposed development also includes 90 accessory parking spaces in the cellar of the building as well as two loading docks with one located on 33rd Avenue and another on 12th Street. The loading docks totaling 2,121 gsf, including 1,037 sf for the supermarket, 542 sf for the wine distributor, and 542 sf for the floral production space, are included in the gsf numbers for these uses noted above. The proposed building would have a height of 75 feet after a 15 feet setback above the base height of 65 feet. The building would have an FAR of 4.58 based on 226,556 zsf on the 49,411 sf lot. For the purposes of a conservative analysis pursuant to CEQR, the EAS assumes that 20% of the residential floor area would be reserved as affordable to households with incomes at or below 80% of the AMI resulting in 45 affordable units.

With the exception of the residential dwelling unit density (and associated parking requirements), the With-Action RWCDS is the same as the Applicant's Proposed Project with respect to area and bulk.

The Proposed Actions would allow for greater residential, commercial, and industrial/manufacturing building bulk and height at Projected Development Site 1 than is currently permitted by the current R5 zoning district. The proposed MX mixed-use district would permit a maximum building height of 95 feet (versus 40 feet under the R5 district), and residential, community facility, commercial/light manufacturing FARs of 4.6, 4.0, and 2.0, respectively (versus 1.25, 2.0, and 0.0, respectively, under the R5 zoning district). Overall, the development potential at Projected Development Site 1 under the Proposed Actions includes up to 98,822 zsf of commercial/light manufacturing, 227,290 zsf of residential, and 197,644 zsf of community facility floor area (compared to 61,763 zsf of residential and 98,822 zsf of community facility

floor area under the R5 zoning district). As such, under the Proposed Actions, permissible development density incremental increases from the No-Action to With-Action condition include 98,822 zsf of commercial/light manufacturing floor area, 165,527 zsf of residential floor area, and 98,822 zsf of community facility floor area.

The increased development potential (including maximum height, area, and bulk) at Projected Development Site 1 under the Proposed Actions would not be a significant deviation from permitted development potential found within the 400-foot urban design study area. As illustrated in **EAS Figure 4**, significant portions of the northern study area are mapped in the R7A zoning district (also featuring either C1-3 or C2-3 commercial overlays), which permits development densities comparable to the proposed zoning, including a maximum 95-foot building height and over a maximum of nine building stories, a maximum 4.6 residential FAR (assuming participation in an inclusionary housing program), and a maximum commercial FAR of 2.0 for ground floor uses (attributed to the aforementioned C1-3 and C2-3 commercial overlays). Additionally, the recently mapped R7X district with C1-3 commercial overlay directly west of the Affected Area permits residential FARs up to 5.0 (up to 6.0 for participation in inclusionary housing programs) and building heights up to 145 feet over a maximum of 14 stories. The C1-3 commercial overlay mapped with the R7X district permits a maximum commercial FAR of 2.0 for ground floor uses.

As such, the development densities permissible at Projected Development Site 1 under the Proposed Actions would be consistent with existing permissible development densities within the study area. As previously noted, the multi-family residential development at 12-15 Broadway (directly northeast of the development site) was constructed in 2011 pursuant to the underlying R7A zoning district, approximately 144,303-gsf in size (3.6 FAR), 214 residential units, and extending to an overall building height of 114 feet over eight stories.

Additionally, the proposed MX(R7A/M1-4) zoning district would be a contextual zoning district, which regulates the height and bulk of new buildings, their setback from the street line, and their width along the street frontage, to produce buildings that are consistent with existing neighborhood character. Under the Proposed Development Scenario, the resultant building would extend to the street line to create a continuous street wall consistent with existing development in the surrounding area.

See **Figures 2.5-2 through 2.5-4** for representative street level simulations of the With-Action Condition Development Scenario in the context of the surrounding built environment.

Overall, the development scenario considered under the Proposed Actions would redevelop underutilized and underbuilt property from a nonconforming automobile repair and storage facility to a new mixed-use residential, commercial, and light industrial building the design of which would be required to be consistent with the existing built context of the surrounding neighborhood. Further, the Proposed Actions would permit the development site to be redeveloped at increased residential densities that would help achieve the current Mayoral administration's affordable housing goals.

Under the With-Action Condition, views of the Socrates Sculpture Park would not change under the Proposed Actions, such that no impact would occur. Views from the Socrates Sculpture Park would be activated by a new, mixed-use residential, commercial, and light manufacturing building.

Based on the foregoing, the Proposed Actions would not result in any significant adverse impacts to urban design or visual resources within the study area.

Figure 2.5-1 – Urban Design Study Area Aerial Imagery and Photograph Location Map



Broadway and 11th Street Rezoning — Figure 2.6-1 - Urban Design Study Area and Photograph Key



Photograph No. 1 – Photograph of Socrates Sculpture Park from the park entrance, facing northwest.



Photograph No. 2 – Photograph of Costco Wholesale commercial retail building, facing southwest from the associated parking lot.



Photograph No. 3 – View of development along Vernon Boulevard, facing north from Broadway.



Photograph No. 4 – View of development along 31st Drive, facing east from Vernon Boulevard.



Photograph No. 5 – View of development along 12th Street, facing south from 31st Drive.



Photograph No. 6 – View of the development along Broadway, facing west from 14th Street.



Photograph No. 7 – View of development along Broadway, facing west from 12th Street



Photograph No. 8 – View of development along 12th Street, facing south from Broadway.



Photograph No. 9 – View of development along 33rd Avenue, facing east from 12th Street.



Photograph No. 10 – View along 13th Street, facing south from 33rd Avenue.



Photograph No. 11 – View of development along 12th Street, facing north from 33rd Road.



Photograph No. 12 – View of development along 33rd Road, facing west from 12th Street.



Photograph No. 13 – View of development along 11th street, facing north from 33rd Road.



Photograph No. 14 – View of development along 33rd Road, facing west from 12th Street.



Photograph No. 15 – View of development along 10th Street, facing north from 33rd Road.



Photograph No. 16 – View of development along Vernon Boulevard, facing south from Broadway.



Photograph No. 17 – View of the Long Island City High School athletic fields, facing south from Broadway.

Figure 2.5-2 – Urban Design Diagram: Broadway Facing West

Existing Condition
Broadway Facing West (Site at Left)



No-Action Condition
Broadway Facing West (Site at Left)



With-Action Condition
Broadway Facing West (Site at Left)



Figure 2.5-3 – Urban Design Diagram: 12th Street Facing North

Existing Condition
12th Street Facing North (Site at Left)



No-Action Condition
12th Street Facing North (Site at Left)



With-Action Condition
12th Street Facing North (Site at Left)



Figure 2.5-4 – Urban Design Diagram: 11th Street Facing South

Existing Condition
11th Street Facing South (Site at Left)



No-Action Condition
11th Street Facing South (Site at Left)



With-Action Condition
11th Street Facing South (Site at Left)



2.6 HAZARDOUS MATERIALS

2.6-1 – Introduction

Environmental Studies Corp. has performed a Phase I Environmental Site Assessment (ESA) of the subject property located at 11-01 33rd Avenue, in the Borough of Queens, New York City, New York. This Phase I ESA was prepared in accordance with the latest ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Designation E 1527-13).

The information provided below represents a summary of the pertinent findings of the aforementioned Phase I ESA. The Phase I ESA in its entirety (including all back up data) can be found in the Hazardous Materials Appendix of this EAS.

2.6-2 – Methodology

The Standard Practice E 1527-13 defines good commercial and customary practice for conducting an ESA of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and petroleum products. As such, the Practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (referred to as landowner liability protections or LLPs); that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice.

The goal of an ESA is to identify, to the extent feasible in accordance with ASTM E 1527-13, *Recognized Environmental Conditions (RECs)* in connection with the property. The term *Recognized Environmental Condition* 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. *De minimis* conditions are not *Recognized Environmental Conditions*. The term *de minimis* condition means a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. The presence or likely presence of hazardous substances or petroleum products at a site includes any form, such as solid or liquid at the surface or subsurface, and vapor in the subsurface.

The Practice also defines two additional *RECs*; *Controlled Recognized Environmental Conditions* and *Historical Recognized Environmental Conditions*. The term *Controlled Recognized Environmental Conditions* means a *Recognized Environmental Condition* resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

The term *Historical Recognized Environmental Condition* means a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria

established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Recognized Environmental Conditions are identified through a review of pertinent records for the project site and nearby properties, a site reconnaissance and interviews. The records review includes a review of *Standard Historical Sources* of information to determine the history of the property. Such sources include historical aerial photographs, fire insurance maps such as those published by the Sanborn Map Company, reverse telephone directories, building department records such as Certificates of Occupancy, building and demolition permits, etc., property tax records, recorded land title records, previous environmental reports and others. The records review also includes regulatory agency lists and databases of documented hazardous waste sites, spill incidents, registered storage tanks and others.

The non-invasive site reconnaissance is performed to identify potential sources of contamination at the project site and in the immediate vicinity of the site. Such potential sources of contamination include operations involving the storage or use of hazardous substances or petroleum products, the presence of petroleum storage tanks, drainage structures, chemical/oil staining, dead or dying vegetation and others.

Interviews are conducted, whenever possible, with site owners, operators, tenants, local government officials, and others with knowledge of the site and information regarding potential RECs at a property. Finally, several ASTM "Non-Scope" items including asbestos-containing materials, lead-based paints, and radon are also discussed.

The following summarizes the findings, conclusions, and recommendations of the Phase I ESA.

2.6-3 – Environmental Site Assessment

Site Description

Projected Development Site 1 consists of two adjoining tax lots with a combined area of approximately 49,411 square feet. There are two buildings on the site, both located on the northern half of the property. The first is a 1-story (on slab), an approximate 9,800 sf, masonry and wood-frame, commercial building located at 11-06 Broadway. This building is occupied by Direct Management, Inc., a general auto repair shop, and by Simply the Best Repairs, a taxi cab fleet maintenance and operation company. The building contains several repair bays, a paint spray booth, office space, and general storage areas. Heat for this building is provided by ceiling-mounted, gas-fired space heaters.

The second building is a 5,000 sf, 1-story and mezzanine, industrial building located at 32-08 12th Street. This structure is constructed on a concrete slab with a steel frame and corrugated steel walls. The eastern two-thirds of this building is occupied by John Clement, a local artist specializing in metal sculptures. The remaining one-third of this building was vacant at the time of the site visit. There are no heating or plumbing systems located in this building.

The rest of the northern half of the property consists of a vacant and undeveloped area on the extreme northwest part of the site, and a parking/storage yard located on the northeast part of the site. The storage yard contains a mobile office trailer, several taxi cabs, and taxi cab body parts such as doors and hoods.

The southern half of the subject property is undeveloped and vacant. With the exception of a concrete slab on the northwest part, the rest of the southern half of the site is unpaved. Evidence of fill materials including soils mixed with pieces of concrete, brick, wood and metal are visible on the surface on the eastern one-third of the southern portion of the site.

Current Operations / Hazardous Substances

The uses at Projected Development Site 1 consist of a taxi maintenance, repair and body work operations, typical auto repairs, and the creation of artistic metal sculptures. Typical automotive chemicals such as motor oil, antifreeze, brake and transmission fluids, etc. were present in both garages in the building at 11-06 Broadway. The taxi garage also contains a paint spray booth, and paints, thinners, and other materials are used in these operations. There were not any underground hydraulic lift units observed in any of the repair bays. Oil staining was observed on the concrete floor inside both garages, particularly around old auto parts that were stored at various locations. According to both of the proprietors of the repair shops, the waste materials generated at the site are stored in waste oil tanks and periodically removed by a third-party waste hauler. No waste pick-up receipts were provided for review at the time of the site visit.

No hazardous substances or petroleum products were observed in the subject building at 32-08 12th Street, or on the southern portion of the site. Several welders and associated compressed gas cylinders were present in the building. According to Mr. Clement, some of his sculptures are painted by hand using brushes and rollers, however, no spray-painting operations are used. At the time of the site visit, chemical/oil staining was present on the soil and sidewalk just outside the southeast corner of the building at 32-08 12th Street. This staining appeared to be originating from the southern portion of the site. According to Mr. Clement, there has been staining present at this location since he has been in the building, and it appears to be originating from the project site.

Site History

Research into the history of Projected Development Site 1 shows that the property was undeveloped, vacant land from at least 1898 to 1924. Prior to 1900, the site was a stream surrounded by marshland, and the development site and surrounding area was landfilled sometime after 1900. From at least 1936 to 1967, the property was occupied by the American Petrometal Corporation, a wholesale iron and steel company. Research indicates that this is the first developed use of the project site. This business included a machine shop in the subject building at 11-06 Broadway, and a large warehouse and metal cutting area in the building on the south half of the project site.

From 1967 to the 1990s, Lot 1 of the site was occupied by Nelson Galvanizing, an industrial hot-dipped galvanizing operation. The zinc galvanizing process included cleaning of metal parts in baths of acid or caustic solutions, pre-treating in zinc ammonium chloride, and immersing them in molten zinc. The facility used five 3,000-gallon processing tanks, containing molten zinc, sulfuric or hydrofluoric acid, sodium hydroxide, and zinc ammonium chloride. These operations took place in a portion of the building with a dirt floor.

Due to the poor housekeeping and chemical handling and storage practices at Nelson Galvanizing, there were several environmental cleanup and enforcement actions taken against this business. On August 19th , 1988, the Commissioner of the New York City Department of Environmental Protection (NYCDEP) determined that the site presented an immediate and substantial danger to the public health, welfare and

environment. The Commissioner issued an Order for the defendants to abate the hazardous conditions on their property. The defendants failed to fully comply with the terms of the Order and failed to remove approximately 291 drums of chemical wastes (149 known to be hazardous). The drums of waste were improperly stored, unstable and posed a hazard to public health, welfare and the environment. In 1988 when the NYCDEP ordered Nelson to stop discharging materials to the city sewer system, it is believed Nelson began disposing chemicals into an excavated dirt trench and allowed chemicals to drain off into the outside soil. The NYCDEP issued a second environmental cleanup Order to Nelson Galvanizing, Inc. in 1998.

Regulatory agency inspections in 1990 found Nelson had over 100 drums of spent acids and caustics inside the building. Standing liquids on the floor had pH values less than 2. The inspections also found five large dipping tanks, three tanks holding approximately 4,000 gallons of sulfuric acid, one 2,500-gallon tank of sodium hydroxide, and one 1,500-gallon tank of zinc ammonium chloride. In 1999, a United States Environmental Protection Agency (USEPA) removal assessment indicated that there were still over 100 55-gallon drums of spent acids and caustics along with 30 other containers which were stored at the site without regard for compatibility. Some drums were found to have acids with a pH of less than 2. There were also three open-top tanks or vats containing sulfuric acid sludge, sodium hydroxide and zinc ammonium chloride. In 2000, 229 drums of waste and nine cubic yards of bulk wastes were shipped off site for disposal by the USEPA. In addition, 44,000 pounds of zinc dross were removed and transported off site for recycling.

A Phase I ESA of Projected Development Site 1 performed in 2005 found numerous drums of unknown wastes, and chemical staining at several locations including the dirt floor, were still present in the building on the south side of the project site. The buildings formerly occupied by Nelson Galvanizing were demolished in 2009, and this portion of the project site has been vacant since that time.

In 2013, a sidewalk investigation report was prepared to assist with the establishment of remedial action objectives and selection of a remedy for potential future development of the former Nelson Galvanizing site. The report concluded that based on the evaluation of the data and information from the investigation, there is some contaminated soil, groundwater and soil vapor present in the sidewalks surrounding the subject site, particularly the southern and eastern portions of the property. Elevated soil vapor concentrations were noted in all samples, with the highest total volatile organic compound (VOC) concentrations at the sampling locations closest to the adjacent auto repair establishments on Lot 13. The observed contamination may be attributed to on-site or off-site sources. The report recommended that prior to any soil disturbance or change in land use, including re-development of the site, on-site investigation activities and remedial activities be performed.

Research into the history of Lot 13 of the development site shows that the uses of this portion of the site have included a machine shop, general automotive repairs, taxi fleet repairs including auto body repair and painting, metal and steel fabrication, and iron works. These operations are types that typically involve the storage and use of hazardous substances and petroleum products. Any past spills, leaks or discharges of such materials would represent a potential source of contamination to the project site.

In 2009, a subsurface investigation was performed on this portion of the site to characterize the soil and groundwater beneath Lot 13, and to identify any potential underground storage tanks (USTs) on the lot. The investigation did not include Lot 1 of Projected Development Site 1. The geophysical survey found no conclusive evidence of the presence of USTs, however, several subsurface anomalies were found in the area. The report concludes that although elevated concentrations of semi-volatile organic compounds

(SVOCs) and metals were detected in the soil samples collected, there does not appear to be a specific onsite contaminant source, and the concentrations are likely a result of urban fill materials commonly found in metropolitan areas. Several VOCs, SVOCs and metals were detected at concentrations exceeding NYSDEC Standards in the groundwater samples collected, however, the report concluded that the groundwater impacts appear to be the result of hydraulically upgradient offsite sources, and naturally occurring metals found in the area.

The subsurface investigation of Lot 13 was performed ten years ago. Since that time there have been on-going operations involving the storage and use of hazardous substances and petroleum products. Staining observed at several locations on this lot during the site visit, and soil vapor samples collected during the 2013 sidewalk investigation found the highest concentrations of VOCs in samples collected from near Lot 13. Therefore, there is the potential for contamination on Lot 13.

Environmental Liens and Activity and Use Limitations

According to information from the New York City Department of Finance, the title report for Lot 1, and the EDR Environmental Liens and AULs report, there is an Environmental Lien on Lot 1 of the development site. It is likely that this Lien is related to the emergency cleanup and removal actions performed at Nelson Galvanizing by the USEPA. It could not be determined from the information reviewed for this report if the Lien identified at the site has been satisfied/removed.

Drainage Structures

No drainage structures were observed in the subject building at 32-08 12th Street. Typical lavatory drainage structures such as sinks and toilets were present in the building at 11-06 Broadway. In addition, two floor drains were present in the auto repair garage in this building. The drainage destination of these structures is not known; however, it is likely that they discharge to the municipal sewer system. In addition to the drainage structures, an old, 6-inch diameter, vertical steel pipe was observed protruding from the ground on the northeast portion of the southern half of the Projected Development Site 1. This pipe appeared to extend at least ten feet below grade and liquid was visible at the bottom of the pipe. The former use or purpose of this structure is not known.

Petroleum Storage Tanks

There were two aboveground storage tanks (ASTs) observed at the development site. The first is located inside the auto repair garage at 11-06 Broadway. This tank is a 360-gallon waste oil tank located in a steel, secondary containment structure. No significant staining was observed around this tank. The second tank is a 275-gallon waste oil tank located outside the east wall of the building at 11-06 Broadway. This tank is located on an elevated concrete platform and oil staining was observed on the platform below the tank.

There were not any indications of the presence of underground storage tanks (USTs), such as tank fill ports, vent lines, associated mechanical equipment, etc., observed at the subject property during the site visit.

There were formerly two 3,000-gallon fuel oil USTs registered to the site with the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage program. It is not known if these tanks were removed from the project site. A UST was reported removed from the south portion of the development site in 2018. The geophysical survey performed on Lot 13 in 2009 found no conclusive

evidence of the presence of USTs; however, several subsurface anomalies were found in the area. Given that the development site has been developed with industrial and auto-related uses since at least the 1930s, it is considered possible that there are underground petroleum storage tanks remaining at the project site.

Asbestos, Lead-Based Paints, and PCBs

Given the age of the subject building at 11-06 Broadway (constructed prior to 1936), it is possible that it contains asbestos building materials and lead-based paints. No suspected asbestos-containing materials or lead based paints were observed in the subject building at 32-08 12th Street. No electrical transformers or other equipment suspected of containing PCBs were observed at the site. Sanborn historical maps show a transformer room on the northwest corner of the building that formerly occupied the southern half of the development site. In addition, an old, oil-filled transformer that was observed to be leaking was present in this part of the building during the 2005 Phase I ESA. Any past spills, leaks or discharges of transformer dielectric fluid would be a potential source of contamination to the development site.

Surrounding Land Uses

Projected Development Site 1 is adjoined to the north by Broadway, beyond which is a lot used for truck parking, an auto repair garage, a residential apartment building, and a 1-story industrial building occupied by H&L Iron Works. Adjacent and to the south of the site is 33rd Avenue, beyond which is an auto repair garage and the Catholic Medical Mission Board. Adjacent and to the east is 12th Street, beyond which is a parking lot. The property is adjoined to the west by 11th Street, beyond which is a 1-story building occupied by several commercial tenants. Land uses in the immediate vicinity of the property (i.e., within approximately 500 feet of the site) are predominantly comprised of a mix of commercial and industrial businesses, with a public school, a public park and a few residential uses.

A review of Sanborn maps shows that historical adjoining land uses have included residential dwellings, commercial businesses, auto repair garages, gasoline filling stations, and a truck body and equipment manufacturing company. Historical land uses in the immediate vicinity of the project site have included predominantly commercial and industrial uses, such as iron works and structural steel companies, warehouses, auto repair garages, a commercial dry cleaner, and others. Given the off-site, potential sources of contamination identified in the immediate vicinity of the project site, it is possible that the groundwater below has been impacted.

Regulatory Agency Records Review

The development site is identified in the USEPA's CERCLIS, RCRA Hazardous Waste Generator, Liens 2, and Brownfield databases, and in the NYSDEC Petroleum Bulk Storage and Chemical Bulk Storage databases. The property does not appear in the USEPA's Superfund or ERNS databases, the RCRA Hazardous Waste Treatment/Storage/Disposal Facilities list, or the NYSDEC's Spill Logs database, Solid Waste Facilities database, Brownfield site database, Voluntary Cleanup Program list or Registry of Inactive Hazardous Waste Disposal Sites.

2.6-4 – Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of 11-01 33rd Avenue, Queens, N.Y., the property. Any exceptions

to or deletions from this standard are described in Section 2.6-1 of this report. This assessment has revealed no evidence of Historical Recognized Environmental Conditions or Controlled Recognized Environmental Conditions in connection with the property. This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the property, with the following exceptions:

- The likely presence of contamination at Projected Development Site 1, including the potential for the encroachment of vapors to the subject buildings and any future buildings, from past on-site industrial and auto-related operations. In addition, given that hazardous wastes were found at the former Nelson Galvanizing facility on Lot 1, it is possible that some of the contamination at the site would be classified as hazardous waste, which would result in increased handling and disposal costs and requirements;

- The potential for contamination at the development site from former underground storage tanks at the site;

- The potential for contamination from former leaking transformers at the site;

- The possible presence of one or more underground petroleum storage tanks at the site which have not been properly closed or removed in accordance with NYSDEC and New York City Fire Department requirements;

- The possible presence of an Environmental Lien on Lot 1 of the site that has not been satisfied/removed; and

- The potential for groundwater contamination below the site from off-site sources of contamination in the immediate vicinity of the property.

As existing development conditions at Projected Development Site 1, including an occupied one-to-two-story auto repair building and accessory surface parking and storage uses, prevents the necessary full spectrum of soil, soil vapor and groundwater testing required under DEP testing guidelines, an "E" designation for hazardous materials will be placed on the zoning map pursuant to Section 11-15 of the New York City Zoning Resolution for the Projected Development Site 1 in lieu of a Phase II workplan.

The "E" designation will ensure that testing and mitigation will be provided as necessary before any future development and/or soil disturbance on the property. The Applicant will be directed to coordinate further hazardous materials assessments through the Mayor's Office of Environmental Remediation.

Therefore, in order to avoid any potential impacts associated with hazardous materials, an (E) designation (E-613) will be assigned for hazardous materials on the following property:

Queens Block 316, Lots 1 and 13

The text for the (E) designations related to hazardous materials is as follows:

Task 1-Sampling Protocol
The applicant submits to OER, for review and approval, a Phase I of the site along with a soil, groundwater, and soil vapor testing protocol, including a description of methods and a site map

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

Task 2-Remediation Determination and Protocol

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

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

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

With this (E) designation in place, no significant adverse impacts related to hazardous materials are expected, and no further analysis is warranted. Therefore, there is no potential for the Proposed Actions to result in significant adverse impacts related to hazardous materials on the Applicant's Development Site.

2.7 TRANSPORTATION

2.7-1 – Introduction

Pursuant to the guidance of the *2020 CEQR Technical Manual*, this chapter examines the potential effects of the Proposed Actions on the Affected Area's transportation systems. Specifically, it compares the With-Action Condition against the No-Action Condition. Based on the proposed mixed-use development increment trip generation and trip assignment screening (Level 1 and Level 2) analyses results, it was determined that the Proposed Actions would not result in significant adverse impacts as summarized below.

2.7-2 – Affected Area

Projected Development Site 1 comprises the entirety of Queens Block 316, Lots 1 and 13, bounded by Broadway, a two-way eastbound/westbound roadway on the north; 12th Street, a one-way northbound roadway on the east; 33rd Avenue, a two-way eastbound/westbound roadway on the south; and 11th Street, a two-way northbound/southbound roadway on the west, as is shown in **Figure 2.7-1** (appended to the end of this Section)**.**

2.7-3 – Project Build Year

It is assumed that the Proposed Actions and associated development approval requirements would be granted by and construction activities (including demolition) would commence by early 2022. It would take approximately 18 months to construct the Proposed Project on the Applicant's Projected Development Site 1, resulting in a projected build year of 2024.

2.7-4 – No-Action Scenario

Absent of the Proposed Actions, Projected Development Site 1 would be redeveloped with a mixed-use development, containing 62 dwelling units (62,119 gsf) and 9,303 gsf of community facility (professional medical office). The project would also include an on-site accessory parking with 72 parking spaces. See **Table 1 of the Transportation Appendix** for a summary of proposed uses associated with the No-Action Condition Development Scenario.

2.7-5 – With-Action Scenario

The Proposed Actions include a total of 224 dwelling units (223,965 gsf), 3,864 gsf of local retail space, a 4,753 gsf artist's studio, 10,055 gsf of grocery store/supermarket space, and 10,014 gsf of light manufacturing space, as summarized in **Table 1 of the Transportation Appendix**. The Proposed Actions would also provide 90 accessory parking spaces (versus the 72 no-action residential accessory parking spaces). The proposed on-site accessory parking would include one egress and ingress point via 33rd Avenue, as shown in project site plan, as well as two loading docks (located on 33rd Avenue and 12th Street) (see **Figure 2.7-2**, appended to the end of this section). The loading docks, total 2,121 gsf including 1,037 sf for the supermarket, 542 sf for the wine distributor, and 542 sf for the floral production space, are not included in the gsf numbers for these uses noted above.

The increment between the No-Action and With-Action Development Scenarios are summarized in **Table 1 of the Transportation Appendix** and detailed below**.**

The transportation screenings (Level 1 and Level 2) below have been prepared based on the difference between the No-Action and With-Action Conditions, which would result in the development under the With-Action Scenario of an increase of 162 dwelling units (161,846 gsf) of residential development, including 45 affordable dwelling units, 18,672 gsf of commercial space (including local retail, grocery store/supermarket space and an artist's studio), and 10,014 gsf of light manufacturing space (including floral production and a wine distributor), 18 additional accessory parking spaces, and the decrease of 9,303 gsf of professional medical space, as summarized in **Table 1 of the Transportation Appendix**.

2.7-6 – Principal Conclusions

The following detailed trip generation and trip assignment screening (Level 1 and Level 2) analyses were conducted for the Affected Area, as is summarized and shown in **Tables 2 through 4 of the Transportation Appendix**.

Traffic and Parking

Based on the results of the trip generation screening analysis (Level 1), the Proposed Actions would generate fewer than the *2020 CEQR Technical Manual* 50-vehicle trip-ends threshold, as summarized in **Table 4 of the Transportation Appendix** during any peak hour. Therefore, in accordance with the *2020 CEQR Technical Manual* vehicle trip-ends threshold, the vehicular trip-ends generated by the Proposed Actions would not result in any conditions warranted for a detailed assessment of traffic and parking impacts.

Transit

Based on the results of the trip generation screening analysis (Level 1), the Proposed Actions would generate fewer than the *2020 CEQR Technical Manual* 200-subway trip-ends and 50-bus trip-ends (per bus route and per direction) threshold, as summarized in **Table 3 of the Transportation Appendix** during any peak hour. Therefore, in accordance with the *2020 CEQR Technical Manual* transit trip-ends threshold, the transit trip-ends generated by the Proposed Actions would not result in any conditions warranted for a detailed assessment of transit (subway and bus) impacts.

Pedestrians

Based on the results of the trip generation screening analysis (Level 1), the Proposed Actions would generate more than the *2020 CEQR Technical Manual* 200-pedestrian trip-ends threshold, during the Weekday Midday, PM and Saturday Midday peak hours, as summarized in **Table 3 of the Transportation Appendix**. Therefore, in accordance with the *2020 CEQR Technical Manual* pedestrian threshold, a Level 2 trip assignment screening analysis would be warranted for a detailed assessment of pedestrian impacts.

Therefore, in accordance with the *2020 CEQR Technical Manual*, the project generated transportation trips would not result in any conditions warranted for a detailed assessment of transportation impacts, except for pedestrians, as detailed below.

2.7-7 – Preliminary Analysis Methodology and Screening Assessment

The *2020 CEQR Technical Manual* recommends a two-tier screening procedure for the preparation of a "preliminary analysis" to determine if quantified analyses of transportation conditions are warranted. As

discussed below, the preliminary analysis begins with a trip generation analysis (Level 1) to estimate the volume of person and vehicle trips attributable to the Proposed Actions. If the Proposed Actions are expected to result in fewer than 50 peak hour vehicle trip ends and fewer than 200 peak hour transit or pedestrian trip ends, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (Level 2) are performed to estimate the incremental trips at specific transportation elements and to identify potential locations for further analyses. If the trip assignments show that the Proposed Actions would result in 50 or more peak hour vehicle trip ends at an intersection, 200 or more peak hour subway trip ends at a station, 50 or more peak hour bus trip ends in one direction along a bus route, or 200 or more peak hour pedestrian trip ends traversing a pedestrian element, then further quantified analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, and parking.

2.7-8 – Level 1 Screening Assessment

A Level 1 trip generation screening assessment was conducted to estimate the numbers of person and vehicle trips by mode expected to be generated by the Proposed Actions, during the Weekday AM, midday, PM, and Saturday peak hours (**see Tables 2 through 4 in the Transportation Appendix**). These estimates were then compared to the *2020 CEQR Technical Manual* thresholds to determine if a Level 2 screening and/or quantified operational analyses would be warranted.

Traffic and Parking

The Proposed Actions would generate a total of -7 (-12 inbound and +5 outbound), 14 (8 inbound and 6 outbound), 17 (14 inbound and 3 outbound) and 13 (8 inbound and 5 outbound) net vehicle trip ends during the Weekday AM, Midday, PM, and Saturday Midday peak hours, respectively. Based on the results of the trips generated by the Proposed Actions (as shown in **Table 4 of the Transportation Appendix**), traffic would screen for all peak hours and a Level 2 assessment would not be required. As a result of screening traffic and per the CEQR guidelines, no parking assessment would be required.

Transit-Subway

The Proposed Actions would generate a total of 89 and 104 net subway trip ends during the Weekday AM and PM peak hours, respectively. Based on the results of the trips generated by the Proposed Actions (as shown in **Table 3 of the Transportation Appendix**), subway trips would screen for the AM and PM peak hours and a Level 2 assessment would not be required.

Transit-Bus

The Proposed Actions would generate a total of 2 and 8 net bus trip ends during the Weekday AM and PM peak hours, respectively. Based on the results of the trips generated by the Proposed Actions (as shown in **Table 3 of the Transportation Appendix**), bus trips would screen for the AM and PM peak hours and a Level 2 assessment would not be required.

Pedestrians

The Proposed Actions would generate a total of 167, 517, 362, and 386 pedestrian (subway, bus, walk, and other) trip ends during the Weekday AM, Midday, PM, and Saturday Midday peak hours, respectively. Based on the results of the pedestrian trips generated by the Proposed Actions (as shown in **Table 3 of**

the Transportation Appendix), and per the *2020 CEQR Technical Manual* pedestrian threshold, a level 2 pedestrian assessment would be warranted for Weekday Midday, PM, and Saturday Midday peak hours.

2.7-9 – Transportation Planning Assumptions

Trip generation factors for the Proposed Actions were determined based on information from the *2020 CEQR Technical Manual*, U.S. Census Data, trip generation and modal split data provided by NYCDOT, and other approved EASs and EISs. The travel demand assumptions and trip generation sources are summarized in **Table 2 of the Transportation Appendix**.

Residential

Table 16-2 of the *2020 CEQR Technical Manual* was utilized for trip generation rates, including truck trips and peak hour temporal distribution. The 2014-2018 American Community Survey (ACS) Journey-to-Work (JTW) data for Census Tract Nos. 37, 39, 43, 45, 47, 53, 75, 77, 81 and 85 in Queens, New York was used for modal split information and auto occupancy rate, as is summarized in **Exhibits 1 and 2 and Table 2 of the Transportation Appendix**.

The estimated modal split data for residential use found that approximately 14.7 percent would travel by car, 0.5 percent would travel by taxi, 3.4 percent would travel by bus, 65.6 percent would travel by subway, and 15.7 percent would travel by foot and other mode of travel, such as bicycle, as shown in **Exhibits 1 and 2 and Table 2 of the Transportation Appendix**.

Local Retail Space

Table 16-2 of the *2020 CEQR Technical Manual* was utilized for trip generation rates, including peak hour temporal distribution and truck trip rates. Modal split information and vehicle occupancy rates are based on the NYCDOT survey result for a similar local retail space (Queens, Non-Transit Zone), as is summarized in **Table 2 of the Transportation Appendix**.

The estimated modal split results for local commercial retail use found that approximately 11 percent would travel by car, zero (0) percent would travel by taxi, 2 percent would travel by bus, 3 percent would travel by subway, and 84 percent would travel by foot and other mode of travel, such as bicycle, as shown in **Table 2 of the Transportation Appendix**.

Professional Medical Office Space

Trip generation rates, including peak hour temporal distribution, and modal split information are based on the NYCDOT survey result for a similar professional medical office space (Queens, Non-Transit Zone), as is summarized in **Table 2 of the Transportation Appendix**. Truck trip rates are based on Table 13-8 of the approved *East New York Rezoning FEIS.*

The estimated modal split results for professional medical office use found that approximately 62 percent would travel by car, 7 percent would travel by taxi, 6 percent would travel by bus, 1 percent would travel by subway, and 24 percent would travel by foot and other mode of travel, such as bicycle, as shown in **Table 2 of the Transportation Appendix**.

Light Manufacturing Space

Trip generation rates, peak hour temporal distribution, and truck trip rates are based on rates from Table 3.15-8 of the approved *Lower Concourse Rezoning and Related Actions FEIS*. The 2012-2016 American Community Survey (ACS) Reverse-Journey-to-Work (RJTW) data for Census Tract Nos. 37, 39, 43, 45, 47, 53, 75, 77, 81, and 85 in Queens, New York was used for modal split information and auto occupancy rate. The above information is summarized in **Table 2 of the Transportation Appendix**.

The estimated modal split results for light manufacturing use found that approximately 49.3 percent would travel by car, 0.2 percent would travel by taxi, 8.4 percent would travel by bus, 25.5 percent would travel by subway, and 16.6 percent would travel by foot and other mode of travel, such as bicycle, as shown in **Exhibits 3 and 4 and Table 2 in the Transportation Appendix**.

All of the above information is summarized in **Table 2 of the Transportation Appendix**.

2.7-10 – Parking

The Proposed Actions would include a new on-site accessory parking garage with 90 spaces. The proposed parking would include one egress and ingress point via 33rd Avenue, as shown in **Figure 2.7-2**.

2.7-11 – Person and Vehicular Trips

Person Trips

The Proposed Actions would generate a total of 145, 528, 375, and 401 net person trip ends during the AM, Midday, PM, and Saturday Midday peak hour time periods, respectively, as summarized in **Table 3 of the Transportation Appendix**.

Vehicle Trips

The Proposed Actions would generate a total of -7 (-12 inbound and +5 outbound), 14 (8 inbound and 6 outbound), 17 (14 inbound and 3 outbound), and 13 (8 inbound and 5 outbound) net vehicle trip ends during the Weekday AM, Midday, PM, and Saturday Midday peak hour time periods, respectively, as summarized in **Table 4 of the Transportation Appendix**.

Based on the results of the trip generation screening analysis (Level 1), the Proposed Actions would generate fewer than the *2020 CEQR Technical Manual* 50-vehicle trip-ends threshold, as summarized in **Table 4 of the Transportation Appendix** during any peak hour. Therefore, in accordance with the *2020 CEQR Technical Manual* vehicle trip-ends threshold, the vehicular trip-ends generated by the Proposed Actions would not result in any conditions needed for a detailed assessment of traffic and parking impacts.

2.7-12 – Transit

Bus

The Proposed Actions would generate a total of 2 and 8 net bus trip ends during the AM and PM peak hour time periods, respectively, as summarized in **Table 3 of the Transportation Appendix**. Currently, there are three bus lines, bus lines Q69, Q 103, and Q 104 in the study area. Bus line Q69 is operating

along 21st Street. Bus line Q103 is operating along Vernon Boulevard and bus line Q104 is operating along Broadway and both are operating along Vernon Boulevard south of Broadway in the study area. The Proposed Actions would generate less than 50 bus trip ends during the AM and PM peak hour time periods, and in accordance with the *2020 CEQR Technical Manual* criteria, would not result in any conditions that would typically trigger the need for a detailed assessment of bus impacts.

Subway

The Proposed Actions would generate a total of 89 and 104 net subway trip ends during the AM and PM peak hour time periods, respectively, as summarized in **Table 3 of the Transportation Appendix**. Currently, one subway station for the N and W trains serves the Affected Area. The Broadway subway station for the N and W trains is within a one-mile radius of the Affected Area (Non-Transit Zone). The Proposed Actions would generate less than 200 subway trip ends during the AM and PM peak hour time periods, and in accordance with the *2020 CEQR Technical Manual* criteria, would not result in any conditions that would typically trigger the need for a detailed assessment of subway impacts.

2.7-13 - Pedestrians

The Proposed Actions would generate a total of 167, 517, 362, and 386 net pedestrian (bus, subway, walk, and other) trip ends during the AM, Midday, PM, and Saturday Midday peak hour time periods, respectively, as summarized in **Table 3 of the Transportation Appendix**.

Based on the results of the pedestrian trips generated by the Proposed Actions (as shown in **Table 3 of the Transportation Appendix**), and per the *2020 CEQR Technical Manual* pedestrian threshold, a level 2 pedestrian assessment would be warranted for Weekday Midday, PM, and Saturday Midday peal hours.

A Level 2 trip assignment analysis has been prepared for the Weekday Midday, PM, and Saturday Midday peak hours, as shown in **Figures 2.7-3, 2.7-4 and 2.7-5 of the transportation back up submitted with the EAS.**

Based on the results of the trip assignment screening analysis (Level 2), the pedestrian trips would exceed the *2020 CEQR Technical Manual* 200-pedestrian trip-ends threshold at 2 corners and 1 sidewalk during the Weekday Midday peak hour, as shown in **Figure 2.7-3 of the transportation back up submitted with the EAS** and listed below:

Corner

- Broadway and 11th Street Intersection: southeast corner**,** and
- Broadway and 12th Street Intersection: southwest corner.

Sidewalk

- Broadway Between 11th and 12th Streets: south sidewalk.

Pedestrian Analysis

Analysis Methodology Peak 15-minute pedestrian flow conditions during the weekday midday peak hour are analyzed using the Highway Capacity Manual 2010 methodology and procedures outlined in the *CEQR Technical Manual.* Using this methodology, the congestion level of pedestrian facilities is

determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity, and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed, which takes into consideration the traffic light cycle at intersections. LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. The LOS criteria are shown below for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual methodology*. The analysis of sidewalk conditions includes a "platoon" factor in the calculation of pedestrian flow to estimate the dynamics of walking more accurately. "Platooning" is the tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in an LOS one level poorer than that determined for average flow rates.

Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks			Corners Reservoirs and Crosswalks
		Non-Platoon Flow	Platoon Flow	
A	(Unrestricted)	> 60	> 530	> 60
B	(Slightly Restricted)	> 40 to 60	> 90 to 530	> 40 to 60
C	(Restricted but fluid)	> 24 to 40	> 40 to 90	> 24 to 40
D	(Restricted, necessary to continuously alter walking stride and direction)	> 15 to 24	> 23 to 40	> 15 to 24
E	(Severely restricted)	> 8 to 15	> 11 to 23	> 8 to 15
F	(Forward progress only by shuffling; no reverse movement possible)	<8	< 11	<8

Notes:
SEP: square feet per pedestrian.
Source: *CEQR Technical Manual*

2020 EXISTING CONDITIONS

Pedestrian counts were conducted on Tuesday, November 17th, 2020 at key locations in the project area during the (12pm-2pm) weekday midday period. The weekday midday peak hour of 12:30 PM to 1:30 PM was identified as the highest peak hour and therefore, selected for analysis (see **Transportation Appendix**).

Inventories of roadway geometry, including effective width for sidewalks (**Figure 2.7-6 of the transportation back up submitted with the EAS**), traffic controls, bus stops, and subway location were recorded to provide appropriate inputs for the operational analyses. Official signal timings were measured in the field and obtained from NYCDOT for use in the analysis of the study area signalized intersections**.**

Figure 2.7-7 in Transportation Appendix shows the 2020 existing traffic volumes for the Weekday Midday peak hour.

LEVELS OF SERVICE (LOS)

Weekday Midday Peak Hour

A summary of the 2020 existing conditions pedestrian analysis results with details on average pedestrian space (sf/ped), level-of-service (LOS), and LOS adjusted for platoon are presented in **Tables 5 and 6**. Overall, the LOS analysis indicates that all three pedestrian elements operate at LOS A for the Weekday Midday analysis peak hour.

2024 NO-BUILD CONDITIONS

The 2024 no-build pedestrian volumes are constructed by increasing the existing pedestrian volumes by 2.0 percent (1/2 percent per year per *CEQR TM* guidelines, Table 16-4), and adding the project generated pedestrian trips **(Figure 2.7-8 of the transportation back up submitted with the EAS)** of a mixed-use development planned in the study area (32-01 Vernon Blvd. mixed -use development).

Figure 2.7-9 in Transportation Appendix shows the 2024 no-build pedestrian volumes for the Weekday Midday peak hour.

LEVELS OF SERVICE (LOS)

Weekday Midday Peak Hour

A summary of the 2024 no-build conditions pedestrian analysis results with details on average pedestrian space (sf/ped), level-of-service (LOS), and LOS adjusted for platoon are presented in **Tables 7 and 8**. Overall, the LOS analysis indicates that all the study area's pedestrian elements operate at LOS A for the Weekday Midday analysis peak hour.

2024 BUILD CONDITIONS

The 2024 build pedestrian volumes are prepared by adding the project generated incremental pedestrian trips (**Figure 2.7-3 of the transportation back up submitted with the EAS)** to the no-build pedestrian volumes (**Figure 2.7-9 of the transportation back up submitted with the EAS**)**.** The 2024 build pedestrian volumes are shown for the Weekday Midday peak hour in **Figure 2.7-10 of the transportation back up submitted with the EAS.**

LEVELS OF SERVICE (LOS)

Weekday Midday Peak Hour

A summary of the 2024 build conditions pedestrian analysis results with details on average pedestrian space (sf/ped), level-of-service (LOS), and LOS adjusted for platoon are presented in **Tables 9 and 10**. Overall, the LOS analysis indicates that all the study area's pedestrian elements operate at LOS B or better for the Weekday Midday analysis peak hour.

2020 Existing Weekday Midday Peak Hour:

Table 5 2020 Existing Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width (ft)	Weekday MD Peak Hour			
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS	Platoon ADJ LOS
Broadway between 11th St and 12th St (south sidewalk)	4.5	118	455.7	A	B

Table 6 2020 Existing Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday MD Peak Hour		
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS
Broadway and 11th Street	Southeast	207	1063.0	A
Broadway and 12th Street	Southwest	195	636.5	A

2024 No Build Weekday Midday Peak Hour:

Table 7 2024 No Build Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width (ft)	Weekday MD Peak Hour			
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS	Platoon ADJ LOS
Broadway between 11th St and 12th St (south sidewalk)	4.5	151	356.1	A	B

Table 8 2024 No Build Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday MD Peak Hour		
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS
Broadway and 11th Street	Southeast	348	622.4	A
Broadway and 12th Street	Southwest	222	559.0	A

2024 Build Weekday Midday Peak Hour:

Table 9 2024 Build Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width (ft)	Weekday MD Peak Hour			
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS	Platoon ADJ LOS
Broadway between 11th St and 12th St (south sidewalk)	4.5	359	149.5	A	B

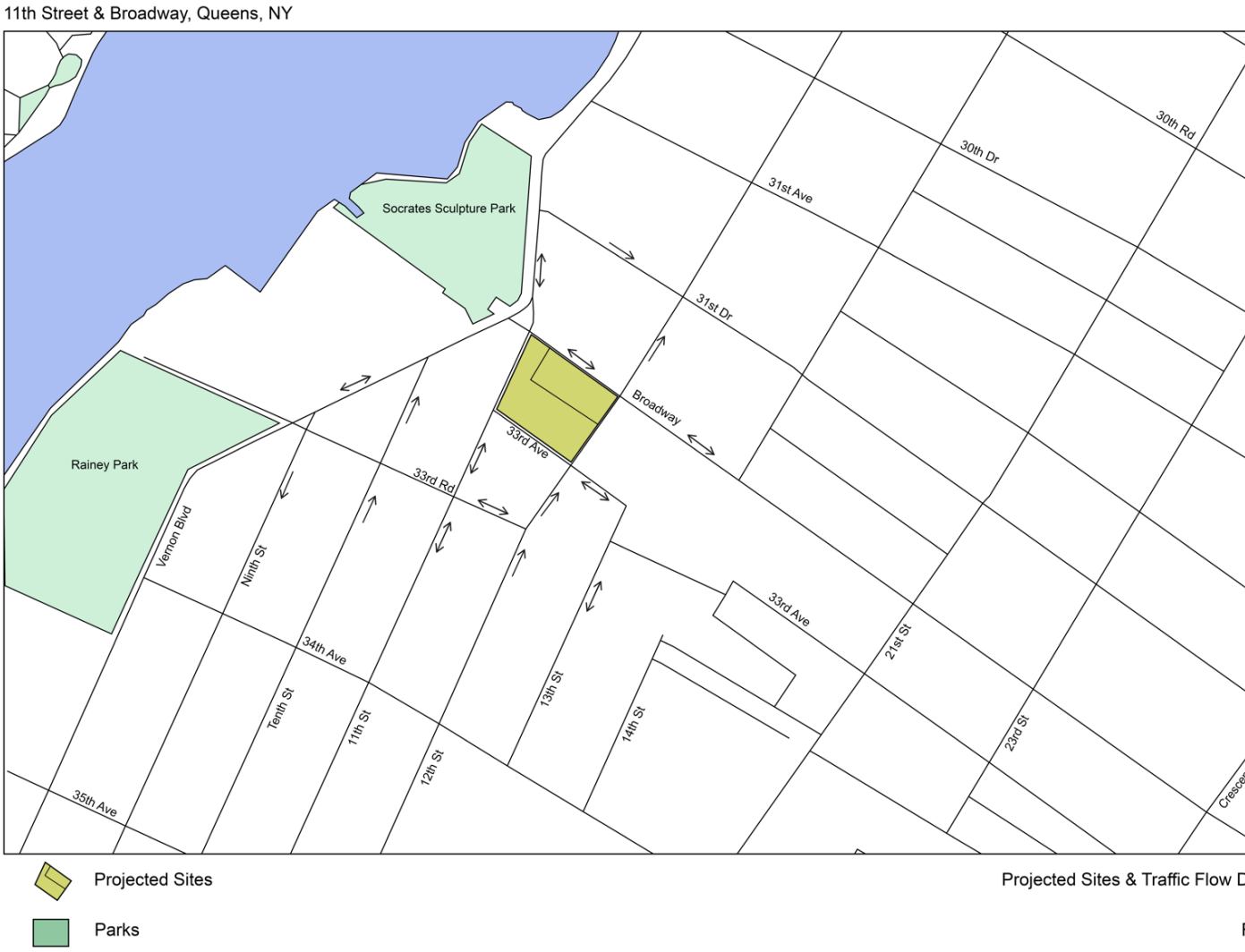
Table 10 2024 Build Pedestrian Levels of Service – Corners

Intersection	Corner	Weekday MD Peak Hour		
		Volume (ped/hr)	Average Pedestrian Space (sf/ped)	LOS
Broadway and 11th Street	Southeast	568	377.8	A
Broadway and 12th Street	Southwest	468	259.8	A

2.7-14 – Conclusions

Based on the above transportation analyses, the Proposed Actions would have no significant adverse transportation impacts on neighborhood transportation systems. Therefore, based on the *2020 CEQR Technical Manual,* no detailed transportation analyses would be warranted.

Figure 2.7-1 – Projected Development Site and Traffic Flow Direction Map



11th STREET
(80' wide)

80'-0"
40'-0"
20'-0"
20'-0"

158'-9"

50'-0"

10'-0" 30'-0" 10'-0"

228'-0½"

61'-8"

12'-0" NEW C.C.
5' C.C.

20'-0" NEW C.C.

seating area

51'-0" 45'-0" 15'-0"
75'-0"

57'-10"

FLORAL PRODUCTION
U.G. 16
5,672.42 SF NET F.A.
5,888 GFA

WINE DISTRIBUTOR
U.G. 16
3,963.42 SF NET F.A.
4,126.20 GFA

COMMERCIAL SPACE
3,717.65 SF NET F.A.
3,864.12 GSF

MAIL ALCOVE

SEATING AREA

LOADING AREA
1,084.14 SF

DRIVEWAY
65'-0"
22'-0"

EL. 11.36

CANOPY ABOVE

OPEN

PASSENGER DROP-OFF

RES. LOBBY

EL. 9.34

CONCRETE WALK
10'-0"

STOR.

DFE 13.0

SPRINK. WATER METER ROOM

GAS METER ROOM
56'-2"

ELECT. ROOM
4'9"-2"

SEATING AREA

MAIL ALCOVE

RAMP DOWN
19'-10"

SUPERMARKET/GROCERY STORE
9,763.89 SF - NET F.A.
10,055.52 GSF

ARTIST STUDIO
U.G. 9
4,568.75 SF - NET F.A.
4,752.6 GSF

45'-2"
15'-0"

LOAD'G
1036.85 SF

219'-11½"

92'-3½"

12'-0" NEW C.C.

50'-0"

10'-0" 30'-6" 10'-0"

200'-2½"

33rd AVENUE
(50' wide)

BROADWAY
(75' wide)

12th STREET
(50' wide)

N

FIRST FLOOR PLAN

SCALE: 1" = 40'-0"

0 10 20 40

THE ARCHITECT SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, DEVIATIONS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTIONS WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALWAYS USE DIMENSIONS AS SHOWN. DRAWINGS ARE NOT TO BE SCALED. GERALD J. CALIENDO ARCHITECT, P.C. AND ITS PRINCIPAL/EMPLOYEES WERE NOT RETAINED FOR ANY CONSTRUCTION SUPERVISION.

Gerald J. Caliendo, R.A., A.I.A.
Architect, P.C.

Architecture
Interior Design
Code Consultant
Building Dept. Expediting

138-72 Queens Boulevard
Briarwood N.Y. 11435

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DRAWING TITLE: FIRST FLOOR PLAN FOR ILLUSTRATIVE PURPOSES ONLY

PREMISES: 11-01 33RD AVENUE
ASTORIA, NY

DRAWN BY:	N.M.H.
CHECKED BY:	GJC
JOB No:	18213
SCALE:	AS NOTED
DATE:	1-29-21

SEAL: REGISTERED ARCHITECT GERALD J. CALIENDO 020241 STATE OF NEW YORK

DRAWING No: 3 OF 13

A-002.00

2.8 AIR QUALITY

2.8-1 – Introduction

Analysis Framework

Ambient air quality, or the quality of the surrounding air, may be affected by air pollutants produced by motor vehicles, referred to as "mobile sources"; by fixed facilities, usually referenced as "stationary sources"; or by a combination of both. Under CEQR, an air quality assessment determines both a proposed project's effects on ambient air quality as well as the effects of ambient air quality on the project. The analysis framework, as mandated by the State Environmental Review Act, followed the *2020 CEQR Technical Manual*.

Air Pollutants and Applicable Standards and Guidelines

Criteria Pollutants - National Air Quality Standards

The U.S. Environmental Protection Agency (EPA) has identified six pollutants, known as criteria pollutants, which are of concern nationwide. As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for the criteria pollutants by EPA, and New York State has adopted the NAAQS as the State ambient air quality standards. The pollutants for which detailed analyses were conducted for are presented in **Table 2.8-1.**

Background concentrations, at the nearest federally-mandated New York State Department of Environmental Conservation (NYSDEC) monitoring station(s), of the criteria pollutants for which detailed analyses were conducted, were obtained from the NYSDEC's annual report for 2019. **Table 2.8-1** shows the background concentrations and the NAAQS.

Table 2.8-1: Background Concentration at the NYSDEC Nearest Monitoring Station 2019

Pollutant	Averaging Period	National and State Standards	Background Concentration	Monitoring Station
$PM_{2.5}$	24-Hour	35 µg/m^3	18.3 µg/m^3	JHS 45
	Annual	12 µg/m^3	7.5 µg/m^3	
NO_2	1-Hour	188 µg/m^3	110.5 µg/m^3	IS 52
	Annual	100 /m^3	31.8 µg/m^3	

NO_2 NAAQS

The 1-hour NO_2 NAAQS was promulgated in the United States in February 2010. The 1-hour standard is based on a percentile rank from the annual distribution of daily maximum 1-hour values, averaged across the number of years processed. The 1-hour NO_2 modeled design value is based on the 98th percentile, or 8th highest, of the daily maximum 1-hour values across the year. For typical multi-year modeling analysis based on 5 years of National Weather Service (NWS) meteorological data, the modeled design value is the 5-year average of the 8th highest values for NO_2.

Nitrogen oxide (NOx) emissions from combustion consist predominantly of nitric oxide (NO) at the source. The NOx in these emissions is then gradually converted to NO_2. For determining compliance with the 1-hour standard, the EPA has developed a three-tiered modeling approach: a) Tier 1, the most conservative

approach, assumes a full (100%) conversion of NOx to NO_2. b) Tier 2 is the Ambient Ratio Method 2 (ARM2) which assumes ambient equilibrium between NO and NO_2. AERMOD multiplies Tier 1 impacts with default ambient ratios, or source-specific NO_2/NO_x in-stack ratio (ISR) data. The national default minimum and maximum ambient ratios for the primary facility are 0.5 and 0.9, respectively. c) 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. In AERMOD's Tier 3 approach, the model generates 8th highest daily maximum 1-hour NO_2 concentrations or total 1-hour NO_2 concentrations if hourly NO_2 background concentrations are added within the model.

NYC Guidelines

The city's *de minimis* criteria are used to determine the significance of the incremental increase in CO and $PM_{2.5}$ concentrations that would result as a consequence of the proposed project. The CO criteria set the minimum change in 8-hour average CO concentration that constitutes a significant environmental impact. Significant increase of CO concentrations in New York City are:

- An increase of 0.5 parts per million (ppm) or more in the maximum 8-hour average CO concentration at a location where the predicted No-Action 8-hour concentration is equal to 8 ppm or between 8 ppm and 9 ppm; or
- An increase of more than half the difference between baseline (i.e., No-Action) concentrations and the 8-hour standard, when No-Action concentrations are below 8 ppm.

The following criteria are used for determination of significant adverse $PM_{2.5}$ incremental impacts for projects subject to CEQR:

- Predicted 24-hour maximum $PM_{2.5}$ concentration increase of more than half the difference between the 24-hour background concentration and the 24-hour standard; or
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or for mobile sources, at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 $\mu g/m^3$ at any receptor location for stationary sources.

Noncriteria Pollutants

The NYSDEC has established guidelines for maximum allowable concentration of "noncriteria pollutants," which are potentially toxic or carcinogenic pollutants. The maximum allowable guidelines set a maximum 1-hour and annual averaging time concentrations and are published in the DAR-1 AGC/SGC Table, where AGC/SGC refers to Annual and Short-term Guideline Concentrations. The most recent DAR-1 guidelines were created on August 10, 2016. NYSDEC also regulates pollutants that produce discomfort due to odors, where significant discomfort is evaluated on quantity, characteristic, or duration.

2.8-2 – Mobile Source

Introduction

According to the *CEQR Technical Manual,* projects 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 (e.g., diesel trains, helicopters, boats), or add new uses near mobile sources (e.g., roadways, garages, parking lots). Detailed analyses are required to predict whether a proposed action could potentially result in a significant adverse air quality impact if certain threshold criterions are met or exceeded. Proposed actions that do not meet or exceed the threshold criterions (screen out) are not expected to result in mobile source impacts.

Mobile Source Screen

Project-Generated Traffic

Screening analyses for the project's peak hour auto traffic and peak hour heavy-duty diesel vehicle (HDDVs) traffic were conducted. Per the *CEQR Technical Manual*, a detailed analysis for carbon monoxide (CO) is required if the generated peak hour auto traffic or diversion of existing peak hour traffic would result in an increment of 170 auto trips (in this area of the city). A detailed analysis for particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$) is required if the generated peak hour HDDVs traffic or its equivalent in vehicular emissions, depending on the type of road, would be met or exceeded.

According to the transportation analysis for this project, the proposed project would generate a total of 7, 14, 17, and 13 net vehicle trip ends (inbound and outbound combined) during the weekday AM, Midday, PM, and Saturday Midday peak hours, respectively. This total project-generated traffic would include 6 and 4 trucks during the AM and Midday peak-hour periods, respectively, and no trucks otherwise. These peak-hour project generated traffic would not exceed the threshold of 170 vehicular trips (condition outlined in Sections 210 of Chapter 17 of *the CEQR Technical Manual*). Therefore, no CO detailed analysis is required.

The $PM_{2.5}$ equivalent truck calculation in vehicular emission screen ranges from 12 to 23 HDDVs depending on the type of road. Peak hour traffic, obtained from the transportation analysis for this project, was used in the screening analysis. All autos were assumed to be LDGT1 class vehicles, based on guidance from the Department of City Planning (DCP) on similar projects. All project-generated traffic was assumed to travel on paved road, the most stringent road type. The worst-case HDDVs or its equivalent in vehicular emissions would result in a maximum of 8 equivalent trucks. **Table 2.8-2** shows the project-generated traffic (inbound and outbound combined) and the results of the *CEQR Technical Manual* Equivalent Truck Calculations for each peak-hour period.

Table 2.8-2: *CEQR Technical Manual* Equivalent Truck Calculations

Roadway	Roadway Classification (Threshold HDDVs screen) [1]	Peak-Hour Period	Truck Per Hour	Auto Per Hour	Equivalent Truck	Pass / Fail
Broadway	Arterial (23)	AM	6	-13	-1.3	Pass
		MD	4	10	8.1	Pass
		PM	0	17	8.2	**Pass**
		Sat MD	0	13	6.3	Pass

As seen in **Table 2.8-2**, the Proposed Actions $PM_{2.5}$ equivalent truck calculation in vehicular emissions does not exceed the HDDVs screening threshold criterions. Therefore, no detailed analysis is required.

Accessory Parking

Based on CEQR guidelines, the maximum capacity of a parking facility is evaluated with a threshold capacity to determine whether a detailed analysis is required. The threshold capacity, per the NYC Department of City Planning (DCP), is 85 new off-street parking spaces. If the threshold is met or exceeded, a detailed analysis is warranted. The proposed project would result in an increment of 18 additional accessory parking spaces. Therefore, no analysis was required.

Existing Mobile Source of Pollutants

According to *2020 CEQR Technical Manual*, projects that would result in new sensitive uses within 200 feet of an atypical roadway or near large parking (or loading dock) facilities may result in significant adverse mobile source air quality impacts. The Proposed Project is not located near a highway or large parking facility. Therefore, no detailed analysis was required, and no significant adverse mobile source air quality impacts are expected from existing mobile source of pollutants.

2.8-3 – HVAC Systems Analysis

Introduction

Per the *2020 CEQR Technical Manual*, the HVAC analysis considers the potential for emissions from the HVAC system of the proposed project to significantly impact existing land uses (project-on-existing), and the potential of the proposed project to significantly impact each other (project-on-project). Based on CEQR guidelines, a preliminary screening analysis is to be conducted as a first step to predict whether the potential impacts of the heat and hot water system boiler emissions can be significant. The screening analysis determines the threshold of development size below which the action would not have a significant impact. This CEQR screening procedure is applicable to buildings that are not less than 30 feet from the nearest building of similar or greater height. Otherwise, a detailed dispersion analysis is required.

Screening Analysis

The potential for the heat and hot water system(s) to have a significant adverse impact on nearby receptors depends on the type of fuel that would be used by the HVAC system, the height of the stack venting the emissions, the distance to the nearest building, the building's residential or non-residential

use, and the square footage of the development that would be served by the system. The *2020 CEQR Technical Manual* provides a screening analysis based on these factors, which was utilized to determine the potential for significant impacts from the proposed building's HVAC system(s).

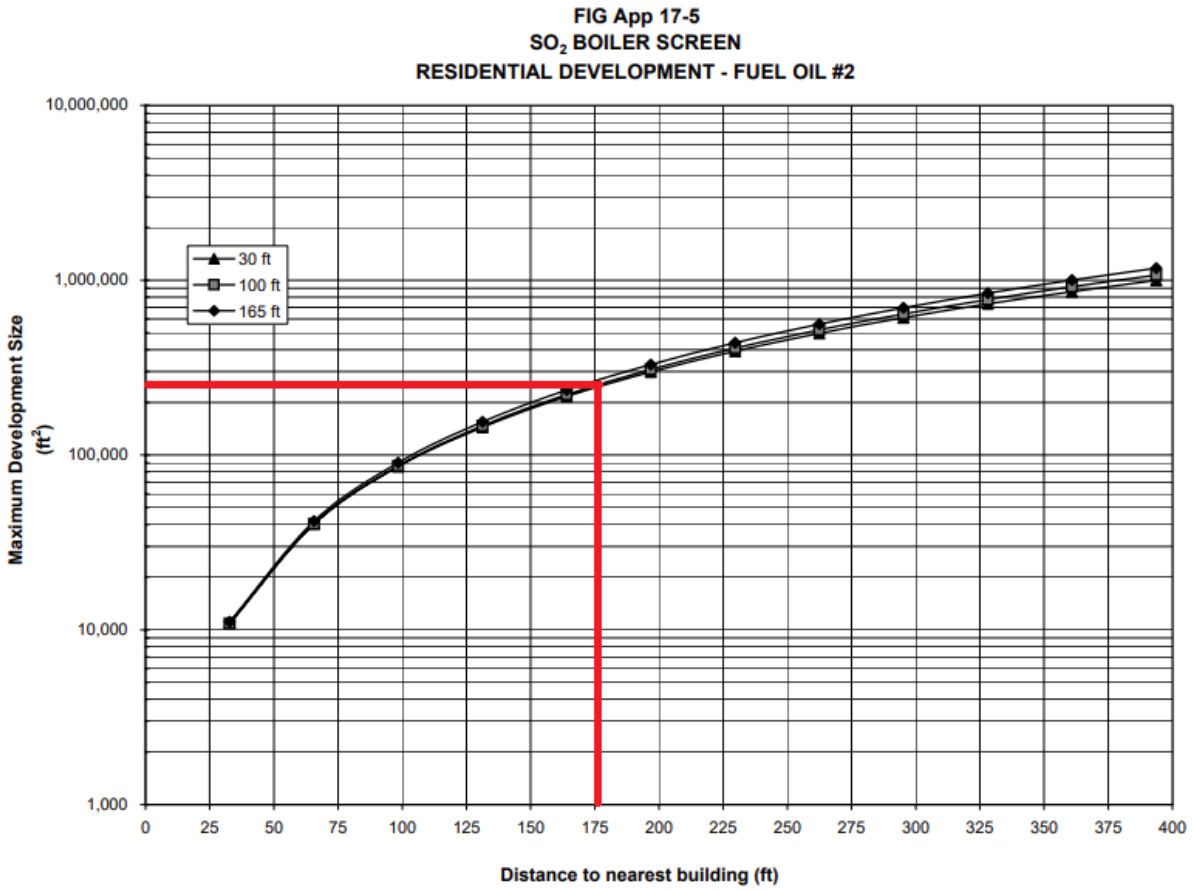
If the actual distance between the source building and the affected building is greater than the threshold distance for a building size, then that building passes the screening analysis (and no significant impact is predicted). However, if the actual distance is less than the threshold distance for a building, then there is a potential for a significant impact and a detailed analysis would be required. According to 15 RCNY 2-15, no new boiler or burner installations may use No. 6 or No. 4 fuel oils. Therefore, the highest-emitting fuel that could be used is No. 2 fuel oil. The following screening analysis was conducted:

- Project-on-Existing: Projected Development Site 1 as a residential building, 75 feet high, containing 243,445[1] gsf of floor area.

The CEQR nomograph depicted on Figure 17-5 of the *2020 CEQR Technical Manual Appendices* was used for the screening analysis. This nomograph is for No. 2 fuel oil HVAC system serving a residential development. **Figure 2.8-1** (using Figure 17-5 of the *CEQR Technical Manual Appendices)* shows the screening analysis.

[1] Does not include 2,121 gsf loading dock area

Figure 2.8-1: Minimum Distance from the Projected Development Site 1 Where No Potential for Significant Impact Would be Predicted - HVAC Screen on Buildings 75 feet or Higher



The screening analysis **Figure 2.8-1** (using Figure 17-5 of the *2020 CEQR Technical Manual Appendices*) shows that a detailed analysis would be required for any existing building that is 75 feet or higher and within 175 feet from the Projected Development Site 1. Two buildings associated with the rezoning action Vernon Boulevard-Broadway Rezoning CEQR # 12DCP139Q are located west of the Project Site on Block 315, Lot 1. The other two buildings are 8-story, 80-foot high residential developments, located north of Broadway. The certificates of occupancy for these developments, 11-15 Broadway (Block 502, Lot 41) and 12-15 Broadway (Block 519, Lot 6), indicate that these buildings are 80-foot high, and satellite imagery and online search indicate that these buildings have roof top recreation areas. As such, the heights of these buildings were assumed at 86 feet (6 feet above the roof top). Therefore, detailed analyses were required to predict the potential for significant adverse air quality impact on these developments.

Detailed Analysis

Methodology

A stationary source modeling was conducted to evaluate the potential impacts associated with the boilers stacks emissions. Lakes Environmental MPI executable was used in the analysis. The MPI executable takes advantage of computers with multiple processors, reducing run-time significantly. Lakes Environmental has adjusted the US EPA AERMOD source code and recompiled the model to parallelize the processing of

receptors. The latest MPI executable (used in the analysis) modified the EPA's AERMOD latest executable model version 19191. The AERMOD model incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The analysis was conducted assuming stack tip downwash and elimination of calms. The Building Profile Input Program (BPIP) was run with the downwash effect enabled. All analyses were conducted using the latest five consecutive years of meteorological data (2015-2019), obtained from the NYSDEC, Division of Air Resources, BAQAR, Impact Assessment and Meteorology Section. Surface data used in the analysis is from LaGuardia Airport, upper air data is from Brookhaven station, New York. The meteorological data was processed using the latest versions of AERMINUTE, AERSURFACE and AERMET. The meteorological data provided hour-by-hour wind speeds and directions, stability states, and temperature inversion elevations over the 5-year period. The population in Queens County, obtained from the U.S. Census Bureau 2019, was specified to account for the effects of increased surface heating from an urban area on pollutant dispersion under stable atmospheric conditions.

The pollutants of concern of natural gas fueled boilers are NO_2 and $PM_{2.5}$. The boiler's energy intensity was calculated based on the energy consumption rate, obtained from the *2020 CEQR Technical Manual Appendices*, corresponding to residential use in the building. Emissions were calculated based on emission factors obtained from the EPA's AP-42 manual for external combustion sources[2]. All fuel was assumed to be consumed during the 100-day (or 2,400 hour) heating season, based on the *2020 CEQR Technical Manual*. **Table 2.8-3** shows the boiler's energy intensity and pollutants emission rates.

Table 2.8-3 shows the RWCDS HVAC system calculated emission rates, both short-term and annual.

Table 2.8-3: Projected Development Site 1 RWCDS Short-term and Annual Emission Rates

Site ID	Development Floor Area (gsf)	Boiler's Energy Intensity (MMBtu) and Fuel Used	Pollutant	Short-term Emission Rate (g/s)	Annual Emission Rate (g/s)
Projected Development Site 1	254,773	6.40; Natural gas	NO_2	0.079	0.022
			$PM_{2.5}$	0.006	0.0016

The boilers stacks' diameters and stacks' exit temperatures were estimated based on values obtained from the DEP "CA Permit" database for the corresponding boiler sizes (i.e., rated heat input or million Btu per hour)[3]. The stacks' exit velocities were calculated based on the fuel dry volume of combustion components per unit of heat content. The boilers' stacks were placed 3 feet above the roofline and as close as possible to the receiving building, and a stack(s) set back distance(s) was specified if impact was predicted.

Projected Development Site 1 was modeled as a building that covers its entire lot area (the wall façade located on the outer lot lines) and rises to its RWCDS height. Buildings in the surrounding area were accounted for the downwash effect on plums dispersions (BPIP). Receptors on the receiving building(s) were placed on the wall façade facing the Project Site, at 10 feet horizontal increments, or in a grid above the rooftops, and on all floor levels including terraces and roof top recreation areas.

[2] EPA. *Compilation of Air Pollutant Emission Factors AP-42 Fifth Edition, Vol. 1:* Chapter 1: External Combustion Sources, https://www3.epa.gov/ttn/chief/ap42/ch01/final/c01s04.pdf. July 1998.
[3] DEP "CA Permit" database obtained from the New York City Department of City Planning, February 2020.

The USGS National Elevation Dataset (NED) 1/3 arc-second resolution (GeoTIFF dataset), the terrain data set recommended by the US EPA for use in the United States for regulatory purposes, was used to process buildings' base elevations. The base elevations of receptors and stacks were set to their buildings base elevations.

The 1-hour NO_2 was predicted with the calculated emission rate, 8th highest impact concentration (the NAAQS design value), and with a Tier 3 approach. For the Tier 3 approach, 2015-2019 Ozone and 2017-2019 NO_2 hourly background concentrations from the IS 52 monitoring station were obtained from the NYSDEC, Division of Air Resources, BAQAR, Impact Assessment and Meteorology Section. Single missing ozone data were substituted with the maximum of the previous and subsequent hour concentrations. Other missing data were substituted with corresponding (exact day and hour) data from the Queens College monitoring station.

Result of the Dispersion Analysis

As previously mentioned, each pollutant averaging time was modeled twice, with building wake effect enabled/disabled. The predicted impact concentration is the highest concentration of these. The Tier 3 1-hour NO_2 concentration(s) included the background concentration within the model. The $PM_{2.5}$ modeled concentrations were evaluated with the NYC Guidelines threshold, *de minimis*, for stationary sources. The Projected Development Site 1 results of the HVAC dispersions analysis are shown in **Table 2.8-4**.

Table 2.8-4: Projected Development Site 1 HVAC Dispersion Analysis Results - Maximum Concentration on Vernon Boulevard-Broadway Rezoning CEQR # 12DCP139Q Buildings A and B, 11-15 Broadway (Block 502, Lot 41), 12-15 Broadway (Block 519, Lot 6)

Pollutant and Averaging Time	Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Evaluated Concentration ($\mu g/m^3$)	Threshold Concentration ($\mu g/m^3$)	Threshold Standard
1-hour NO_2	182.7		**183**	**188**	NAAQS
Annual NO_2	1.46	31.8	**33**	**100**	NAAQS
24-hour $PM_{2.5}$	3.29	N.A.	**3.29**	**8.35**	*de minimis*
Annual $PM_{2.5}$	0.10	N.A.	**0.10**	**0.3**	*de minimis*
Note: 1. Concentrations predicted with stack(s) setback distances (see E-Designation for setback distances). 2. Tier 3 approach used to predict 1-hour NO_2 concentrations.					

As seen in **Table 2.8-4** the NO_2 predicted concentrations do not exceed the NAAQS and the $PM_{2.5}$ increment concentrations do not exceed the NYC *de minimis*. Therefore, with (E) Designations in place, the emissions of the Projected Development Site's HVAC system(s) are not predicted to pose significant adverse impacts to existing building(s) in the area.

Therefore, in order to avoid any potential impacts associated with the HVAC equipment, an (E) designation (E-613) will be assigned for air quality. The E-Designation is specified in section 2.8-6 of the Air Quality Chapter.

2.8-4 – Industrial Sources

Introduction

Per the *2020 CEQR Technical Manual,* projects that would result in new uses (particularly schools, hospitals, parks, and residences) within 400 feet of manufacturing or processing facilities, may result in potentially significant adverse impacts related to stationary sources. The analysis first determines if there are any existing manufacturing uses (in the 400 feet study area) with exhaust stacks, vents, or other emission sources that may have the potential to adversely affect the uses introduced by the project. An air dispersion analysis is then conducted for existing industrial source located in the study area; otherwise no analysis is required.

The proposed project RWCDS would include approximately 11,098 gsf of light manufacturing uses (including a wine distributor, floral production space, and 1,084 sf loading dock). The commercial and light industrial uses are assumed for the RWCDS Scenario as the Applicant is interested in providing a mix of traditional commercial retail uses and light industrial tenants permitted in the MX district, including fine arts-related uses, as present in the nearby Noguchi Museum and Socrates Sculpture Park (studios, galleries, storage, conservation), or innovation/maker spaces (technology, floral design). The proposed light industrial uses would not include manufacturing processing facilities, such as, woodworking, auto body repair and refinishing, offset printing, bakery, or metal processing. Therefore, no significant impact would be predicted from the light industrial use on the property, and no analysis was required.

Existing manufacturing uses with exhaust stacks, vents, or other emission sources that may have the potential to adversely affect the uses introduced by the project were identified by reviewing the New York City Department of Environmental Protection (DEP) online Clean Air Tracking System (CATS) database, the NYS Department of Environmental Conservation map application (DEC info Locator), and through field observation / site investigation.

Survey for Manufacturing Processing Facilities

The Project Site occupies the entire Block 316, which is bounded by Broadway to the north, 33rd Avenue to the south, 11th Street to the west and 12th Street to the east. The 400 feet study area encompasses all or part of Blocks 313, 314, 315, 316, 317, 318, 319, 519, 521, 522, and 529. The following existing industrial emission sources were identified in the DEP CATS database:

- Eagle Woodworking and Construction (Block 502, lot 23) - PA024569 and PB020102. The information and analysis of this site is discussed below.

The following location with an expired DEP processing permit was identified in the CATS database search:

- Expired processing permit PB003606 is registered to Structural Display Co., Inc. at 12-12 33rd Avenue. This permit expired on 9/2/2006. The property at 12-12 33rd Avenue is currently occupied by DHL Shipping as a shipping warehouse and distribution facility. Structural Display Co., Inc. is no longer present at this location. Therefore, no analysis was required.

The following potential air emission source was identified in the Study Area during the field survey:

- 11-11 Broadway – The building at 11-11 Broadway was closed at the time of the field survey and no signs or other items identifying the business in the building were visible from the street. A stack was observed protruding from the west wall of the building. The NYC Department of Building database shows that the facility has a work permit for a full demolition of the building[4]. The demolition permit was issued in October 2018 (Job Number 421677509). According to a telephone interview conducted on 1/28/20 at 11:55 a.m. with Mr. Brett Harris of AKI, the owner of the property at 11-11 Broadway, the building is currently vacant and scheduled for demolition. Therefore, no existing potential emission source is located at this site and no analysis was required.

No other existing industrial sources were identified in the fieldwork observation/site investigation. The summary findings of the field observations and NYCDEP and NYSDEC databases are as follows:

Emission Sources

The Eagle Woodwork and Construction, located at 11-32 31 Drive (Block 502, Lot 23) has two operational permits: PB0024569 for a paint spray booth operation, and PB020102 for woodworking equipment. The facility is situated 265 feet north of the Project Site. The emissions associated with the facility are:

Woodworking Emission (PB020102)

The two table saws, identified as Emission Point #2 in the certificate, are connected to an internal filter bag dust collector with a 99.9% control efficiency. The emitted air returns into the workroom. The contaminants listed in the certificate is wood fines (NY identification number NY075-00-0), assumed as 100% $PM_{2.5}$ as a conservative measure (and for simplicity of the analysis). The equipment operates 8 hours per day, 200 days per year. The certificate situates the 12-inch in diameter stack at 8-foot above grade and 8-foot below the roof. The stack volumetric flow rate of 4,000 cubic feet per minute (C.F.M) and exit temperature of 70-degree Fahrenheit were procured from the certificate. The site plans, included in PB020102, situate the stack approximately 50 feet north from the southern lot line of the facility. **Table 2.8-5** shows the woodworking equipment emission rates.

Spray Booth Emission (PA024569)

The emission associated with PA024569 processing permit, identified as Emission Point #1, is from an industrial spray booth operation with an activity rate of 8 hours per day, 200 days per year. The operation consumes 0.5 gallon per hour and 4.0 gallons in a maximum of 8-hour day. The coating is applied by an air atomizing handgun, and emission of pigments (solids) are reduced by a custom filter with a 95 percent control efficiency; all the solvents are emitted to the atmosphere. The non-captured solids and solvents are emitted to the outside atmosphere through a 34-inch diameter roof top stack. The stack exhausts at a rate of 7,000 CFM and its exit temperature is 70-degree Fahrenheit. The 6-above the 16 feet high roof is located close to the southern lot line of the facility.

The contaminants associated with spray booths operations are solids (also named particulates) and solvents. Solvents are the VOC which evaporate during the spraying activity and while the coating substance dries on the sprayed article. The solids are pigments, resin, and polymers, in fluid or solid phase, that bind to the sprayed article, eventually drying to a hard surface. However, some of the solids are over-

[4] http://a810-bisweb.nyc.gov/bisweb/JobsQueryByNumberServlet?requestid=6&passjobnumber=421677509&passdocnumber=01

sprayed where 5 percent (there is a 95 percent control efficiency filter) of that over-sprayed amount is emitted to the outside air. The coatings contain 30 to 85 percent solvents by volume and this amount is regulated by the EPA and NYSDEC.

The contaminants listed in the certificate are pigments (NY identification number NY075-00-0) and nine other contaminants identified as volatile organic (VOC) compounds and/or Hazardous Air Pollutants (HAP). The pigments are the solids, also named particulates. The particulates NY075-00-0 were assumed to be 100 percent $PM_{2.5}$ as a conservative measure (and for simplicity of the analysis). The other contaminants listed in the certificate are the VOC and HAP contaminants. Each of these is analyzed with the SGC/AGC guideline concentration. **Table 2.8-5** shows the particulate emission rates from both the woodworking equipment and the spray booth operation.

Table 2.8-5: Eagle Woodwork and Construction Particulates as $PM_{2.5}$ Emission Rates from the Woodworking Equipment and Spray Booth Operation

Certificate ID	Contaminant	Permitted Emission Rate		Emission Rate			
				Short-term		Annual	
		lb/hr (1)	lb/yr	lb/hr	g/s	lb/yr	g/s
PA024569	$PM_{2.5}$	0.007	32	6.67E-03	8.40E-04	32.0	4.60E-04
PB020102		0.0003	1.6	3.33E-04	4.20E-05	1.6	2.30E-05

Notes: (1) The average daily 1-hour emission rates were calculated from the hour per day activity rates.

Table 2.8-6 shows the VOC emission rates from the spray booth operation.

Table 2.8-6: Eagle Woodwork and Construction VOC Short-term and Annual Emission Rates from the Spray Booth Operation.

Contaminant name	CAS No.	1-Hour		Annual	
		lb/hr	g/s	lb/yr	g/s
N-Butyl Acetate	123-86-4	0.27	3.40E-02	432	6.21E-03
Butoxyethnol,2	111-76-2	0.09	1.13E-02	144	2.07E-03
Methyl Ethyl Ketone	78-93-3	0.59	7.43E-02	944	1.36E-02
Methyl Isobutyl Ketone	108-10-1	0.64	8.06E-02	1024	1.47E-02
Xylene	1330-20-7	0.22	2.77E-02	176	2.53E-03
Acetone	67-64-1	0.45	5.67E-02	720	1.04E-02
Isopropanol Alcohol	67-63-0	0.18	2.27E-02	228	3.28E-03
Methanol	67-56-1	0.03	3.78E-03	24	3.45E-04
Dioctyl Phthalate	117-81-7	0.13	1.64E-02	208	2.99E-03

Dispersion Analysis

For estimating potential impacts from industrial emission sources of toxic air pollutants, the *2020 CEQR Technical Manual* recommends using a screening procedure as a first step in the analysis. This procedure, the "Industrial Source Screen", is based on a generic emission rate of 1 gram per second of a pollutant from a point source. This approach, which can be used to estimate maximum short-term and annual average concentration values at various distances (from 30 to 400 feet) from an emission source, was utilized to assess the potential impacts from each emission source. The *2020 CEQR Technical Manual* pre-tabulated concentrations for a source located 265 feet from a receptor are: 1-hour impact concentration

of 2,175 µg/m^3, 24-hour impact concentration of 727 µg/m^3, and annual impact concentration of 103 µg/m^3.

The generic impact concentrations obtained from Table 17-3 of the *2020 CEQR Technical Manual* for an emission rate of 1 gram per second were multiplied by the pollutants' actual emission rates to estimate the impact concentrations of each pollutant per emission point. Impact concentrations of pollutants emitted from both emission points were added to predict the cumulative impact concentration(s).
The $PM_{2.5}$ 24-hour and annual averaging times modeled concentrations were evaluated with the NYC Guidelines threshold, *de minimis*, for stationary sources. **Table 2.8-7** shows the $PM_{2.5}$ dispersion analysis results.

Table 2.8-7: Particulates as PM2.5 Dispersion Analysis Results

Source	Predicted Conc. (µg/m^3)	Background Conc. (µg/m^3)	Threshold Criteria (µg/m^3)	Threshold Standard
$PM_{2.5}$ 24-hour	0.64	N.A.	**8.35**	*de minimis*
$PM_{2.5}$ Annual	0.05	N.A.	**0.3**	*de minimis*

As seen in **Table 2.8-7**, the $PM_{2.5}$ predicted concentrations do not exceed the *de minimis* threshold concentrations.

The noncriteria pollutants dispersion analysis results are presented in **Table 2.8-8**.

Table 2.8-8: Noncriteria Pollutants Dispersion Analyses Results

Contaminant Name	CAS No.	1-Hour	SGC	Annual	AGC
		µg/m^3	µg/m^3	µg/m^3	µg/m^3
N-Butyl Acetate	123-86-4	74.0	95000.0	0.64	17000.0
Butoxyethnol,2	111-76-2	24.7	14000.0	0.21	1600.0
Methyl Ethyl Ketone	78-93-3	161.7	13000.0	1.40	5000.0
Methyl Isobutyl Ketone	108-10-1	175.4	31000.0	1.52	3000.0
Xylene	1330-20-7	60.3	22000.0	0.26	100.0
Acetone	67-64-1	123.3	180000.0	1.07	30000.0
Isopropanol Alcohol	67-63-0	49.3	98000.0	0.34	7000.0
Methanol	67-56-1	8.22	33000.0	0.04	4000.0
Dioctyl Phthalate	117-81-7	35.6	---	0.31	4.2E-01

As seen in **Table 2.8-8**, the pollutants impact concentrations are less than the SGC/AGC threshold concentrations. Therefore, no significant adverse air quality impacts are predicted from industrial sources.

2.8-5 – Major and Large Sources

Survey for Major/Large Sources Facilities

Per the *2020 CEQR Technical Manual,* projects that would introduce new uses near major sources, large sources, or odor producing facilities may result in potentially significant adverse air quality impacts. The study area considers major sources, large sources, and odor producing facilities within 1,000 feet of the proposed project. Major emission sources are identified as those sources located at Title V facilities that

require Prevention of Significant Deterioration permits; large emission sources are identified as sources located at facilities which require a State facility permit. Solid waste or medical waste incinerators, asphalt and concrete plants, power generating plants, large boilers of large public facilities, and large industrial facilities are the typical types of sources requiring these permits. Odor producing facilities are operations that have the potential to cause discomfort, such as: solid waste management facilities, water pollution control plants (i.e., sewage treatment plants), and incinerators.

No existing large combustion sources, such as power plants, cogeneration facilities, etc. located within 1,000 feet of the Project Site was identified.[5] In addition, no odor producing facility was identified within 1,000 feet of the proposed project. As such, no analysis was warranted, and no significant adverse air quality impacts are predicted from these types of facilities.

2.8-6 – E-Designation

The E-Designation language is as follows:

(E) Designation 613

Block 316, Lots 1, 13 (Projected Development Site 1):

Stationary Source – HVAC Source

Any new residential or commercial or industrial development on the above-referenced property must exclusively use natural gas as the type of fuel for heating, ventilating, air conditioning (HVAC), and hot water system(s), ensure that the stack is located at the building's highest level or at least 78 feet above grade, and that the stack is located at least 150 feet from the northern lot line facing Broadway and at least 100 feet from the western lot line facing 11th Street to avoid any potential significant adverse air quality impacts.

Stationary Source – Industrial/Manufacturing Source

To preclude any potential significant adverse air quality impacts from the following light industrial uses (fine arts-related uses as present in the nearby Noguchi Museum and Socrates Sculpture Park such as studios, galleries, storage and conservation, or innovation/maker spaces such as technology and floral design) developed pursuant to Section 74-962 of the Zoning Resolution of the City of New York, the emission stack must be located at the building's highest tier and at least 78 feet above grade. A mechanical ventilation system must be separated from the residential building to provide fresh air to and exhaust from the ground-floor, with vents running above the roof line of the residential towers. Any other processes that require an New York City Department of Environmental Protection Certificate of Operation (C of O) must provide an air quality analysis to OER prior to obtaining a Notice of Satisfaction in order to demonstrate that such process would not cause a significant adverse air quality impact.

In addition, a licensed architect or engineer must certify with the Department of Buildings that the manufacturing use on the above-referenced property will adhere to the following restrictions:

[5] https://gisservices.dec.ny.gov/gis/dil/

(a) The manufacturing use in the building does not have a New York City or New York State environmental rating of "A", "B" or "C" under Section 24–153 of the New York City Administrative Code for any process equipment requiring a New York City Department of Environmental Protection C of O or New York State Department of Environmental Conservation state facility air permit; and

(b) is not required, under the City Right-to-Know Law, to file a Risk Management Plan for Extremely Hazardous Substances."

2.8-7 – Conclusions

Based on the analysis, conditions associated with the proposed project would not result in any violations of the ambient air quality standards. Therefore, there is no reason to believe that the proposed project would result in any potentially significant adverse stationary or mobile source air quality impacts, and further assessment is not warranted.

2.9 NOISE

2.9-1 – Introduction

Equity Environmental Engineering, LLC (Equity) conducted noise monitoring on Tuesday, September 10th, 2019 in support of a Zoning Map Amendment that would establish an MX(R7A/M1-4) district within an area currently zoned R5. The Affected Area is block bounded by Broadway, 11th Street, 33rd Avenue, and 12th Street in the Astoria section of Queens Community District 1. The Affected Area consists of Queens Block 316, Lots 1 and 13.

Broadway is a two-way street with two moving east-bound and west-bound lanes, as well as curbside parking. 11th Street is a two-way street with two moving lanes and curbside parking. 33rd Avenue is a two-way street with two moving lanes and curbside parking. 12th Street is a two-way street with two moving lanes and curbside parking. Local intersections are controlled by traffic signals and stop signs.

The Proposed Actions would allow noise-sensitive high density residential development in an area where such bulk is not permitted under existing zoning, as well as allowing commercial development at an increased density. Therefore, an assessment of the potential for adverse effects on project occupants from ambient noise is warranted. Additionally, project-generated traffic would not double vehicular traffic on nearby roadways, and therefore would not result in a perceptible increase in vehicular noise. Therefore, this noise assessment is limited to an assessment of ambient noise that could adversely affect occupants of the development. The predominant existing noise source at the Affected Area is vehicular traffic on surrounding streets.

All back up and calibration data associated with this performed noise study can be found in the Noise Appendix of this EAS.

2.9-2 – Framework of Noise Analysis

Noise is defined as any unwanted sound, and sound is defined as any pressure variation that the human ear can detect. Humans can detect a large range of sound pressures, from 20 to 20 million micropascals, but only those air pressure variations occurring within a particular set of frequencies are experienced as sound. Air pressure changes that occur between 20 and 20,000 times a second, stated as units of Hertz (Hz), are registered as sound.

Because the human ear can detect such a wide range of sound pressures, sound pressure is converted to sound pressure level (SPL), which is measured in units called decibels (dB). The decibel is a relative measure of the sound pressure with respect to a standardized reference quantity. Because the dB scale is logarithmic, a relative increase of 10 dB represents a sound pressure that is 10 times higher. However, humans do not perceive a 10-dB increase as 10 times louder. Instead, they perceive it as twice as loud.

Sound is often measured and described in terms of its overall energy, taking all frequencies into account. However, the human hearing process is not the same at all frequencies. Humans are less sensitive to low frequencies (less than 250 Hz) than mid-frequencies (500 Hz to 1,000 Hz) and are most sensitive to frequencies in the 1,000- to 5,000-Hz range. Therefore, noise measurements are often adjusted, or weighted, as a function of frequency to account for human perception and sensitivities. The most common frequency weightings used are the A- and C-weightings. These weight scales were developed to allow sound level meters, which use filter networks to approximate the characteristic of the human hearing

mechanism, to simulate the frequency sensitivity of human hearing. The A-weighting is the most commonly used for environmental measurements, and sound levels measured using this weighting are denoted as dBA. The letter "A" indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear does. C-weighting gives nearly equal emphasis to sounds of most frequencies. Mid-range frequencies approximate the actual (unweighted) sound level, while the very low and very high frequency bands are significantly affected by C-weighting.

Table 2.9-1: Noise Levels of Common Sources

Sound Source	SPL (dB(A))
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
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0
Notes: A change in 3dB(A) is a just noticeable change in SPL. A change in 10 dB(A)Is perceived as a doubling or halving in SPL.	
Source: 2020 CEQR Technical Manual	

The following is typical of human response to relative changes in noise level:

- 3-dBA change is the threshold of change detectable by the human ear;
- 5-dBA change is readily noticeable; and
- 10-dBA change is perceived as a doubling or halving of the noise level.

The SPL that humans experience typically varies from moment to moment. Therefore, various descriptors are used to evaluate noise levels over time. Some typical descriptors are defined below.

- L_{eq} is the continuous equivalent sound level. The sound energy from the fluctuating SPLs is averaged over time to create a single number to describe the mean energy, or intensity, level. High noise levels during a measurement period will have a greater effect on the L_{eq} than low noise levels. L_{eq} has an advantage over other descriptors because L_{eq} values from various noise sources can be added and subtracted to determine cumulative noise levels.

- Lmax is the highest SPL measured during a given period of time. It is useful in evaluating Leqs for time periods that have an especially wide range of noise levels.

- $L_{eq(24)}$ is the continuous equivalent sound level over a 24-hour time period.

The sound level exceeded during a given percentage of a measurement period is the percentile-exceeded sound level (L_X). Examples include L_{10}, L_{50}, and L_{90}. L_{10} is the A-weighted sound level that is exceeded 10% of the measurement period.

The decrease in sound level caused by the distance from any single noise source normally follows the inverse square law (i.e., the SPL changes in inverse proportion to the square of the distance from the sound source). In a large open area with no obstructive or reflective surfaces, it is a general rule that at distances greater than 50 feet, the SPL from a point source of noise drops off at a rate of 6 dB with each doubling of distance away from the source. For "line" sources, such as vehicles on a street, the SPL drops off at a rate of 3 dBA with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The drop-off rate also will vary with both terrain conditions and the presence of obstructions in the sound propagation path.

2.9-3 – Noise Standards and Guidelines

In 1983, the New York City Department of Environmental Protection (NYCDEP) adopted the City Environmental Quality Review (CEQR) noise exposure guidelines for exterior noise levels. As shown in Table 2.9-2 below, noise standards classify noise exposure into four categories based on noise level limits and land use, for vehicular traffic, rail, and aircraft noise sources: Acceptable, Marginally Acceptable, Marginally Unacceptable and Clearly Unacceptable, Table 19-3 of the *2020 CEQR Technical Manual* (Table 2.9-3 below) defines attenuation requirements for buildings based on exterior noise exposure levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA (*L_{10} or Ldn, depending on the source*) or below.

Table 2.9-2: 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]		$L10 \leq 55$ dBA	Ldn < 60 dBA		Ldn < 60 dBA		Ldn < 60 dBA		Ldn < 75 dBA
2. Hospital, Nursing Home		$L10 \leq 55$ dBA		55<L10≤65 dBA		65<L10≤80 dBA		L10>80dBA	
3. Residence, residential hotel or motel	7 am to 10 pm	L10≤65dBA		65<L10≤70 dBA		70<L10≤80 dBA		L10>80dBA	
	10 pm to 7 am	L10≤55dBA		55<L10≤70 dBA		70<L10≤80 dBA		L10>80dBA	
4. School, museum, library, court house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM- 10 PM)		Same as Residential Day (7 AM –10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM –10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Source: New York City Department of Environmental Protection (adopted policy 1983).

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more;

1 Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

2 Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and nursing homes.

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

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

Table 2.9-3 - CEQR TM: Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with Proposed Project	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Attenuation[1]	(i) 28 dB(A)	(ii) 31 dB(A)	(iii) 33 dB(A)	(iv) 35 dB(A)	$36 + (L_{10} - 80)^2$ dB(A)

Source: New York City of Environmental Protection

Notes:

1 The above composite window-wall attenuation values are for residential dwellings. Commercial and office spaces/meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

2 Required attenuation values increase 1 dB(A) increments for L_{10} values greater than 80 dBA.

The Proposed Actions include the mapping of an MX district on Projected Development Site 1. Special noise regulations apply to residential uses in special mixed-use zoning districts pursuant to NYC Zoning Resolution (ZR) §132-32, as follows:

In Special Mixed-Use Districts, all new dwelling units shall be provided with a minimum 35dB(A) of window wall attenuation to maintain an interior noise level of 45dB(A) or less, with windows

closed, and shall provide an alternate means of ventilation. However, upon application to the Office of Environmental Remediation (OER) by the owner of the affected building, consistent with its authority under the provisions of Section 11-15 (Environmental Requirements) with respect to (E) designations, OER may modify the requirements of this Section, based upon new information, additional facts or updated standards, as applicable, provided that such modification is equally protective. In such instances, OER shall provide the Department of Buildings with notice of such modification, stating that it does not object to the issuance of a building permit, or temporary or final certificate of occupancy.

2.9-4 – Measurement Location and Equipment

Because the predominant noise sources in the area of the Proposed Project consist of vehicular traffic, noise monitoring was conducted during peak weekday vehicular travel periods (AM, Midday, PM) on a typical midweek day. Pursuant to *2020 CEQR Technical Manual* Methodology, measurements were conducted for a 20-minute period during each of the peak periods at each monitoring location at the development site: Location One (1) was at ground level at the center of the Broadway frontage; Location Two (2) at ground level at the center of the 11th Street frontage; Location Three (3) was at ground level on the 12th Street frontage. The noise monitoring locations are shown in Figure 2.9-1 and Photograph Nos. 2.9-1, 2.9-2, and 2.9-3 (all of which are appended to the end of this Section).

Noise monitoring was conducted using a using Larson Davis LxT Type I sound level meter with wind screen. The monitor was placed on a tripod at a height of approximately four feet above the ground, away from any other noise-reflective surfaces. The monitor was calibrated prior to and following each monitoring session. Periods of peak vehicular traffic around the Affected Area constitute a worst-case condition for noise. Noise meter calibration certification and back up data are provided in the Noise Appendix of this EAS.

2.9-4 – Measurement Conditions

Monitoring was conducted during typical midweek conditions, on Tuesday, September 10th, 2019. The weather was dry with intermittent rain and wind speeds were moderate during all monitoring periods. The sound meter was calibrated before and after each monitoring session.

2.9-5 – Existing Conditions

Based on the noise measurements, the predominant source of noise is vehicular traffic.

Tables 2.9-4 through 2.9-6 below contains the results for the measurements taken at the Affected Area:

Table 2.9-4 – Noise Levels at Monitoring Location 1, Tuesday September 10, 2019

Time	7:33 am – 7:53 am	12:00 pm – 12:20 pm	4:30 pm – 4:50 pm
L_{max}	91.0	83.4	84.5
L_{10}	69.2	69.8	66.4
L_{eq}	66.9	67.1	64.2
L_{50}	61.6	64.0	61.1
L_{90}	57.3	60.3	57.4
L_{min}	54.9	58.2	55.4

Note(s): Bold denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Table 2.9-5 – Noise Levels at Monitoring Location 2, Tuesday September 10, 2019

Time	7:55 am – 8:15 am	12:22 pm – 12:42 pm	4:53 pm – 5:13 pm
L_{max}	91.3	81.2	75.1
L_{10}	62.6	65.6	62.9
L_{eq}	61.3	63.8	59.9
L_{50}	57.3	58.7	55.7
L_{90}	53.7	55.4	53.8
L_{min}	51.3	53.1	52.3

Note(s): Bold denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Table 2.9-6 – Noise Levels at Monitoring Location 3, Tuesday September 10, 2019

Time	8:17 am – 8:37 am	12:46 pm – 1:07 pm	5:24 pm – 5:44 pm
L_{max}	78.9	80.0	76.2
L_{10}	59.5	61.5	59.5
L_{eq}	57.6	59.5	56.8
L_{50}	54.1	52.6	54.4
L_{90}	50.4	50.1	51.3
L_{min}	48.8	48.3	49.2

Note(s): Bold denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Tables 2.9-7 through 2.9-9 below contains the traffic counts and vehicle classifications during each monitoring period for 20 minutes:

Table 2.9-7 – Traffic Volumes and Vehicle Classifications at Monitoring Location 1, Tuesday September 10, 2019

Vehicle Type	7:55 am – 8:15 am	12:22 pm – 12:42 pm	4:53 pm – 5:13 pm
Car/ Taxi	26	41	17
Van/Light Truck/SUV	37	47	18
Medium Truck	5	1	4
Heavy Truck	4	3	1
Bus	12	3	2
Train	0	0	0

Table 2.9-8 – Traffic Volumes and Vehicle Classifications at Monitoring Location 2, Tuesday September 10, 2019

Vehicle Type	7:55 am – 8:15 am	12:22 pm – 12:42 pm	4:53 pm – 5:13 pm
Car/ Taxi	16	16	12
Van/Light Truck/SUV	20	12	14
Medium Truck	1	6	1
Heavy Truck	2	2	0
Bus	1	1	1
Train	0	0	0

Table 2.9-9 – Traffic Volumes and Vehicle Classifications at Monitoring Location 3, Tuesday September 10, 2019

Vehicle Type	8:17 am – 8:37 am	12:46 pm – 1:07 pm	5:24 pm – 5:44 pm
Car/ Taxi	2	8	7
Van/Light Truck/SUV	1	6	4
Medium Truck	1	1	1
Heavy Truck	0	1	1
Bus	0	2	0
Train	0	0	0

2.9-6 – Stationary Sources

It is assumed that the building mechanical systems (i.e., HVAC systems) 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.

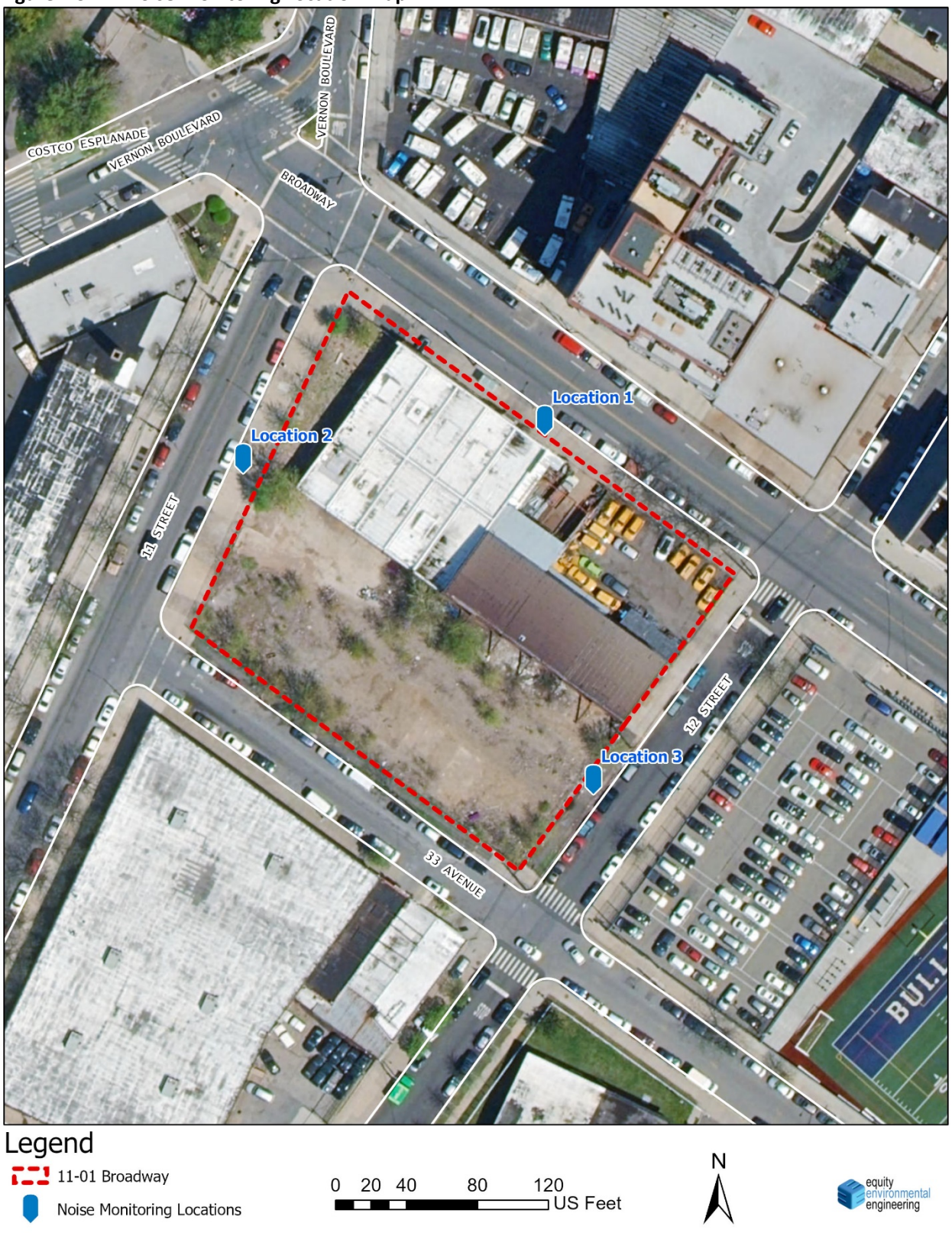
2.9-7 – Determination of Impacts/Building Attenuation Requirements

The *2020 CEQR Technical Manual* **Table 2.9-2** contains noise exposure guidelines. For a residential use such as would occur under the Proposed Actions, an L_{10} of between 65 and 70 dB(A) is identified as marginally acceptable general external exposure. An L_{10} of between 70 and 80 dB(A) is identified as marginally unacceptable general external exposure. The highest recorded L_{10} at Location One (1) of the development site was 69.8 dB(A) during the midday monitoring period. The highest recorded L_{10} at Location Two (2) of the development site was 65.6 dB(A) during the midday monitoring period. The highest recorded L_{10} at Location Three (3) of the development site was 61.5 dB(A) during the midday monitoring period. As such, residential uses at Projected Development Site 1 under the Future With-Action Condition would experience general external noise exposure at a marginally acceptable level and there would be no potential for significant adverse impacts related to ambient noise.

As all measured noise levels are below 70 dBA, no noise mitigation would be required for the Proposed Actions. As noted above, pursuant to ZR §123-32, in Special Mixed Use Districts, all new dwelling units shall be provided with a minimum 35dB(A) of window wall attenuation to maintain an interior noise level of 45dB(A) or less, with windows closed, and shall provide an alternate means of ventilation. However, upon application to OER by the owner of the affected building, OER may modify the requirements of this Section, based upon new information, additional facts or updated standards, as

applicable, provided that such modification is equally protective. The Proposed Action would not result in any potentially significant adverse stationary or mobile source noise impacts, and further assessment is not warranted.

Figure 2.9-1 – Noise Monitoring Location Map



Photograph No. 2.9-1 – Noise Monitoring Location 1 (Broadway)



Photograph No. 2.9-2 – Noise Monitoring Location 2 (11th Street)



Photograph No. 2.9-3 – Noise Monitoring Location 2 (12th Street)



APPENDICES

WRP APPENDIX

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)* which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: _____

Name of Applicant Representative: _____

Address: _____

Telephone: _____ Email: _____

Project site owner (if different than above): _____

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

2. Purpose of activity

C. PROJECT LOCATION

Borough: Queens Tax Block/Lot(s): Block 316, Lots 1 and 13

Street Address: 11-01 33rd Avenue

Name of water body (if located on the waterfront): N/A

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☑ Yes ☐ No

☐	City Map Amendment	☐	Zoning Certification	☐	Concession
☑	Zoning Map Amendment	☐	Zoning Authorizations	☐	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: _____

Board of Standards and Appeals ☐ Yes ☑ No

☐ Variance (use)
☐ Variance (bulk)
☐ Special Permit

(if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

☐	Legislation	☐	Funding for Construction, specify: _____
☐	Rulemaking	☐	Policy or Plan, specify: _____
☐	Construction of Public Facilities	☐	Funding of Program, specify: _____
☐	384 (b) (4) Approval	☐	Permits, specify: _____
☑	Other, explain: DOB Building Permit		

State Actions/Approvals/Funding

☐ State permit or license, specify Agency: _____ Permit type and number: _____
☐ Funding for Construction, specify: _____
☐ Funding of a Program, specify: _____
☐ Other, explain: _____

Federal Actions/Approvals/Funding

☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
☐ Funding for Construction, specify: _____
☐ Funding of a Program, specify: _____
☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☑ Yes ☐ No

E. LOCATION QUESTIONS

1.	Does the project require a waterfront site?	☐ Yes	☑ No
2.	Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters?	☐ Yes	☑ No
3.	Is the project located on publicly owned land or receiving public assistance?	☐ Yes	☑ No
4.	Is the project located within a FEMA 1% annual chance floodplain? *(6.2)*	☑ Yes	☐ No
5.	Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)*	☐ Yes	☑ No
6.	Is the project located adjacent to or within a special area designation? See *Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).*	☐ Yes	☑ No

- ☐ Significant Maritime and Industrial Area (SMIA) *(2.1)*
- ☐ Special Natural Waterfront Area (SNWA) *(4.1)*
- ☐ Priority Maritime Activity Zone (PMAZ) *(3.5)*
- ☐ Recognized Ecological Complex (REC) *(4.4)*
- ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (2.2, 4.2)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☑	☐	☐
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☑	☐	☐
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☐	☐	☑
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☑	☐	☐
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☑	☐	☐

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☐	☐	☑
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☐	☐	☑
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☐	☐	☑
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☐	☐	☑
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☐	☐	☑
3.1.	Support and encourage in-water recreational activities in suitable locations.	☐	☐	☑
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☐	☐	☑
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☐	☐	☑
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☐	☐	☑
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☐	☐	☑
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☐	☐	☑
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☐	☐	☑
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☐	☐	☑
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☐	☐	☑
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☐	☐	☑
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☐	☐	☑
4.8	Maintain and protect living aquatic resources.	☐	☐	☑

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☐	☐	☑
5.1	Manage direct or indirect discharges to waterbodies.	☐	☐	☑
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☐	☐	☑
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☐	☐	☑
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☐	☐	☑
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☐	☐	☑
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☑	☐	☐
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☑	☐	☐
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☑	☐	☐
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☐	☐	☑
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☑	☐	☐
7.2	Prevent and remediate discharge of petroleum products.	☑	☐	☐
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☐	☐	☑
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☐	☐	☑
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☐	☐	☑
8.3	Provide visual access to the waterfront where physically practical.	☐	☐	☑
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☐	☐	☑

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☐	☐	☑
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☐	☐	☑
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☐	☐	☑
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☐	☐	☑
9.2	Protect and enhance scenic values associated with natural resources.	☐	☐	☑
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☐	☐	☑
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☐	☐	☑
10.2	Protect and preserve archaeological resources and artifacts.	☐	☐	☑

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: John Strauss for Hiram A. Rothkrug, Environmental Studies Corp.

Address: 55 Watermill Road, Great Neck, NY 11021

Telephone: (718) 343-0026 Email: jstrauss@environmentalstudiescorp.com

Applicant/Agent's Signature: John D. Strauss

Date: 7/3/20

NYC Waterfront Revitalization Program - Policy 6.2 Flood Elevation Workhsheet

COMPLETE INSTRUCTIONS ON HOW TO USE THIS WORKSHEET ARE PROVIDED IN THE "CLIMATE CHANGE ADAPTATION GUIDANCE" DOCUMENT AVAILABLE AT www.nyc.gov/wrp

Enter information about the project and site in highlighted cells in Tabs 1-3. Tab 4, "Summary Charts" contains primary results. Tab 5, "0.2%+SLR" produces charts to be used for critical infrastructure or facilities. Tab 6, "Calculations" contains background computations. Appendix A contains tide elevations for station across the city to be used for the elevation of MHHW if a site survey is not available. Non-highlighted cells have been locked.

Background Information	
Project Name	11th Street and Broadway Rezoning
Location	Queens Block 316, Lots 1 and 13
Type(s)	☑ Residential, Commercial, Community Facility Developments ☐ Parkland, Open Space, and Natural Areas ☐ Tidal Wetland Restoration ☐ Critical Infrastructure or Facility ☐ Industrial Uses ☐ Over-water Structures ☐ Shoreline Structures ☑ Transportation ☐ Wastewater Treatment/Drainage ☐ Coastal Protection
Description	The proposed zoning map and text amendments (described below in Section 1.6) would facilitate the development on the Applicant-owned Projected Development Site 1 (Block 316, Lots 1 & 13) with an up to 7-story and cellar, 254,773 gsf/226,556 zsf (4.58 FAR) mixed-use residential, commercial, and light manufacturing building with approximately 205 dwelling units of which 62 would be reserved as affordable pursuant to Mandatory Inclusionary Housing (MIH) Option 2 and 80 accessory parking spaces located in the cellar of the building.
Planned Completion Date	Build Year 2024
Expected Project Lifespan	100 Years

The New York City Waterfront Revitalization Program Climate Change Adaptation Guidance document was developed by the NYC Department of City Planning. It is a guidance document only and is not intended to serve as a substitute for actual regulations. The City disclaims any liability for errors that may be contained herein and shall not be responsible for any damages, consequential or actual, arising out of or in connection with the use of this information. The City reserves the right to update or correct information in this guidance document at any time and without notice.

For technical assistance on using this worksheet, email wrp@planning.nyc.gov, using the message subject "Policy 6.2 Worksheet."

Last update: Sept. 7, 2018

Establish current tidal and flood heights.

	FT (NAVD88)	Feet	Datum	Source
MHHW	2.87	**2.87**	**NAVD88**	*Appnedix A - Horns Hook NOAA VDATUM*
1% flood height	12.00	**12.00**	**NAVD88**	*FEMA FHA Data*
Design flood elevation	9.42	**9.42**	**NAVD88**	*Project Plans*
As relevant:				
0.2% flood height	-->			

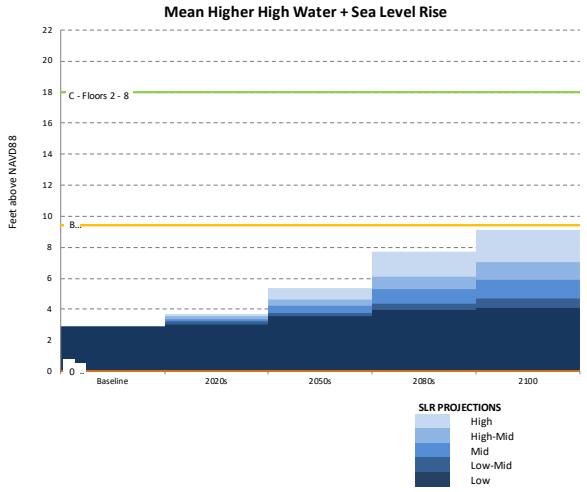
Data will be converted based on the following datums:

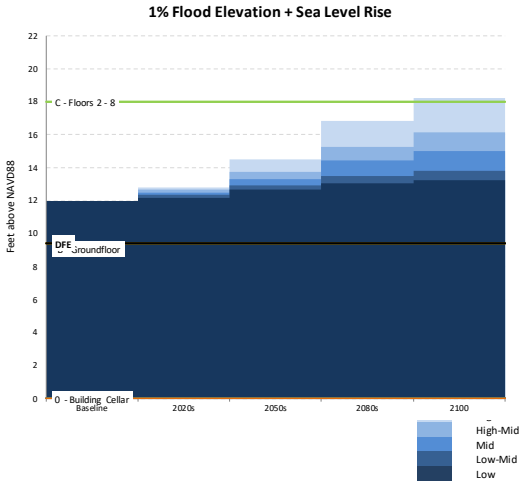
Datum	FT (NAVD88)
NAVD88	*0.00*
NGVD29	*-1.10*
Manhattan Datum	*1.65*
Bronx Datum	*1.51*
Brooklyn Datum (Sewer)	*0.61*
Brooklyn Datum (Highway)	*1.45*
Queens Datum	*1.63*
Richmond Datum	*2.09*

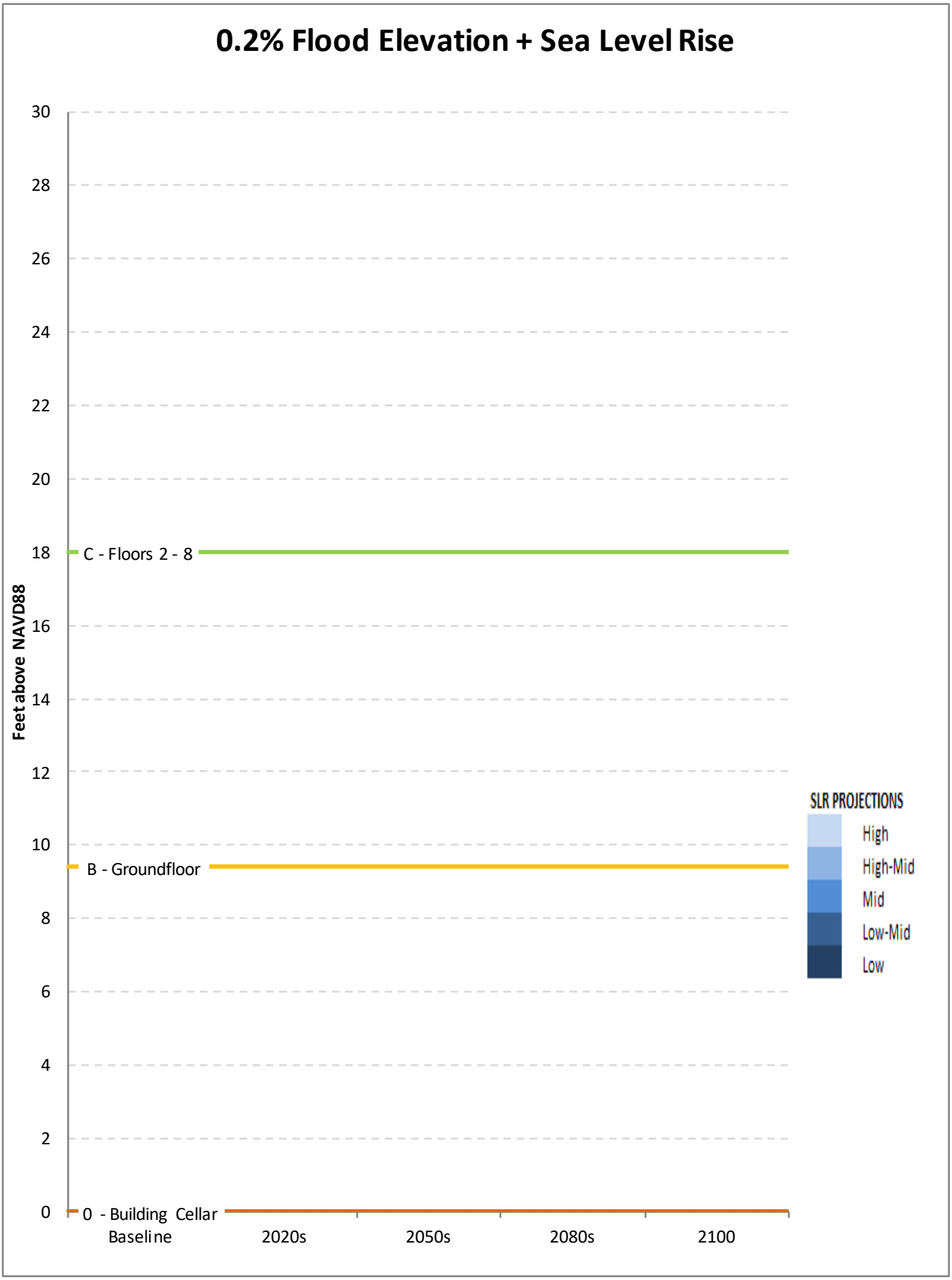
Describe key physical features of the project.

Feature *(enter name)*	Feature Category	Lifespan	Elevation	Units	Datum	Ft	Ft Above NAVD88	Ft Above MHHW	Ft Above 0.2% flood height
A - Building Cellar	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	100 years	0.0	Feet	NAVD88	*0.0*	*0.0*	*-2.9*	*#VALUE!*
The building cellar would be constructed of poured concrete and would be utilized for parking and storage only.									
B - Groundfloor	☑ Vulnerable ☑ Critical ☐ Potentially Hazardous ☐ Other	100 Years	9.4	Feet	NAVD88	*9.4*	*9.4*	*6.6*	*#VALUE!*
The groundfloor would feature commercial and residential lobby uses, as well as all mechnical / utility rooms. The groundfloor will feature steel frame construction and would be dry flood-proofed with removable barriers. Mechanical / utility rooms would be elevated above the 12-foot base flood plane at an elevation of approximately 13 feet.									
C - Floors 2 - 8	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	100 Years	18.0	Feet	NAVD88	*18.0*	*18.0*	*15.1*	*#VALUE!*
Floors 2 through 8 would feature residential uses. The roof of the building would feature auxiliary generators in the event of power loss (in a flooding event or otherwise). These floors will feature steel frame construction.									
	☐ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									
	☐ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									
	☐ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									
	☐ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									
	☐ Vulnerable ☐ Critical ☑ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									

Assess project vulnerability over a range of sea level rise projections.






0.2% Flood Elevation + Sea Level Rise
Feet above NAVD88
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
C - Floors 2 - 8
B - Groundfloor
0 - Building Cellar
Baseline
2020s
2050s
2080s
2100
SLR PROJECTIONS
High
High-Mid
Mid
Low-Mid
Low

	SLR (ft)						SLR (in)					
	Low	Low-Mid	Mid	High-Mid	High			Low	Low-Mid	Mid	High-Mid	High
Baseline	0.00	0.00	0.00	0.00	0.00		**2014**	0	0	0	0	0
2020s	0.17	0.33	0.50	0.67	0.83		**2020s**	2	4	6	8	10
2050s	0.67	0.92	1.33	1.75	2.50		**2050s**	8	11	16	21	30
2080s	1.08	1.50	2.42	3.25	4.83		**2080s**	13	18	29	39	58
2100	1.25	1.83	3.00	4.17	6.25		**2100**	15	22	36	50	75

MHHW+SLR (ft above NAVD88)

	Low	Low-Mid	Mid	High-Mid	High
Baseline	2.87	2.87	2.87	2.87	2.87
2020s	3.04	3.20	3.37	3.54	3.70
2050s	3.54	3.79	4.20	4.62	5.37
2080s	3.95	4.37	5.29	6.12	7.70
2100	4.12	4.70	5.87	7.04	9.12

1%+SLR (ft above NAVD88)

	Low	Low-Mid	Mid	High-Mid	High
Baseline	12.00	12.00	12.00	12.00	12.00
2020s	12.17	12.33	12.50	12.67	12.83
2050s	12.67	12.92	13.33	13.75	14.50
2080s	13.08	13.50	14.42	15.25	16.83
2100	13.25	13.83	15.00	16.17	18.25

0.2%+SLR (ft above NAVD88)

	Low	Low-Mid	Mid	High-Mid	High
Baseline	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2020s	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2050s	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2080s	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2100	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

	0	1
A - Building Cellar	0	0
B - Groundfloor	9	9.42
C - Floors 2 - 8	18	18
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
DFE	9.42	9.42

NOAA Tide Station Data

(to be used only when a site survey is unavailable)

Station ID	*Station Name*	*Source MHHW (Feet, NAVD88)**	*Adjusted MHHW (Feet, NAVD88)**	*Source*
8518687	Queensboro Bridge	2.27	2.60	NOAA Tides and Currents
8530095	Alpine	2.11	2.44	NOAA Tides and Currents
8516614	Glen Cove	3.72	4.05	NOAA Tides and Currents
8516990	Willets Point	3.72	4.05	NOAA Tides and Currents
8518639	Port Morris	3.33	3.66	NOAA Tides and Currents
8518699	Williamsburg Bridge	2.14	2.47	NOAA Tides and Currents
8518750	The Battery	2.28	2.61	NOAA Tides and Currents
8531680	Sandy Hook	2.41	2.74	NOAA Tides and Currents
8518490	New Rochelle	3.71	4.04	NOAA Tides and Currents
8531545	Keyport	2.66	2.99	NOAA Tides and Currents
8516891	Norton Point	2.08	2.41	NOAA VDATUM
8517201	North Channel	2.72	3.05	NOAA Tides and Currents
8517137	Beach Channel	2.10	2.43	NOAA VDATUM
8517756	Kingsborough	2.13	2.46	NOAA VDATUM
8519436	Great Kills	2.22	2.55	NOAA VDATUM
8531142	Port Reading	2.82	3.15	NOAA VDATUM
8519483	Bergen Point	2.56	2.89	NOAA VDATUM
8519050	USCG	2.28	2.61	NOAA Tides and Currents
8518902	Dyckman St	2.01	2.34	NOAA Tides and Currents
8517251	Worlds Fair Marina	3.59	3.92	NOAA VDATUM
8518668	Horns Hook	2.54	2.87	NOAA VDATUM
8518643	Randalls Island	2.60	2.93	NOAA VDATUM
8518526	Throggs Neck	3.68	4.01	NOAA Tides and Currents

* MHHW values include an addition 0.33 feet to account for changes in sea level since the 1983-2001 tidal epoch.



HISTORIC AND CULTURAL RESOURCE APPENDIX

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-Q
Project: BROADWAY AND 11TH ST. REZONING
Date Received: 8/22/2019

Properties with no Architectural or Archaeological significance:
1) 11-01 33 AVENUE, BBL: 4003160001
2) 11-01 BROADWAY, BBL: 4003160013

Gina Santucci 8/22/2019

SIGNATURE DATE
Gina Santucci, Environmental Review Coordinator

File Name: 34457_FSO_DNP_08222019.docx

TRANSPORTATION APPENDIX

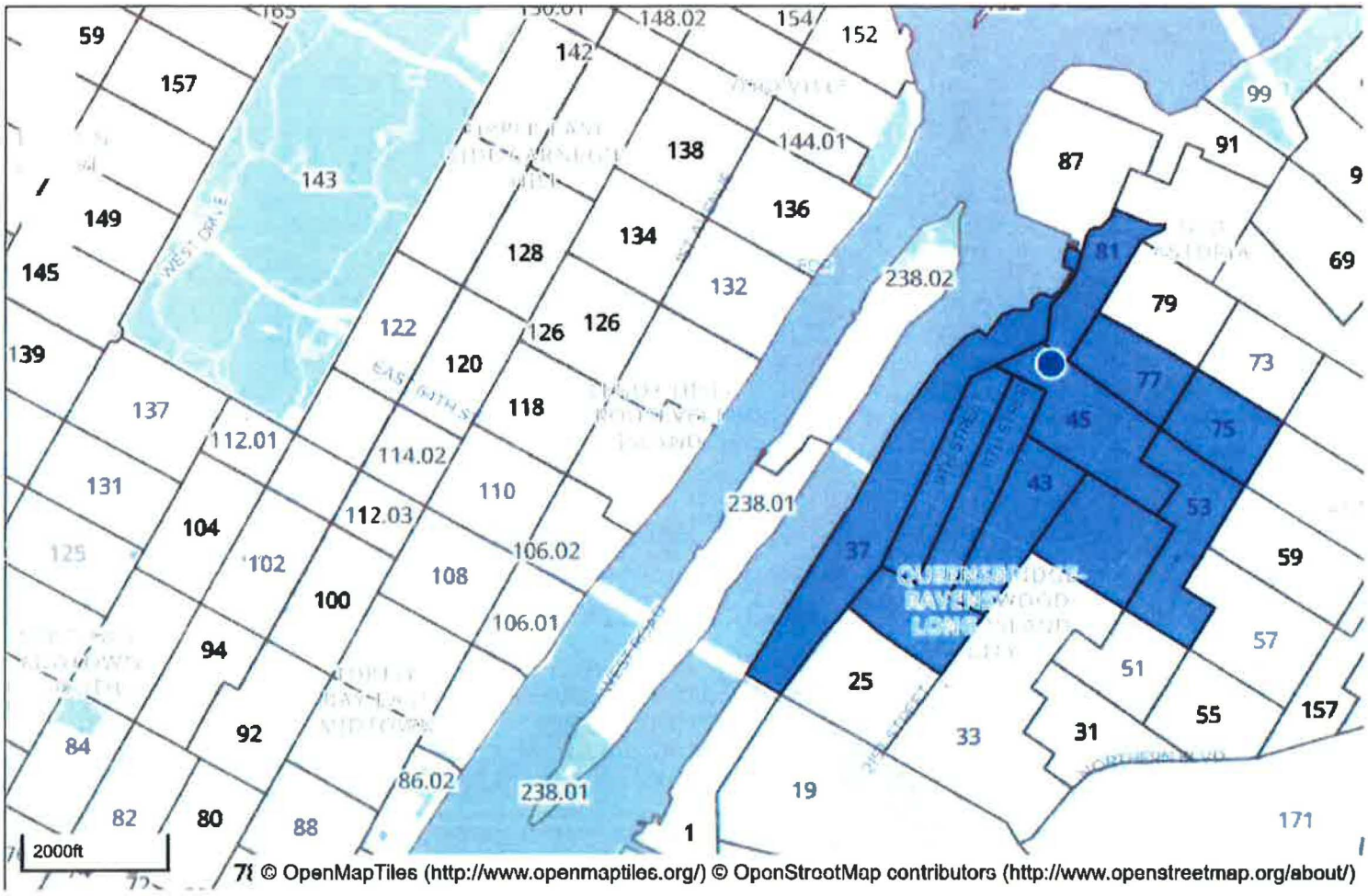
11th Street and Broadway, Astoria Queens New York

Transportation Appendix

Date: March 17, 2021

(http://www1.nyc.gov/site/planning/index.page) Population FactFinder (/)

Census Block | Census Tract | Neighborhood (NTA) | PUMA



Draw

Select individual census tracts to add them to the profile.

Polygon Radius

View Profile

10 Tracts

Advanced Options

Clear Selection

Table 1: Development Program: No-Action, With-Action Conditions and Increment

	No-Action Condition	With-Action Condition	Increment
Proposed Floor Area by Use (GSF)			
Residential	62,119	223,965	+161,846
Commercial Local Retail	0	8,617[2]	+8,617
Grocery Store/Supermarket	0	10,055	+10,055
Light Manufacturing	0	10,014[3]	+10,014
Community Facility	9,303	0	-9,303
Loading Docks (Two Total)	0	2,121	+2,121
TOTAL:	**101,305[1]**	**254,773**	**+153,468**
Residential Dwelling Units			
Market Rate Dwelling Units	62	179	+117
Affordable Dwelling Units	0	45	+45
TOTAL:	**62**	**224**	**+162**
Total Floor Area Ratio (Ratio)	1.40	4.58	+3.18
Maximum Building Height (Feet)	40	85[4]	+45
Accessory Parking (Count)	72	90	+18

Notes:
[1] – Includes accessory spaces (e.g., lobby, storage, hallways, etc.) not accounted for in No-Action Proposed Use GSFs.
[2] – Use Groups 6 through 10 (Local Retail and Artist Studio).
[3] – Use Group 16 (Floral Production, Wine Distributor).
[4] – Includes 10-foot rooftop mechanical bulkhead.

Table 2: Transportation Planning Factors-*Revised*

11th Street and Broadway Astoria, Queens NY

Lots 1 & 13

Land Use:	Residential	Local Retail	Manufacturing	Medical Office
	d.u.	gsf	gsf	gsf
Size/Units:	162	18,672	10,014	-9,303
	(1)	**(1)**	**(5)**	**(4)**
Trip Generation:				
Weekday	8.075	205	4.5	76
Saturday	9.6	240	1.8	39
	per d.u.	per 1,000 gsf	per 1,000 gsf r	1,000 gsf
Linked-Trip:	0%	25%	0%	0%
Temporal Distribution:	**(1)**	**(1)**	**(5)**	**(4)**
AM Peak Hour	10%	3%	14%	11%
MD Peak Hour	5%	19%	19%	13%
PM Peak Hour	11%	10%	17%	9%
Saturday Midday Peak Hou	8%	10%	11.4%	17%
	(2)	**(4)**	**(2a)**	**(4)**
Modal Split :	All	All	All	All
Auto	14.7%	11%	49.3%	62%
Taxi	0.5%	0%	0.2%	7%
Subway	65.6%	3%	25.5%	1%
Bus	3.4%	2%	8.4%	6%
Walk/Other	15.7%	84%	16.6%	24%
Total	100%	100%	100.0%	100%
	(3)	**(3)**	**(5)**	**(4)**
In/Out Splits:	In/Out	In/Out	In/Out	In/Out
AM Peak Hour	20/80	50/50	77/23	62/38
MD Peak Hour	50/50	50/50	50/50	47/53
PM Peak Hour	65/35	50/50	36/64	35/65
Saturday Midday Peak Hou	50/50	50/50	50/50	49/51
Vehicle Occupancy:	**(2&3)**	**(4)**	**(2a&5)**	**(4)**
Auto	1.07	1.4	1.085	1.5
Taxi	1.4	1.4	2	1.5
Truck Trip Generation:	**(1)**	**(1)**	**(5)**	**(6)**
Weekday	0.06	0.35	0.52	0.29
Saturday	0.02	0.04	0.03	0.29
	per d.u.	per 1,000 gsf	per 1,000 gsf	er 1,000 gsf
	(1)	**(1)**	**(5)**	**(6)**
AM Peak Hour	12%	8%	14%	3%
MD Peak Hour	9%	11%	8.6%	11%
PM Peak Hour	2%	2%	1%	1%
Saturday Midday Peak Hou	9%	11%	8.6%	0%
AM/MD/PM/Saturday Midday	50/50	50/50	50/50	50/50

Sources:

(1)-2020 CEQR Technical Manual, Table 16-2.

(2)-2014-2018 American Community Survey (ACS)-Journey-To-Work (JTW) data for Census Tract #'s 37, 39, 43, 45, 47, 53, 75, 77, 81 and 85 in Queens N.Y.

(2a)-2012-2016 American Community Survey (ACS)-Reverse-Journey-To-Work (RJTW) data for Census Tract #'s 37, 39, 43, 45, 47, 53, 75, 77, 81 & 85 in Queens N.Y.

(3)-Astoria Cove FEIS, Table-13-4.

(4)-data is based on NYCDOT Queens NTZ retail/medical office survey area.

(5)-Lower Concourse Rezoning and Related Actions FEIS, Table 3.15-8.

(6)-East New York Rezoning FEIS, Table 13-8.

Table 3 : Estimated Person Trips_*Revised*

11th Street and Broadway Astoria, Queens NY

Lots 1 & 13

Land Use:	Residential	Local Retail	Manufacturing	Medical Office	Net Person Trips	*Subway* *Bus* *Walk*
	d.u.	gsf	gsf	gsf		
Size/Units:	162	18,672	10,014	-9,303		*Pedestrian*
Peak hour Trips						*Volumes*
AM Peak Hour	131	86	6	-78	145	
Midday Peak Hour	65	545	9	-92	528	
PM Peak Hour	144	287	8	-64	375	
Saturday Midday Peak Hour	124	336	2	-62	401	
Person Trips:						
AM Peak Hour						
Auto	19	9	3	-48	-17	
Taxi	1	0	0	-5	-5	
Subway	86	3	2	-1	89	89
Bus	4	2	1	-5	2	2
Walk/Other	21	72	1	-19	75	75
Total	131	86	7	-78	145	167
Midday Peak Hour						
Auto	10	60	4	-57	17	
Taxi	0	0	0	-6	-6	
Subway	43	16	2	-1	61	61
Bus	2	11	1	-6	8	8
Walk/Other	10	458	1	-22	448	448
Total	65	545	9	-92	528	517
PM Peak Hour						
Auto	21	32	4	-39	17	
Taxi	1	0	0	-4	-4	
Subway	94	9	2	-1	104	104
Bus	5	6	1	-4	8	8
Walk/Other	23	241	1	-15	249	249
Total	144	287	8	-64	375	362
Saturday Midday Peak Hour						
Auto	18	37	1	-38	18	
Taxi	1	0	0	-4	-4	
Subway	82	10	1	-1	92	92
Bus	4	7	0	-4	7	7
Walk/Other	20	282	0	-15	287	287
Total	124	336	2	-62	401	386

Table 4 : Estimated Vehicular Trips_*Revised*

11th Street and Broadway Astoria, Queens NY

Lots 1 & 13

Land Use:	Residential	Local Retail	Manufacturing	Medical Office	Net Vehicle Trips
	d.u.	gsf	gsf	gsf	
Size/Units:	162	18,672	10,014	-9,303	
AM Peak Hour					
Auto (Total)	18	6	3	-32	-5
Taxi	0	0	0	-4	-4
Taxi (Balanced)	0	0	0	-8	-8
Truck	1	1	1	0	3
Truck(Balanced)	2	2	2	0	6
Total	20	8	5	-40	**-7**
Total Inbound/Outbound Trip	***5/15***	***4/4***	***3/2***	***-24/-16***	***-12/+5***
Midday Peak Hour					
Auto (Total)	9	43	4	-38	18
Taxi	0	0	0	-4	-4
Taxi (Balanced)	0	0	0	-8	-8
Truck	1	1	0	0	2
Truck(Balanced)	2	2	0	0	4
Total	11	45	4	-46	**14**
Total Inbound/Outbound Trip	***5/6***	***23/22***	***2/2***	***-22/-24***	***+8/+6***
PM Peak Hour					
Auto (Total)	20	23	4	-26	21
Taxi	1	0	0	-3	-2
Taxi (Balanced)	2	0	0	-6	-4
Truck	0	0	0	0	0
Truck(Balanced)	0	0	0	0	0
Total	22	23	4	-32	**17**
Total Inbound/Outbound Trip	***14/8***	***11/12***	***1/3***	***-12/-20***	***+14/+3***
Saturday Midday Peak Hour					
Auto (Total)	17	26	1	-25	19
Taxi	0	0	0	-3	-3
Taxi (Balanced)	0	0	0	-6	-6
Truck	0	0	0	0	0
Truck(Balanced)	0	0	0	0	0
Total	17	26	1	-31	**13**
Total Inbound/Outbound Trip	***9/8***	***13/13***	***1/0***	***-15/-16***	***+8/+5***

Exhibit 1

Modal Split Information

2014-2018 ACS 5-YEAR Journey-to-Work (JTW) for Census Tract #'s 37, 39 43, 45, 47, 53, 75, 77, 81, and 85 in Queens, NY

11-0 33rd Avenue. Astoria Queens New York-11th street and Broadway

2014-2018 ACS 5-Year, Journey-to-Work (JTW):

Census Tract	Total Workers	Car or Van Drive-Alone	Carpool	Bus	Street Car	Subway	R.R.	Ferry	Taxi	Motor cycle	Bi cycle	Walk	Other Means	Worked @ Home	Total
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	657	114	12	75	0	327	0	0	0	0	15	74	0	40	657
43	964	190	33	121	0	440	20	0	0	0	21	62	8	69	964
45	1704	249	77	76	0	1027	11	0	0	7	16	151	15	75	1704
47	1713	84	8	80	0	1323	24	0	0	0	11	139	0	44	1713
53	2927	259	0	25	0	2316	35	0	12	0	66	171	0	43	2927
75	2440	356	13	0	0	1643	19	0	9	0	70	202	0	128	2440
77	1081	147	1	14	0	636	0	25	48	0	55	121	0	34	1081
81	834	197	40	22	0	439	0	15	0	5	13	87	4	12	834
85	433	92	7	26	0	209	12	0	0	0	28	55	4	0	433
Total	12,753	1,688	191	439	0	8,360	121	40	69	12	295	1,062	31	445	12,753
		0.132	*0.015*	*0.034*	*0.00*	*0.656*	*0.009*	*0.00*	*0.01*	*0.00*	*0.02*	*0.083*	*0.00*	*0.035*	**1.00**

Exhibit 2

Vehicle Occupancy Information

Census Tract	Total	Drove alone	Total	carpool 2person	3 Person	4 Person	5 or 6 Person	7 or mor Person	Total
37	0	0	0	0	0	0	0	0	0
39	126	114	12	12	0	0	0	0	12
43	223	190	33	0	0	0	0	33	33
45	326	249	77	44	33	0	0	0	77
47	92	84	8	8	0	0	0	0	8
53	259	259	0	0	0	0	0	0	0
75	369	356	13	0	0	0	13	0	13
77	148	147	1	0	1	0	0	0	1
81	237	197	40	40	0	0	0	0	40
85	99	92	7	0	4	0	3	0	7
otal Perso	1879	1688	191	104	38	0	16	33	191
Total cars		1688		52	13	0	3	5	1760

Modal Split summary

Auto	**0.147**
Taxi	**0.005**
Bus	**0.034**
Subway	**0.656**
Walk	**0.083**
Other	**0.074**
Total	**1.000**

Auto Occupancy Rate= 1.07

Exhibit 3

Modal Split Data

2012-2016 ACS 5-YEAR Reverse-Journey-to-Work (R JTW) for Census Tract #'s 37, 39, 43, 45, 47, 53, 75, 77, 81, and 85 in Queens NY

11th Street and Broadway Astoria, Queens New York

2012-2016 ACS 5-Year, Reverse-Journey-to-Work:

Census Tract	Total Workers	Car or Van Drive-Alone	Carpool	Bus	Street Car	Subway	R.R.	Ferry	Bicycle	walk	taxi	motor cycle	Other Means	Worked @ Home	Total
37	620	355	40	30	0	145	20	0	0	30	0	0	0	0	620
39	869	385	30	15	0	320	10	0	45	4	0	0	15	45	869
43	470	205	50	50	0	100	0	0	15	20	0	0	0	30	470
45	705	230	85	35	0	150	15	0	50	55	0	0	0	85	705
47	340	85	15	10	0	175	10	0	0	15	0	0	0	30	340
53	490	185	45	70	0	55	0	0	0	40	0	0	0	95	490
75	454	70	4	65	0	125	0	0	0	65	0	0	0	125	454
77	570	250	15	25	0	120	0	0	25	50	0	0	40	45	570
81	375	180	25	70	0	75	0	0	0	10	0	0	0	15	375
85	1425	720	140	160	0	270	20	0	15	35	10	0	55	0	1,425
Total	6,318	2,665	449	530	0	1,535	75	0	150	324	10	0	110	470	6,318
% Mode of Travel		*0.422*	*0.071*	*0.084*	*0.00*	*0.243*	*0.012*	*0.00*	*0.02*	*0.05*	*0.00*	*0.000*	*0.02*	*0.074*	*1.00*

Exhibit 4

Vehicle Occupancy Rate Data

2012-2016 ACS 5-YEAR Reverse-Journey-to-Work (R JTW) for Census Tract #'s 37, 39, 43, 45, 47, 53, 75, 77, 81, and 85 in Queens NY

2012-2016 ACS-5 Year (RJTW), Vehicle Occupancy Rate:

Census Tract	Total Drove Alone & Car Pool	Drove alone	Total car pool	2person carpool	3 Person carpool	4 Person carpool	5 or 6 Person carpool	7 or more Person carpool	Total
37	395	355	40	40	0	0	0	0	40
39	415	385	30	30	0	0	0	0	30
43	255	205	50	50	0	0	0	0	50
45	315	230	85	60	0	15	10	0	85
47	100	85	15	15	0	0	0	0	15
53	230	185	45	25	0	20	0	0	45
75	74	70	4	4	0	0	0	0	4
77	265	250	15	15	0	0	0	0	15
81	205	180	25	25	0	0	0	0	25
85	860	720	140	105	20	0	15	0	140
Persons	3,114	2,665	449	369	20	35	25	0	449
Cars		2665		185	7	9	5	0	2,869

Vehicle Occupancy = 1.085

Modal Split summary

Auto	0.493
Taxi	0.002
Bus	0.084
Subway	0.255
Walk	0.051
Other	0.116
Total	1.000

TABLE 13-8
Transportation Planning Factors

Land Use:	Local Retail	Office	Residential (Market Rate)	Residential (Affordable)	Hotel	Light Industrial	Restaurant	Auto Repair	Auto Dealership	Warehouse	ENESH (Entertainment)	Pre-K (Student) (14.23)
Size/Units:	681,436 gsf	132,695 gsf	2,954 DU	3,556 DU	416 Rooms	729,035 gsf	51,408 gsf	118,345 gsf	18,000 gsf	73,170 gsf	28,000 gsf	263 Students
Trip Generation:	(1)	(1)	(1)	(1)	(1)	(2)	(3)	(2)	(6)	(7)	(9,10)	(12)
Weekday	205	16.0	8.075	8.075	9.6	10.7	173.0	18.42	2.65	4.87	205	2
Saturday	240	3.9	9,600	9,600	9.4	2.2	139.0	13.42	2.65	1.68	271	0
	per 1,000 sf	per 1,000 sf	per DU	per DU	per room	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per Student
Temporal Distribution:	(1)	(1)	(1)	(1)	(1)	(2)	(5)	(2)	(6)	(7,8)	(9,11)	(12)
AM	8.0%	12.0%	10.0%	10.0%	8.0%	13.2%	1.0%	13.3%	12.0%	11.8%	3.0%	50.0%
MD	13.0%	15.0%	5.7%	5.0%	14.0%	13.0%	13.7%	11.0%	12.0%	12.0%	17.0%	0.0%
PM	10.0%	14.0%	11.0%	11.0%	13.0%	14.2%	7.7%	14.2%	9.2%	12.6%	10.0%	5.0%
Sat MD	10.0%	17.0%	8.0%	8.0%	8.0%	10.7%	11.6%	13.7%	12.0%	10.6%	12.0%	0.0%
Modal Splits:	(2)	(5) (20)	(4)	(4)	(2)	(3) (20)	(5)	(2)	(6)	(8)	(5)	(12)
	All Periods	AM/PM/SAT MD	All Periods	All Periods	All Periods	AM/PM/SAT MD	All Periods	All Periods	All Periods	All Periods	All Periods	AM/MD/SAT PM
Auto	3.0%	45.3% 2.0%	39.7%	18.3%	80.1%	45.3% 2.0%	30.0%	85.0%	100.0%	91.0%	4.0%	15.0% 56.3%
Taxi	1.0%	0.4% 3.0%	3.5%	0.4%	12.3%	0.4% 3.0%	5.0%	5.0%	0.0%	2.0%	3.0%	0.0% 0.0%
Subway/Railroad	3.0%	26.5% 6.0%	54.3%	58.4%	18.8%	35.9% 6.0%	15.0%	3.0%	0.0%	28.0%	5.0%	3.3% 12.4%
Bus	6.0%	15.4% 6.0%	8.3%	17.9%	5.5%	15.4% 6.0%	15.0%	1.0%	0.0%	7.0%	5.0%	1.7% 6.4%
School Bus	0.0%	0.0% 0.0%	0.0%	0.0%	0.0%	0.0% 0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	55.0% 0.5%
Walk/Other	85.0%	12.0% 83.0%	8.2%	7.1%	33.3%	12.0% 83.0%	35.0%	6.0%	0.0%	12.0%	83.0%	25.0% 25.0%
	100.0%	100.0% 100%	100.0%	100.0%	100.0%	100.0% 100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0% 100.0%
	(2)	(2)	(2)	(2)	(2)	(2)	(5)	(2)	(6)	(8)	(9,11)	(12)
In/Out Splits:	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM	50% 50%	96.0% 4.0%	15.0% 85.0%	15.0% 85.0%	41% 59%	88% 12%	94% 6%	65% 35%	67% 33%	58% 12%	45% 55%	100% 0%
MD	50% 50%	39.0% 61.0%	50.0% 50.0%	50.0% 50.0%	68% 32%	50% 50%	55% 35%	50% 50%	50% 50%	50% 50%	46% 54%	0% 0%
PM	50% 50%	5.0% 95.0%	70.0% 30.0%	70.0% 30.0%	58% 41%	12% 88%	65% 35%	50% 50%	15% 85%	12% 88%	47% 53%	0% 100%
Sat MD	55% 45%	60.0% 40.0%	50.0% 50.0%	50.0% 50.0%	55% 44%	47% 53%	65% 35%	50% 50%	50% 50%	50% 30%	46% 54%	0% 0%
			(2,4,18)	(2,4,18)								
Vehicle Occupancy:	(2)	(2,3)	AM/PM MD/SAT	AM/PM MD/SAT	(2)	(2)	(5)	(2)	(8)	(8)	(9,11)	(12)
Auto	1.60	1.12	1.065 1.69	1.064 1.46	1.60	1.20	2.2	1.30	1.30	1.20	1.65	1.50
Taxi	1.20	1.20	1.30 1.30	1.30 1.30	1.40	1.20	2.5	1.30	1.50	1.20	1.40	1.50
School Bus												55.00
Truck Trip Generation:	(1)	(1)	(1)	(1)	(21)	(2)	(5)	(2)	(6)	(8)	(9,11)	(15)
Weekday	0.36	0.91	0.06	0.06	0.08	0.67	3.60	0.88	0.15	0.67	0.05	0.01
Saturday	0.02	0.01	0.02	0.02	0.01	0.67	3.60	0.88	0.15	0.67	0.04	0.05
	per 1,000 sf	per 1,000 sf	per DU	per DU	per room	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per Student
	(2)	(2)	(2)	(2)	(21)	(2)	(5)	(2)	(6)	(8)	(9,11)	(15)
AM	8.0%	10.0%	12.0%	12.0%	12.0%	14.0%	6.0%	14.0%	8.0%	14.0%	10.0%	4.8%
MD	11.0%	12.0%	8.0%	8.0%	8.0%	9.0%	6.0%	8.0%	11.0%	8.0%	8.0%	11.0%
PM	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	5.0%	1.0%
Sat MD	12.0%	11.0%	9.0%	8.0%	8.0%	0.0%	0.0%	0.0%	11.0%	0.0%	10.0%	0.0%
	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM/MD/PM	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	53.0% 50.0%

This table has been revised for the FEIS.

TABLE 13-8 (continued)
Transportation Planning Factors

Land Use:	Pre-K (Staff) (23)	Pre-K (Parent) (12,14,23)	Day Care Center	Community Center	House of Worship	Medical Office	PS/ES School (Grade K-4 Students)	PS/ES School (Grade 5-7 Students)	PS/MS School (Grade 8	PS/HS School (Staff)	PS/HS School (Parents) (13,14)
Size/Units:	24 Staff	46 Parents	28,302 gsf	223,318 gsf	7,873 gsf	91,981 gsf	463 Students	318 Students	101 Students	82 Staff	332 Parents
Trip Generation:	(12)	(12)	(15)	(1)	(16)	(17)	(12)	(12)	(12)	(12)	(12)
Weekday	2	4	33	44.7	19.18	127	2	2	2	2	4
Saturday	0	0	2	22.3	21.83	117	0	0	0	0	0
	per Staff	per Student	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per Student	per Student	per Student	per Staff	per Student
Temporal Distribution:	(12), (22)	(12)	(15)	(1)	(16)	(17)	(12)	(12)	(12)	(12)	(12)
AM	50.0%	50.0%	16.0%	4.0%	7.5%	4.0%	50.0%	50.0%	50.0%	50.0%	50.0%
MD	0.0%	0.0%	5.0%	9.0%	4.0%	11.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PM	5.0%	5.0%	19.0%	5.0%	7.2%	12.0%	5.0%	5.0%	5.0%	50.0%	5.0%
Sat/MD	0.0%	0.0%	12.0%	9.0%	15.3%	11.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	(12)	(12)	(18)	(18)	(18)	(17)	(12)	(12)	(12)	(12)	(12)
Modal Split:	All Periods	All Periods	All Periods	All Periods	All Periods	All Periods	AM/MD/SAT PM	AM/MD/SAT PM	All Periods	All Periods	All Periods
Auto	42.0%	0.0%	5.0%	5.0%	5.0%	80%	15.0% 56.3%	15.0% 30.0%	15.0%	42.0%	0.0%
Taxi	0.0%	0.0%	1.0%	1.0%	1.0%	2%	0.0% 0.0%	0.0% 0.0%	0.0%	0.0%	0.0%
Subway/Rail/Trolley	39.0%	0.0%	3.0%	3.0%	3.0%	3%	3.3% 12.4%	6.7% 13.4%	40.0%	39.0%	0.0%
Bus	19.0%	0.0%	6.0%	6.0%	6.0%	18%	1.7% 6.4%	3.3% 5.5%	20.0%	19.0%	0.0%
School Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0%	55.0% 0.0%	25.0% 0.0%	0.0%	0.0%	0.0%
Walk/Other	0.0%	100.0%	85.0%	85.0%	85.0%	17%	25.0% 25.0%	50.0% 50.0%	25.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	130%	100.0% 100.0%	100.0% 100.0%	100.0%	100.0%	100.0%
	(13)	(12)	(15)	(16)	(16)	(17)	(12)	(12)	(11)	(12)	(12)
In/Out Split:	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM	100% 0%	50% 50%	53% 47%	61% 39%	54% 46%	89% 11%	100% 0%	100% 0%	100% 0%	100% 0%	50% 50%
MD	0% 0%	0% 0%	50% 50%	55% 45%	50% 50%	51% 49%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%
PM	0% 100%	50% 50%	47% 53%	29% 71%	52% 48%	48% 52%	0% 100%	0% 100%	0% 100%	0% 100%	50% 50%
Sat MD	0% 0%	0% 0%	47% 53%	49% 51%	71% 29%	41% 59%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%
						(17)					
Vehicle Occupancy:	(12)		(15)	(16)	(16)	Wkdy Sat	(12)	(12)	(12)	(12)	
Auto	1.20	N/A	1.65	1.65	1.65	1.50 2.60	1.30	1.30	1.30	1.10	N/A
Taxi	1.20	N/A	1.40	1.30	1.50	1.50 2.60	1.30	1.30	1.30	1.20	N/A
School Bus							35.00	35.00	35.00		
Truck Trip Generation:			(15)	(16)	(16)	(16)	(15)	(15)	(15)		
Weekday	N/A	N/A	0.07	0.23	0.29	0.29	0.03	0.03	0.03	N/A	N/A
Saturday	N/A	N/A	0.00	0.29	0.29	0.29	0.03	0.03	0.03	N/A	N/A
	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf	per Student	per Student	per Student		
			(15)	(16)	(16)	(16)	(15)	(15)	(15)		
AM	N/A	N/A	9.6%	9.6%	9.6%	3.0%	9.6%	9.6%	9.6%	N/A	N/A
MD	N/A	N/A	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	N/A	N/A
PM	N/A	N/A	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	N/A	N/A
Sat MD	N/A	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	N/A
	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out	In Out
AM/MD/PM	N/A N/A	N/A N/A	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%	N/A N/A	N/A N/A

This table has been revised for the FEIS.

TABLE 13-8 (continued)
Transportation Planning Factors

Notes:

(1) Based on data from *City Environmental Quality Review (CEQR) Technical Manual*, 2014.
(2) Based on data from *Broadway Triangle FEIS*, 2009.
(3) Based on AASHTO CTPP Reverse Journey to Work 5-Year data for tracts 355.02, 367, 908, 1144, 1146, 1150, 1152, 1166, 1168, 1170, 1172.01, 1174, 1178, 1184, 1192, 1194, 1196 and 1198.
(4) Based on ACS-PUMA data 2008-2012 Journey to Work 5-Year data for PUMA 2007.
(5) Based on data from *Brooklyn Bridge Park Project FEIS*, 2005.
(6) Based on data from *West 57th Street Rezoning FEIS*, 2001.
(7) Based on data from *ITE Trip Generation Handbook, 8th Edition*, Land Use Code 150 (Warehousing); Person Trip Rate=ITE Trip Rate x 1.3/0.95.
(8) Based on data from *Greenpoint-Williamsburg Rezoning FSEIS*, 2005.
(9) Based on data from *The Food Retail Expansion to Support Health (FRESH) Food Store Program*, 2009.
(10) Assumes a 32% increase in peak hour trips on Saturday; based on ratio between weekday and Saturday rates for supermarket use provided by the *CEQR Technical Manual*, 2014.
(11) Assumes for Saturday the same temporal distribution, modal split, directional split, and vehicle occupancy as the weekday midday.
(12) Based on data from Brownsville Ascend Charter School Assessment, 2011.
(13) Assumes a student to parent ratio of 1 to 0.7 based on data from a November 2012 survey conducted at PS 35 in Queens.
(14) Assumes 205 students attend the Pre-K only school, 72 attend the PS/IS school, and a 5% absentee rate. Parents are assumed for students in grade 5 and lower.
(15) Based on data from *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS*, 2004.
(16) Based on data from *Hunters Point Rezoning FSEIS*, 2007.
(17) Based on data provided by NYCDOT.
(18) Community Center use modal splits applied to Day Care Center and House of Worship uses.
(19) Midday and Saturday vehicle occupancy determined by applying a multiplier (1.4) to the AM/PM rate.
(20) Based on data provided by NYCDCP.
(21) Based on data from the 2006 *Atlantic Yards Arena and Redevelopment FEIS*.
(22) PM temporal distribution for staff is assumed to be the same as for the students.
(23) Includes students from the proposed Pre-K facilities on Site 2A and Site 5A.

This table has been revised for the FEIS.

Table 3.15-8: Transportation Planning Factors (Con't)

Land Use:	Manufacturing	Warehousing	Non-Warehouse	Auto Care Center	Office	Gas Station (With Store)
Trip Generation:	(20) (21)	(20) (21)	(14) (14)	(1) (2)	(4) (4)	(15, 16) (15, 16)
	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday
Daily Person Trips	4.5 1.8	3.6 1.4	4.8 3.6	19.42 19.42	18.0 1.6	99.0 40.0
	per 1,000 gsf	per 1,000 gsf	per 1,000 gsf	per 1,000 gsf	per 1,000 gsf	vehicle trips per fueling position
Temporal Distribution:	(9,23)	(4,23)	(3,4)	(7,10)	(3,4)	(4)
AM	14.0%	17.0%	10.7%	13.2%	11.8%	8.25
MD	18.0%	14.0%	11.0%	11.0%	15.0%	3.5%
PM	17.0%	13.0%	11.2%	14.2%	12.7%	8.7%
	11.4%	11.4%	11.4%	11.0%	15.0%	8.5%
In/Out Splits:	(12,18)	(12,23)	(17)	(3,17)	(9,23)	(4)
	In Out	In Out	In Out	In Out	In Out	In Out
AM	73% 23%	83% 17%	59% 41%	86% 36%	86% 4%	60% 50%
MD	50% 50%	50% 50%	50% 50%	50% 50%	39% 61%	50% 50%
PM	36% 64%	25% 75%	51% 49%	50% 50%	3% 05%	50% 50%
SAT MD	50% 50%	50% 50%	50% 50%	50% 50%	60% 40%	50% 50%
Modal Splits:	(18)	(18)	(3)	(7)	(12)	(2)
Auto	48%	48%	95%	58%	48%	100%
Taxi	2%	2%	0%	3%	2%	n/a
Bus	18%	18%	0%	1%	18%	n/a
Subway	29%	29%	0%	1%	29%	n/a
Walk	3%	3%	5%	8%	3%	n/a
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Vehicle Occupancy:	(12)	(12)	(14)	(9)	(4)	(4)
Auto	1.04	1.04	1.65	1.30	1.30	1.00
Taxi	2.00	2.00	n/a	1.30	1.48	n/a
Truck Trip Generation:	(3) (19)	(7) (19)		(7) (19)	(8) (23)	(3) (19)
	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday	Weekday Saturday
	0.53 0.03	0.07 0.03	n/a n/a	0.68 0.05	0.10 0.01	0.35 0.02
	per 1,000 gsf	per 1,000 gsf		per 1,000 gsf	per 1,000 gsf	vehicle trips per fueling position
	(8,19)	(3,19)		(7,19)	(3,71)	(3,19)
AM	14.0%	14.0%	n/a	14.0%	0.5%	7.7%
MD	8.5%	8.5%	n/a	8.5%	11.0%	11.0%
PM	1.0%	1.0%	n/a	1.0%	1.0%	1.0%
SAT MD	8.5%	8.5%	n/a	8.5%	11.0%	11.0%
	In Out	In Out	In Out	In Out	In Out	In Out
	50.0% 50.0%	50.0% 50.0%	n/a n/a	50.0% 50.0%	50.0% 50.0%	50.0% 50.0%

Sources:

(1) Pushkarev & Zupan, "Urban Space for Pedestrians," 1975
(2) 2000 US Census Journey-to-Work "Residence of Worker" data for Tracts 47, 49, 53.01, and 57
(3) No. 7 Subway Extension - Hudson Yards Rezoning and Development Program FGEIS, 2004.
(4) Hunts Point Rezoning EAS, 2007
(5) Melrose Commons Urban Renewal Amendments DEIS, 2007.
(6) Plaza at the Pier EAS, 2006.
(7) Upper East Side Rezoning FEIS, 2005.
(8) Gateway Center at Bronx Terminal Market FEIS, 2005.
(9) FHWA, "Urbanik Pickup and Delivery and Arterial Traffic Impacts," 1981.
(10) Assumes weekday MD temporal distribution for SAT MD.
(11) The Jamaica Plan FEIS, 2007.
(12) Port Morris/Hunts Point Boulevard Rezoning Study EAS, 2004
(13) 2000 US Census Reverse Journey-to-Work "Place of Work" data for Tracts 47, 49, 53.01, and 57
(14) ITE Trip Generation, 7th Edition, Land Use Code 151: Mini-Warehouse
(15) ITE Trip Generation, 7th Edition, Land Use Code 945: Gasoline/Service Station with Convenience Market
(16) Pass-by trips assumed to be 56% based on ITE Trip Generation Handbook (1998)
(17) ITE Trip Generation, 7th Edition, Land Use Code 840: Automobile Care Center
(18) ITE Trip Generation, 7th Edition, Land Use Code 140: Manufacturing.
(19) Assumes 5% of weekday trip generation rate.
(20) ITE Trip Generation, 7th Edition, Land Use Code 150: Warehouse
(21) Saturday rate based on ITE Trip Generation rate variation between weekday and Saturday.
(22) Weekday trip generation rate received for Saturday as per Jamaica Plan FEIS, 2007.
(23) Atlantic Yards Arena and Redevelopment Project FEIS, 2006.
(24) Assumes 25% pass by trips as per Dutch Kills Rezoning Transportation Planning Assumptions

Table 13-4: Weekday Transportation Planning Assumptions (Generic Supermarket)

Land Use:	Local Retail	Residential	Supermarket			PS School		PS Staff	Existing Industrial
Size/Units:	84,470 gsf	1,502 DU*	25,000 gsf			456 sents		35 staff	-194,700 gsf
Trip Generation:	(1)	(1)	(1)			(9)		(9)	(7)
Weekday	205	8.075	175			2		2	NA
	per 1,000 sf	per DU	per 1000 gsf			per student		per staff	
Temporal Distribution:	(1)	(1)	(5)			(9)		(9)	(7)
AM	3.0%	10.0%	5.0%			50%		50%	NA
MD	19.0%	5.0%	6.0%			0%		0%	NA
PM	10.0%	11.0%	10.0%			5%		50%	NA
	(2)	(3)	(5)			(10)		(8)	(7)
Modal Splits:	AM/MD/PM	AM/MD/PM	AM	MD	PM	Outsider	Internal	AM/MD/PM	AM/MD/PM
Auto/Auto-dropoff	2.0%	32.4%	61.0%	68.0%	67.0%	5.0%	0	57.0%	NA
Taxi	3.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0	1.0%	NA
Subway/Shuttle	6.0%	55.4%	1.0%	0.0%	0.0%	0.0%	0	18.0%	NA
Bus	6.0%	3.2%	5.0%	5.0%	3.0%	0.0%	0	11.0%	NA
Schoolbus						5.0%	0		NA
Walk/Peny/Other	83.0%	8.5%	33.0%	27.0%	30.0%	5.0%	85%	13.0%	NA
	100.0%	100.0%	100.0%	100.0%	100.0%	15.0%	85.0%	100.0%	NA
	(2)	(4)	(5)			(9)		(8)	(7)
In/Out Splits:	In Out	In Out	In	Out		In	Out	In Out	In Out
AM	50% 50%	20.0% 80.0%	57%	43%		100%	0%	100% 0%	NA NA
MD	50% 50%	50.0% 50.0%	50%	50%		0%	0%	0% 100%	NA NA
PM	50% 50%	65.0% 35.0%	52%	48%		0%	100%	0% 100%	NA NA
Vehicle Occupancy:	(2)	(3)	(5)			(9)		(8)	(7)
	Weekday	Weekday	AM	MD	PM	Weekday		Weekday	Weekday
Auto	2.00	1.11	1.12	1.32	1.34	1.3		1.20	NA
Taxi	2.00	1.4				1.3		1.20	NA
Truck Trip Generation:	(1)	(1)	(11)			(6)			(7)
	0.35	0.06	0.35			6.25			NA
	per 1,000 sf	per DU	per 1,000 sf			students/bus			
	(1)	(1)	(1)						(7)
AM	8.0%	12.0%	8.0%						NA
MD	11.0%	9.0%	11.0%						NA
PM	2.0%	2.0%	2.0%						NA
	In Out	In Out	In	Out					In Out
AM	50.0% 50.0%	50.0% 50.0%	50.0%	50.0%					NA NA
MD	50.0% 50.0%	50.0% 50.0%	50.0%	50.0%					NA NA
PM	50.0% 50.0%	50.0% 50.0%	50.0%	50.0%					NA NA

Notes:

(1) *CEQR Technical Manual*
(2) *Dutch Kills Rezoning and Related Actions FEIS* (2008)
(3) Modal split and vehicle occupancy rates based on 2007-2011 ACS Journey to Work data (census tracts 81,83,91,97,101,103,105)
(4) Based on *ITE Trip Generation Handbook, 8th Edition*, Land Use Code (220) Apartment
(5) Based on 1525 Albany Avenue Pathmark Supermarket Survey
(6) Based on data from survey conducted by PHA (October 2012) on PS 35, Hollis, Queens
(7) Vehicular travel demand was based on counts in 2013. Credit for transit and pedestrian trips are not being taken for conservative purposes.
(8) Modal split and vehicle occupancy data based on 2000 Census Reverse Journey to Work data (census tracts 87, 91) in Queens
(9) *Brownsville Ascend Charter School Assessment* (2011)
(10) *Halletts Point FEIS* (2013)
(11) CEQR local retail delivery truck trip generation rate
* 166 residential units in upland area in No-Action condition (1,668 DUs in With-Action condition) for net increment of 1,502

NOISE
APPENDIX

11-01 BROADWAY

April 13, 2021

Noise Analysis
Prepared by:
Equity Environmental
Prepared for:
Environmental Studies Corp.

Noise Analysis – 11-01 Broadway

Introduction

Equity Environmental Engineering, LLC (Equity) conducted noise monitoring on Tuesday, September 10th, 2019 in support of a Zoning Map Amendment that would establish an MX(R7A/M1-4) district within an area currently zoned R5. The affected area is block bounded by Broadway, 11th Street, 33rd Avenue, and 12th Street in the Astoria section of Queens Community District 1. The affected area consists of Block 316 / Lots 1 & 13.

Broadway is a two-way street with two moving east-bound and west-bound lanes, as well as curbside parking. 11th Street is a two-way street with two moving lanes and curbside parking. 33rd Avenue is a is a two-way street with two moving lanes and curbside parking.12th Street is a two-way street with two moving lanes and curbside parking Local intersections are controlled by traffic signals and stop signs

The Proposed Action would allow noise-sensitive residential development in an area where such use is not permitted under existing zoning, as well as allowing commercial development at an increased density. Therefore, an assessment of the potential for adverse effects on project occupants from ambient noise is warranted. The projected development would not create a significant stationary noise generator. Additionally, project-generated traffic would not double vehicular traffic on nearby roadways, and therefore would not result in a perceptible increase in vehicular noise. Therefore, this noise assessment is limited to an assessment of ambient noise that could adversely affect occupants of the development. The predominant noise source at the Affected Area is vehicular traffic on surrounding streets.

Framework of Noise Analysis

Noise is defined as any unwanted sound, and sound is defined as any pressure variation that the human ear can detect. Humans can detect a large range of sound pressures, from 20 to 20 million micropascals, but only those air pressure variations occurring within a particular set of frequencies are experienced as sound. Air pressure changes that occur between 20 and 20,000 times a second, stated as units of Hertz (Hz), are registered as sound.

Because the human ear can detect such a wide range of sound pressures, sound pressure is converted to sound pressure level (SPL), which is measured in units called decibels (dB). The decibel is a relative measure of the sound pressure with respect to a standardized reference quantity. Because the dB scale is logarithmic, a relative increase of 10 dB represents a sound pressure that is 10 times higher. However, humans do not perceive a 10-dB increase as 10 times louder. Instead, they perceive it as twice as loud.

Sound is often measured and described in terms of its overall energy, taking all frequencies into account. However, the human hearing process is not the same at all frequencies. Humans are less sensitive to low frequencies (less than 250 Hz) than mid-frequencies (500 Hz to 1,000 Hz) and are most sensitive to frequencies in the 1,000- to 5,000-Hz range. Therefore, noise measurements are often adjusted, or weighted, as a function of frequency to account for human perception and

sensitivities. The most common frequency weightings used are the A- and C-weightings. These weight scales were developed to allow sound level meters, which use filter networks to approximate the characteristic of the human hearing mechanism, to simulate the frequency sensitivity of human hearing. The A-weighting is the most commonly used for environmental measurements, and sound levels measured using this weighting are denoted as dBA. The letter "A" indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear does. C-weighting gives nearly equal emphasis to sounds of most frequencies. Mid-range frequencies approximate the actual (unweighted) sound level, while the very low and very high frequency bands are significantly affected by C-weighting.

Table 19-1: Noise Levels of Common Sources

Sound Source	SPL (dB(A))
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
Isolated Broadcast Studio	20
Audiometric (Hearing Testing) Booth	10
Threshold of Hearing	0
Notes: A change in 3dB(A) is a just noticeable change in SPL. A change in 10 dB(A)Is perceived as a doubling or halving in SPL.	
Source: 2014 CEQR Technical Manual	

The following is typical of human response to relative changes in noise level:

- 3-dBA change is the threshold of change detectable by the human ear;
- 5-dBA change is readily noticeable; and
- 10-dBA change is perceived as a doubling or halving of the noise level.

The SPL that humans experience typically varies from moment to moment. Therefore, various descriptors are used to evaluate noise levels over time. Some typical descriptors are defined below.

- L_{eq} is the continuous equivalent sound level. The sound energy from the fluctuating SPLs is averaged over time to create a single number to describe the mean energy, or intensity, level. High noise levels during a measurement period will have a greater effect on the L_{eq} than low noise levels. L_{eq} has an advantage over other descriptors because L_{eq} values from various noise sources can be added and subtracted to determine cumulative noise levels.

- L_{max} is the highest SPL measured during a given period of time. It is useful in evaluating L_{eq}s for time periods that have an especially wide range of noise levels.

- $L_{eq(24)}$ is the continuous equivalent sound level over a 24-hour time period.

The sound level exceeded during a given percentage of a measurement period is the percentile-exceeded sound level (L_X). Examples include L_{10}, L_{50}, and L_{90}. L_{10} is the A-weighted sound level that is exceeded 10% of the measurement period.

The decrease in sound level caused by the distance from any single noise source normally follows the inverse square law (i.e., the SPL changes in inverse proportion to the square of the distance from the sound source). In a large open area with no obstructive or reflective surfaces, it is a general rule that at distances greater than 50 feet, the SPL from a point source of noise drops off at a rate of 6 dB with each doubling of distance away from the source. For "line" sources, such as vehicles on a street, the SPL drops off at a rate of 3 dBA with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The drop-off rate also will vary with both terrain conditions and the presence of obstructions in the sound propagation path.

Noise Standards and Guidelines

In 1983, the New York City Department of Environmental Protection (NYCDEP) adopted the City Environmental Quality Review (CEQR) noise exposure guidelines for exterior noise levels. As shown in Table 19-2 below, noise standards classify noise exposure into four categories based on noise level limits and land use, for vehicular traffic, rail, and aircraft noise sources: Acceptable, Marginally Acceptable, Marginally Unacceptable and Clearly Unacceptable, Table 19-3 of the *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise exposure levels. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA (*L_{10} or Ldn, depending on the source*) or below.

Table 19-2: 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		Ldn < 60 dBA		Ldn < 60 dBA		Ldn < 75 dBA
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		55<L_{10}≤65 dBA		65<L_{10}≤80 dBA		L_{10}>80dBA	
3. Residence, residential hotel or motel	7 am to 10 pm	$L_{10} \leq 65$dBA		65<L_{10}≤70 dBA		70<L_{10}≤80 dBA		L_{10}>80dBA	
	10 pm to 7 am	L10≤55dBA		55<L_{10}≤70 dBA		70<L_{10}≤80 dBA		L_{10}>80dBA	
4. School, museum, library, court house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM- 10 PM)		Same as Residential Day (7 AM –10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM –10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Source: New York City Department of Environmental Protection (adopted policy 1983).

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more;

1 Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

2 Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and nursing homes.

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

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

Table 19-3 CEQR TM: Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with Proposed Project	70 < $L_{10} \leq 73$	73 < $L_{10} \leq 76$	76 < $L_{10} \leq 78$	78 < $L_{10} \leq 80$	80 < L_{10}
Attenuation[1]	(i) 28 dB(A)	(ii) 31 dB(A)	(iii) 33 dB(A)	(iv) 35 dB(A)	36 + $(L_{10} - 80)^2$ dB(A)

Source: New York City of Environmental Protection

Notes:

1 The above composite window-wall attenuation values are for residential dwellings. Commercial and office spaces/meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

2 Required attenuation values increase by 1 dB(A) increments for L_{10} values greater than 80 dBA.

Measurement Location and Equipment

Because the predominant noise sources in the area of the proposed project consist of vehicular traffic and elevated train movements, noise monitoring was conducted during peak weekday vehicular travel periods (AM, Midday, PM) on a typical midweek day. Pursuant to CEQR Technical Manual Methodology, measurements were conducted for a 20-minute period during each of the peak periods at each monitoring location at the Project Area: Location One (1) was at ground level at the center of the Broadway frontage; Location Two (2) at ground level at the center of the 11th Street frontage; Location Three (3) was at ground level on the 12th Street frontage. The noise monitoring locations are shown in Figure 19-1 and Photo 19-1, 19-2, and 19-3 below.

Noise monitoring was conducted using a using Larson Davis LxT Type I sound level meter with wind screen. The monitor was placed on a tripod at a height of approximately four feet above the ground, away from any other noise-reflective surfaces. The monitor was calibrated prior to and following each monitoring session. Periods of peak vehicular traffic around the Project Area constitute a worst-case condition for noise. Noise meter calibration certification and back up data are provided in Appendix A.

Photo 19-1: ***Noise Monitoring Location One (1) Broadway***



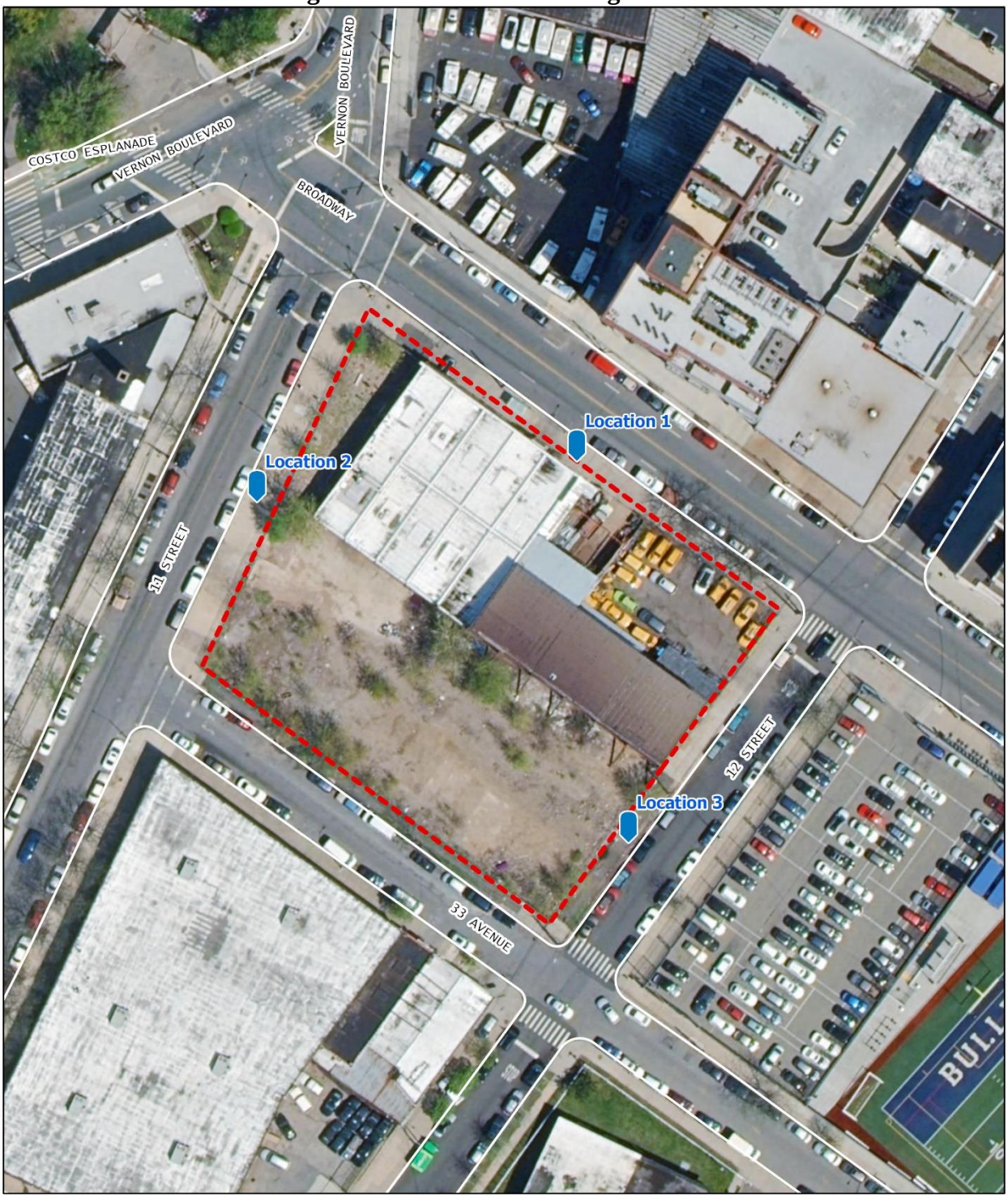
Photo 19-2: ***Noise Monitoring Location Two (2)***
11th Street



Photo 19-3: ***Noise Monitoring Location Three (3)***
12th Street



Figure 19-1: Noise Monitoring Location



Measurement Conditions
Monitoring was conducted during typical midweek conditions, on Tuesday, September 10th, 2019. The weather was dry with intermittent rain and wind speeds were moderate during all monitoring periods. The sound meter was calibrated before and after each monitoring session.

Existing Conditions
Based on the noise measurements, the predominant source of noise is vehicular traffic.

Table 19-4 19-5, and 19-6 *below contains the results for the measurements taken at the Project Site:*

Table 19-4
Noise Levels (dB) at Location 1

Tuesday, September 10th, 2019

Time	**7:33 am – 7: 53 am**	**12:00 pm – 12:20 pm**	**4:30 pm – 4:50 pm**
L_{max}	91.0	83.4	84.5
L_{10}	69.2	69.8	66.4
L_{eq}	66.9	67.1	64.2
L_{50}	61.6	64.0	61.1
L_{90}	57.3	60.3	57.4
L_{min}	54.9	58.2	55.4

Note: **Bold** denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Table 19-5
Noise Levels (dB) at Location 2

Tuesday, September 10th, 2019

Time	**7:55 am – 8:15 am**	**12:22 pm – 12:42 pm**	**4:53 pm – 5:13 pm**
L_{max}	91.3	81.2	75.1
L_{10}	62.7	65.6	62.8
L_{eq}	61.3	63.8	59.9
L_{50}	57.3	58.7	55.7
L_{90}	53.7	55.4	53.8
L_{min}	51.3	53.1	52.4

Note: **Bold** denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Table 19-6 *Noise Levels (dB) at Location 3*			
Tuesday, September 10th, 2019			
Time	**8:17 am – 8:37 am**	**12:46 pm – 1:07 pm**	**5:24 pm – 5:44 pm**
L_{max}	78.9	80.0	76.2
L_{10}	59.5	61.5	59.5
L_{eq}	57.6	59.5	56.8
L_{50}	54.1	52.7	54.4
L_{90}	50.4	50.1	51.3
L_{min}	48.8	48.3	49.2

Note: **Bold** denotes L_{10} or L_{eq} noise level exceedances, according to Table 19-2 of the CEQR Technical Manual

Table 19-7, 19-8, and 19-9 *below contains the traffic counts and vehicle classifications during each monitoring period for 20 minutes:*

Table 19-7 ***Location 1:*** *Traffic volumes and vehicle classifications*			
	7:33 am – 7: 53 am	**12:00 pm – 12:20 pm**	**4:30 pm – 4:50 pm**
Car/ Taxi	26	41	17
Van/Light Truck/SUV	37	47	18
Medium Truck	5	1	4
Heavy Truck	4	3	1
Bus	12	3	2
Train	0	0	0

Table 19-8 ***Location 2:*** *Traffic volumes and vehicle classifications*			
	7:55 am – 8:15 am	**12:22 pm – 12:42 pm**	**4:53 pm – 5:13 pm**
Car/ Taxi	16	16	12
Van/Light Truck/SUV	20	12	14
Medium Truck	1	1	1
Heavy Truck	2	2	0
Bus	1	1	1
Train	0	0	0

Table 19-9 ***Location 3:*** *Traffic volumes and vehicle classifications*			
	8:17 am – 8:37 am	**12:46 pm – 1:07 pm**	**5:24 pm – 5:44 pm**
Car/ Taxi	2	8	7
Van/Light Truck/SUV	1	6	4
Medium Truck	1	1	1
Heavy Truck	0	1	1
Bus	0	2	0
Train	0	0	0

Stationary Sources

It is assumed that the building mechanical systems (i.e., HVAC systems) 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.

Determination of Impacts/Building Attenuation Requirements

The *2020 CEQR Technical Manual* **Table 2.9-2** contains noise exposure guidelines. For a residential use such as would occur under the Proposed Actions, an L_{10} of between 65 and 70 dB(A) is identified as marginally acceptable general external exposure. An L_{10} of between 70 and 80 dB(A) is identified as marginally unacceptable general external exposure. The highest recorded L_{10} at Location One (1) of the development site was 69.8 dB(A) during the midday monitoring period. The highest recorded L_{10} at Location Two (2) of the development site was 65.6 dB(A) during the midday monitoring period. The highest recorded L_{10} at Location Three (3) of the development site was 61.5 dB(A) during the midday monitoring period. As such, residential uses at Projected Development Site 1 under the Future With-Action Condition would experience general external noise exposure at a marginally acceptable level and there would be no potential for significant adverse impacts related to ambient noise.

As all measured noise levels are below 70 dBA, no noise mitigation would be required for the Proposed Actions. As noted above, pursuant to ZR §123-32, in *Special Mixed-Use Districts*, all new *dwelling units* shall be provided with a minimum 35dB(A) of window wall attenuation to maintain an interior noise level of 45dB(A) or less, with windows closed, and shall provide an alternate means of ventilation. However, upon application to OER by the owner of the affected building, OER may modify the requirements of this Section, based upon new information, additional facts or updated standards, as applicable, provided that such modification is equally protective. The Proposed Action would not result in any potentially significant adverse stationary or mobile source noise impacts, and further assessment is not warranted.

Appendix A: Noise Backup Data and Calibration Certificate

Summary

Filename	LxT_Data.088
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 7:33:03
Stop	2019/09/10 7:53:28
Duration	0:20:25.3
Run Time	0:20:25.3
Pause	0:00:00.0
Pre Calibration	2019/09/10 7:32:37
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	137.9 dB

	A	C	Z
Under Range Peak	**94.2**	91.2	96.2 dB
Under Range Limit	**43.2**	41.2	49.2 dB
Noise Floor	30.2	30.8	38.3 dB

Results

LAeq	66.9 dB	
LAE	97.8 dB	
EA	671.968 μPa^2h	
EA8	15.794 mPa^2h	
EA40	78.971 mPa^2h	
LApeak (max)	2019/09/10 7:49:06	111.6 dB
LASmax	2019/09/10 7:49:06	91.0 dB
LASmin	2019/09/10 7:40:11	54.9 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	2	3.1 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	76.9	-99.9	66.9	76.9	-99.9	-99.9	66.9

LCeq	78.5 dB
LAeq	66.9 dB
LCeq - LAeq	11.6 dB
LAleq	74.0 dB
LAeq	66.9 dB
LAleq - LAeq	7.1 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	
OBA Overload Duration	2.1 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	0.00	0.01 %
Projected Dose	0.03	0.22 %
TWA (Projected)	30.5	45.9 dB
TWA (t)	7.7	23.1 dB
Lep (t)	53.2	53.2 dB

Statistics

LAS5.00	71.0 dB
LAS10.00	69.2 dB
LAS33.30	64.4 dB
LAS50.00	61.6 dB
LAS66.60	59.8 dB
LAS90.00	57.3 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9	
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7	
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0	
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8	
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3	
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1	
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3	
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7	
PRMLxT2	2019/06/19 11:39:33	-55.8	77.3	66.9	70.9	59.2	60.8	54.1	54.0	41.1	39.4	39.6	39.5	39.5	42.1	44.3	46.0	42.2	43.8	49.3	44.0	42.4	42.5	42.1	113.7	48.8	36.1	69.0	35.6	66.6	39.3	40.3	40.0	40.8	42.2	43.3	44.6	
PRMLxT2	2019/06/19 7:27:53	-55.6	116.9	94.9	105.1	89.4	87.5	118.8	115.1	110.6	99.4	84.2	94.8	87.2	70.8	59.3	54.5	64.3	50.5	46.7	41.6	40.4	34.8	75.1	114.1	49.2	34.8	69.7	37.0	68.8	39.9	40.9	56.6	41.1	42.4	43.8	49.3	

Summary

Filename	LxT_Data.091
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 11:59:08
Stop	2019/09/10 12:19:14
Duration	0:20:06.2
Run Time	0:20:06.2
Pause	0:00:00.0
Pre Calibration	2019/09/10 8:57:37
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	139.1 dB

	A	C	Z
Under Range Peak	**95.3**	92.3	97.3 dB
Under Range Limit	**44.3**	42.3	50.3 dB
Noise Floor	31.3	31.9	39.5 dB

Results

LAeq	67.1 dB	
LAE	97.9 dB	
EA	690.861 µPa²h	
EA8	16.495 mPa²h	
EA40	82.477 mPa²h	
LApeak (max)	2019/09/10 12:06:22	106.5 dB
LASmax	2019/09/10 12:00:50	83.4 dB
LASmin	2019/09/10 11:59:44	58.2 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	67.1	67.1	-99.9	67.1	67.1	-99.9	-99.9

LCeq	80.0 dB
LAeq	67.1 dB
LCeq - LAeq	12.9 dB
LAleq	72.5 dB
LAeq	67.1 dB
LAleq - LAeq	5.4 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	
OBA Overload Duration	4.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.12 %
TWA (Projected)	-99.9	41.4 dB
TWA (t)	-99.9	18.5 dB
Lep (t)	53.3	53.3 dB

Statistics

LAS5.00	72.0 dB
LAS10.00	69.8 dB
LAS33.30	65.7 dB
LAS50.00	64.0 dB
LAS66.60	62.5 dB
LAS90.00	60.3 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 8:57:34	-45.4	44.9	50.5	55.0	54.4	51.3	55.0	63.1	64.9	62.8	69.2	81.9	56.8	52.2	54.0	57.2	53.1	57.8	55.7	55.7	49.9	38.3	33.3	112.8	47.8	23.7	61.4	25.0	58.9	30.5	29.7	28.9	30.1	31.5	32.6	33.8
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7
PRMLxT2	2019/06/19 11:39:33	-55.8	77.3	66.9	70.9	59.2	60.8	54.1	54.0	41.1	39.4	39.6	39.5	39.5	42.1	44.3	46.0	42.2	43.8	49.3	44.0	42.4	42.5	42.1	113.7	48.8	36.1	69.0	35.6	66.6	39.3	40.3	40.0	40.8	42.2	43.3	44.6

Summary

Filename	LxT_Data.094
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 16:30:07
Stop	2019/09/10 16:50:08
Duration	0:20:01.0
Run Time	0:20:01.0
Pause	0:00:00.0
Pre Calibration	2019/09/10 16:28:19
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	138.9 dB

	A	C	Z
Under Range Peak	**95.2**	92.2	97.2 dB
Under Range Limit	**44.2**	42.2	50.2 dB
Noise Floor	31.2	31.8	39.3 dB

Results

LAeq	64.2 dB	
LAE	95.0 dB	
EA	349.387 μPa²h	
EA8	8.378 mPa²h	
EA40	41.892 mPa²h	
LApeak (max)	2019/09/10 16:30:51	97.2 dB
LASmax	2019/09/10 16:50:03	84.5 dB
LASmin	2019/09/10 16:38:52	55.4 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	64.2	64.2	-99.9	64.2	64.2	-99.9	-99.9

LCeq	74.8 dB
LAeq	64.2 dB
LCeq - LAeq	10.6 dB
LAleq	67.3 dB
LAeq	64.2 dB
LAleq - LAeq	3.1 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.08 %
TWA (Projected)	-99.9	38.8 dB
TWA (t)	-99.9	15.9 dB
Lep (t)	50.4	50.4 dB

Statistics

LAS5.00	68.2 dB
LAS10.00	66.4 dB
LAS33.30	62.6 dB
LAS50.00	61.1 dB
LAS66.60	59.7 dB
LAS90.00	57.4 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 16:28:17	-45.2	71.2	70.1	72.8	68.5	74.5	60.2	66.4	62.6	67.8	67.1	63.0	66.0	63.4	60.9	58.8	57.0	58.5	56.3	54.9	53.8	45.3	34.6	114.1	49.1	25.3	62.7	25.9	60.2	31.2	30.8	30.4	31.2	32.6	33.8	35.3
PRMLxT2	2019/09/10 8:57:34	-45.4	44.9	50.5	55.0	54.4	51.3	55.0	63.1	64.9	62.8	69.2	81.9	56.8	52.2	54.0	57.2	53.1	57.8	55.7	55.7	49.9	38.3	33.3	112.8	47.8	23.7	61.4	25.0	58.9	30.5	29.7	28.9	30.1	31.5	32.6	33.8
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7

Summary

Filename	LxT_Data.089
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 7:55:38
Stop	2019/09/10 8:15:40
Duration	0:20:01.1
Run Time	0:20:01.1
Pause	0:00:00.0
Pre Calibration	2019/09/10 7:32:30
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	137.9 dB

	A	C	Z
Under Range Peak	**94.2**	91.2	96.2 dB
Under Range Limit	**43.2**	41.2	49.2 dB
Noise Floor	30.2	30.8	38.3 dB

Results

LAeq	61.3 dB	
LAE	92.1 dB	
EA	179.643 µPa²h	
EA8	4.307 mPa²h	
EA40	21.537 mPa²h	
LApeak (max)	2019/09/10 8:13:06	96.9 dB
LASmax	2019/09/10 8:13:07	81.3 dB
LASmin	2019/09/10 8:14:19	51.3 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	71.3	-99.9		61.3	71.3	-99.9	-99.9	61.3

LCeq	72.3 dB
LAeq	61.3 dB
LCeq - LAeq	11.0 dB
LAleq	65.6 dB
LAeq	61.3 dB
LAleq - LAeq	4.3 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.01 %
TWA (Projected)	-99.9	25.8 dB
TWA (t)	-99.9	2.9 dB
Lep (t)	47.5	47.5 dB

Statistics

LAS5.00	65.7 dB
LAS10.00	62.7 dB
LAS33.30	59.1 dB
LAS50.00	57.3 dB
LAS66.60	55.7 dB
LAS90.00	53.7 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9	
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7	
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0	
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8	
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3	
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1	
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3	
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7	
PRMLxT2	2019/06/19 11:39:33	-55.8	77.3	66.9	70.9	59.2	60.8	54.1	54.0	41.1	39.4	39.6	39.5	39.5	42.1	44.3	46.0	42.2	43.8	49.3	44.0	42.4	42.5	42.1	113.7	48.8	36.1	69.0	35.6	66.6	39.3	40.3	40.0	40.8	42.2	43.3	44.6	
PRMLxT2	2019/06/19 7:27:53	-55.6	116.9	94.9	105.1	89.4	87.5	118.8	115.1	110.6	99.4	84.2	94.8	87.2	70.8	59.3	54.5	64.3	50.5	46.7	41.6	40.4	34.8	75.1	114.1	49.2	34.8	69.7	37.0	68.8	39.9	40.9	56.6	41.1	42.4	43.8	49.3	

Summary

Filename	LxT_Data.092
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 12:22:27
Stop	2019/09/10 12:42:33
Duration	0:20:05.9
Run Time	0:20:05.9
Pause	0:00:00.0
Pre Calibration	2019/09/10 8:57:34
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	139.1 dB

	A	C	Z
Under Range Peak	**95.3**	92.3	97.3 dB
Under Range Limit	**44.3**	42.3	50.3 dB
Noise Floor	31.3	31.9	39.5 dB

Results

LAeq	63.8 dB	
LAE	94.7 dB	
EA	324.217 µPa²h	
EA8	7.743 mPa²h	
EA40	38.716 mPa²h	
LApeak (max)	2019/09/10 12:35:23	106.5 dB
LASmax	2019/09/10 12:31:03	81.2 dB
LASmin	2019/09/10 12:37:49	53.1 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	63.8	63.8	-99.9	63.8	63.8	-99.9	-99.9

LCeq	77.8 dB
LAeq	63.8 dB
LCeq - LAeq	14.0 dB
LAleq	68.2 dB
LAeq	63.8 dB
LAleq - LAeq	4.4 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.03 %
TWA (Projected)	-99.9	31.4 dB
TWA (t)	-99.9	8.5 dB
Lep (t)	50.1	50.1 dB

Statistics

LAS5.00	69.6 dB
LAS10.00	65.6 dB
LAS33.30	61.1 dB
LAS50.00	58.7 dB
LAS66.60	56.9 dB
LAS90.00	55.4 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 8:57:34	-45.4	44.9	50.5	55.0	54.4	51.3	55.0	63.1	64.9	62.8	69.2	81.9	56.8	52.2	54.0	57.2	53.1	57.8	55.7	55.7	49.9	38.3	33.3	112.8	47.8	23.7	61.4	25.0	58.9	30.5	29.7	28.9	30.1	31.5	32.6	33.8	
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9	
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7	
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0	
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8	
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3	
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1	
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3	
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7	
PRMLxT2	2019/06/19 11:39:33	-55.8	77.3	66.9	70.9	59.2	60.8	54.1	54.0	41.1	39.4	39.6	39.5	39.5	42.1	44.3	46.0	42.2	43.8	49.3	44.0	42.4	42.5	42.1	113.7	48.8	36.1	69.0	35.6	66.6	39.3	40.3	40.0	40.8	42.2	43.3	44.6	

Summary

Filename	LxT_Data.095
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 16:53:27
Stop	2019/09/10 17:13:38
Duration	0:20:11.2
Run Time	0:20:11.2
Pause	0:00:00.0
Pre Calibration	2019/09/10 16:28:17
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	138.9 dB

	A	C	Z
Under Range Peak	**95.2**	92.2	97.2 dB
Under Range Limit	**44.2**	42.2	50.2 dB
Noise Floor	31.2	31.8	39.3 dB

Results

LAeq	59.9 dB	
LAE	90.8 dB	
EA	132.408 μPa²h	
EA8	3.148 mPa²h	
EA40	15.742 mPa²h	
LApeak (max)	2019/09/10 17:04:14	96.6 dB
LASmax	2019/09/10 17:04:14	75.1 dB
LASmin	2019/09/10 17:07:21	52.4 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	59.9	59.9	-99.9	59.9	59.9	-99.9	-99.9

LCeq	73.3 dB
LAeq	59.9 dB
LCeq - LAeq	13.3 dB
LAleq	63.5 dB
LAeq	59.9 dB
LAleq - LAeq	3.5 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	46.2	46.2 dB

Statistics

LAS5.00	65.8 dB
LAS10.00	62.8 dB
LAS33.30	57.0 dB
LAS50.00	55.7 dB
LAS66.60	54.8 dB
LAS90.00	53.8 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 16:28:17	-45.2	71.2	70.1	72.8	68.5	74.5	60.2	66.4	62.6	67.8	67.1	63.0	66.0	63.4	60.9	58.8	57.0	58.5	56.3	54.9	53.8	45.3	34.6	114.1	49.1	25.3	62.7	25.9	60.2	31.2	30.8	30.4	31.2	32.6	33.8	35.3
PRMLxT2	2019/09/10 8:57:34	-45.4	44.9	50.5	55.0	54.4	51.3	55.0	63.1	64.9	62.8	69.2	81.9	56.8	52.2	54.0	57.2	53.1	57.8	55.7	55.7	49.9	38.3	33.3	112.8	47.8	23.7	61.4	25.0	58.9	30.5	29.7	28.9	30.1	31.5	32.6	33.8
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7

Summary

Filename	LxT_Data.090
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 8:17:56
Stop	2019/09/10 8:37:58
Duration	0:20:01.7
Run Time	0:20:01.7
Pause	0:00:00.0
Pre Calibration	2019/09/10 7:32:30
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	137.9 dB

	A	C	Z
Under Range Peak	**94.2**	91.2	96.2 dB
Under Range Limit	**43.2**	41.2	49.2 dB
Noise Floor	30.2	30.8	38.3 dB

Results

LAeq	57.6 dB	
LAE	88.4 dB	
EA	76.987 μPa²h	
EA8	1.845 mPa²h	
EA40	9.225 mPa²h	
LApeak (max)	2019/09/10 8:24:43	94.7 dB
LASmax	2019/09/10 8:24:43	78.9 dB
LASmin	2019/09/10 8:34:50	48.8 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	67.6	-99.9	57.6	67.6	-99.9	-99.9	57.6

LCeq	70.2 dB
LAeq	57.6 dB
LCeq - LAeq	12.6 dB
LAleq	61.6 dB
LAeq	57.6 dB
LAleq - LAeq	4.0 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	43.8	43.8 dB

Statistics

LAS5.00	62.1 dB
LAS10.00	59.5 dB
LAS33.30	55.7 dB
LAS50.00	54.1 dB
LAS66.60	52.4 dB
LAS90.00	50.4 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9	
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7	
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0	
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8	
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3	
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1	
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3	
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7	
PRMLxT2	2019/06/19 11:39:33	-55.8	77.3	66.9	70.9	59.2	60.8	54.1	54.0	41.1	39.4	39.6	39.5	39.5	42.1	44.3	46.0	42.2	43.8	49.3	44.0	42.4	42.5	42.1	113.7	48.8	36.1	69.0	35.6	66.6	39.3	40.3	40.0	40.8	42.2	43.3	44.6	
PRMLxT2	2019/06/19 7:27:53	-55.6	116.9	94.9	105.1	89.4	87.5	118.8	115.1	110.6	99.4	84.2	94.8	87.2	70.8	59.3	54.5	64.3	50.5	46.7	41.6	40.4	34.8	75.1	114.1	49.2	34.8	69.7	37.0	68.8	39.9	40.9	56.6	41.1	42.4	43.8	49.3	

Summary	
Filename	LxT_Data.093
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 12:46:43
Stop	2019/09/10 13:07:38
Duration	0:20:55.0
Run Time	0:20:55.0
Pause	0:00:00.0
Pre Calibration	2019/09/10 8:57:34
Post Calibration	None
Calibration Deviation	---

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	139.1 dB

	A	C	Z
Under Range Peak	**95.3**	92.3	97.3 dB
Under Range Limit	**44.3**	42.3	50.3 dB
Noise Floor	31.3	31.9	39.5 dB

Results		
LAeq	59.5 dB	
LAE	90.5 dB	
EA	125.461 µPa²h	
EA8	2.879 mPa²h	
EA40	14.395 mPa²h	
LApeak (max)	2019/09/10 12:48:01	97.6 dB
LASmax	2019/09/10 12:56:00	80.0 dB
LASmin	2019/09/10 13:00:04	48.3 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay 07:00-22:00	LNight 22:00-07:00	Lden	LDay 07:00-19:00	LEvening 19:00-22:00	LNight 22:00-07:00
	59.5	59.5	-99.9	59.5	59.5	-99.9	-99.9

LCeq	74.0 dB
LAeq	59.5 dB
LCeq - LAeq	14.5 dB
LAleq	63.0 dB
LAeq	59.5 dB
LAleq - LAeq	3.5 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h
Results		
Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	45.9	45.9 dB

Statistics	
LAS5.00	65.1 dB
LAS10.00	61.5 dB
LAS33.30	54.5 dB
LAS50.00	52.7 dB
LAS66.60	51.7 dB
LAS90.00	50.1 dB

| Calibration History | | |

Summary

Filename	LxT_Data.096
Serial Number	2230
Model	SoundTrack LxT®
Firmware Version	2.302
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2019/09/10 17:24:15
Stop	2019/09/10 17:44:16
Duration	0:20:01.1
Run Time	0:20:01.1
Pause	0:00:00.0
Pre Calibration	2019/09/10 16:28:17
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT2
Microphone Correction	Off
Integration Method	Linear
OBA Range	Low
OBA Bandwidth	1/1 Octave
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	138.9 dB

	A	C	Z
Under Range Peak	**95.2**	92.2	97.2 dB
Under Range Limit	**44.2**	42.2	50.2 dB
Noise Floor	31.2	31.8	39.3 dB

Results

LAeq	56.8 dB	
LAE	87.6 dB	
EA	63.426 μPa²h	
EA8	1.521 mPa²h	
EA40	7.604 mPa²h	
LApeak (max)	2019/09/10 17:25:27	100.9 dB
LASmax	2019/09/10 17:39:12	76.2 dB
LASmin	2019/09/10 17:30:32	49.2 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	56.8	56.8	-99.9	56.8	56.8	-99.9	-99.9
LCeq	70.0 dB						
LAeq	56.8 dB						
LCeq - LAeq	13.2 dB						
LAleq	62.3 dB						
LAeq	56.8 dB						
LAleq - LAeq	5.5 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	43.0	43.0 dB

Statistics

LAS5.00	60.8 dB
LAS10.00	59.5 dB
LAS33.30	56.0 dB
LAS50.00	54.4 dB
LAS66.60	53.1 dB
LAS90.00	51.3 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**	**6.3**	**8.0**	**10.0**	**12.5**	**16.0**	**20.0**	**25.0**	**31.5**	**40.0**	**50.0**	**63.0**	**80.0**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**	**12500**	**16000**	**20000**
PRMLxT2	2019/09/10 17:28:17	-45.2	71.2	70.1	72.8	68.5	74.5	60.2	66.4	62.6	67.8	67.1	63.0	66.0	63.4	60.9	58.8	57.0	58.5	56.3	54.9	53.8	45.3	34.6	114.1	49.1	25.3	62.7	25.9	60.2	31.2	30.8	30.4	31.2	32.6	33.8	35.3
PRMLxT2	2019/09/10 8:57:34	-45.4	44.9	50.5	55.0	54.4	51.3	55.0	63.1	64.9	62.8	69.2	81.9	56.8	52.2	54.0	57.2	53.1	57.8	55.7	55.7	49.9	38.3	33.3	112.8	47.8	23.7	61.4	25.0	58.9	30.5	29.7	28.9	30.1	31.5	32.6	33.8
PRMLxT2	2019/09/10 7:32:30	-44.2	56.7	52.4	59.4	64.8	65.4	59.7	62.9	58.4	56.6	58.6	59.4	64.5	65.0	67.8	73.8	69.5	69.6	69.1	62.3	54.6	46.5	42.8	113.8	49.0	34.5	59.7	27.6	58.8	28.2	31.3	29.7	30.5	32.8	32.6	33.9
PRMLxT2	2019/09/10 7:28:58	-44.1	63.8	61.9	64.2	70.2	65.6	62.5	65.4	58.6	60.9	59.7	71.1	61.2	66.4	68.2	66.2	68.1	65.9	62.6	56.8	53.5	50.1	45.2	114.6	49.9	34.4	59.6	26.4	59.4	28.2	31.8	29.7	30.9	32.1	33.5	34.7
PRMLxT2	2019/08/12 8:13:33	-44.7	62.8	57.8	56.6	54.6	59.1	59.2	48.9	55.7	52.4	45.0	60.8	53.5	44.6	57.0	45.2	54.8	45.1	46.3	42.4	33.1	28.0	30.3	114.5	49.5	24.6	61.4	26.3	59.7	30.6	31.4	30.0	31.3	32.6	33.8	35.0
PRMLxT2	2019/07/24 13:37:32	-45.2	45.3	48.5	44.8	42.4	46.5	59.6	51.9	47.9	49.0	51.1	45.9	41.1	32.4	40.1	30.0	29.2	30.0	29.7	26.3	25.9	23.3	29.4	113.9	48.9	24.6	63.8	25.9	58.4	30.4	30.0	29.8	31.2	32.3	33.5	34.8
PRMLxT2	2019/07/22 5:25:59	-45.0	0.0	50.8	0.0	0.0	53.6	0.0	0.0	64.6	0.0	0.0	70.4	0.0	0.0	69.8	0.0	0.0	60.8	0.0	0.0	51.3	0.0	0.0	124.4	0.0	0.0	72.3	0.0	0.0	65.1	0.0	0.0	42.8	0.0	0.0	41.3
PRMLxT2	2019/07/17 8:39:23	-55.4	27.5	28.6	21.6	27.3	19.7	25.7	24.4	21.4	20.3	19.9	25.1	17.8	17.4	23.8	23.3	26.4	23.2	23.7	25.4	26.0	33.0	27.9	27.8	28.9	31.1	30.2	31.4	33.0	33.8	35.2	35.9	37.3	38.6	40.5	40.1
PRMLxT2	2019/07/17 6:42:45	-49.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0	0.0	0.0	65535.0
PRMLxT2	2019/06/19 16:17:33	-55.4	83.0	76.4	91.1	78.1	77.9	67.7	61.3	61.6	59.5	54.6	47.4	44.0	34.2	31.2	30.4	31.6	34.5	38.5	40.0	35.4	33.0	33.1	114.1	49.2	34.6	69.0	35.9	67.9	38.4	40.6	39.9	41.1	42.3	43.3	44.3
PRMLxT2	2019/06/19 16:16:29	-55.5	107.1	97.7	88.0	83.3	71.7	67.2	65.6	56.3	53.1	45.5	42.2	38.3	34.9	36.1	39.2	41.4	38.5	40.8	40.6	36.9	35.0	33.1	114.3	49.3	34.4	69.3	37.0	68.5	39.0	41.1	40.0	41.5	42.3	43.4	44.7

Calibration Certificate

Certificate Number 2019008834

Customer:
Equity Environmental Eng
500 International Drive
Mount Olive, NJ 07828, United States

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	6755	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	16 Jul 2019		
Initial Condition	Adjusted	***Calibration Due***	16 Jul 2020		
		Temperature	24	°C	± 0.3 °C
Description	Larson Davis CAL200 Acoustic Calibrator	***Humidity***	36	%RH	± 3 %RH
		Static Pressure	101.2	kPa	± 1 kPa

Evaluation Method The data is aquired by the insert voltage calibration method using the reference microphone's open circuit sensitivity. Data reported in dB re 20 µPa.

Compliance Standards Compliant to Manufacturer Specifications per D0001.8190 and the following standards:
IEC 60942:2017 ANSI S1.40-2006

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Standards Used

Description	Cal Date	Cal Due	Cal Standard
Agilent 34401A DMM	09/06/2018	09/06/2019	001021
Larson Davis Model 2900 Real Time Analyzer	04/02/2019	04/02/2020	001051
Microphone Calibration System	03/04/2019	03/04/2020	005446
1/2" Preamplifier	09/20/2018	09/20/2019	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/07/2018	08/07/2019	006507
1/2 inch Microphone - RI - 200V	11/12/2018	11/12/2019	006511
Pressure Transducer	06/24/2019	06/24/2020	007310

Output Level

Nominal Level [dB]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
114	101.3	114.00	113.80	114.20	0.14	Pass
94	101.2	93.99	93.80	94.20	0.14	Pass

-- End of measurement results--

Frequency

Nominal Level [dB]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
114	101.3	1,000.13	990.00	1,010.00	0.20	Pass
94	101.2	1,000.15	990.00	1,010.00	0.20	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N)

Nominal Level [dB]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
114	101.3	0.40	0.00	2.00	0.25 ‡	Pass
94	101.2	0.41	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Level Change Over Pressure

Tested at: 114 dB, 23 °C, 37 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
108.0	107.9	-0.02	-0.30	0.30	0.04 ‡	Pass
101.3	101.5	0.00	-0.30	0.30	0.04 ‡	Pass
92.0	92.2	0.03	-0.30	0.30	0.04 ‡	Pass
83.0	82.7	0.03	-0.30	0.30	0.04 ‡	Pass
74.0	74.0	0.01	-0.30	0.30	0.04 ‡	Pass
65.0	65.1	-0.05	-0.30	0.30	0.04 ‡	Pass

-- End of measurement results--

Frequency Change Over Pressure

Tested at: 114 dB, 23 °C, 37 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
108.0	107.9	0.00	-10.00	10.00	0.20 ‡	Pass
101.3	101.5	0.00	-10.00	10.00	0.20 ‡	Pass
92.0	92.2	0.00	-10.00	10.00	0.20 ‡	Pass
83.0	82.7	0.00	-10.00	10.00	0.20 ‡	Pass
74.0	74.0	-0.01	-10.00	10.00	0.20 ‡	Pass
65.0	65.1	-0.01	-10.00	10.00	0.20 ‡	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N) Over Pressure

Tested at: 114 dB, 23 °C, 37 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
108.0	107.9	0.40	0.00	2.00	0.25 ‡	Pass
101.3	101.5	0.40	0.00	2.00	0.25 ‡	Pass
92.0	92.2	0.41	0.00	2.00	0.25 ‡	Pass
83.0	82.7	0.43	0.00	2.00	0.25 ‡	Pass
74.0	74.0	0.45	0.00	2.00	0.25 ‡	Pass
65.0	65.1	0.49	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Signatory: *Scott Montgomery*

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ilac-MRA ACCREDITED Cert. #3622.01

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Calibration Certificate

Certificate Number 2019008867

Customer:

Equity Environmental Eng
500 International Drive
Mount Olive, NJ 07828, United States

Model Number	LxT2
Serial Number	0002230
Test Results	**Pass**
Initial Condition	AS RECEIVED same as shipped
Description	SoundTrack LxT Class 2 Class 2 Sound Level Meter Firmware Revision: 2.302

Procedure Number	D0001.8378	
Technician	Ron Harris	
Calibration Date	17 Jul 2019	
Calibration Due	17 Jul 2020	
Temperature	23.68 °C	± 0.25 °C
Humidity	51.2 %RH	± 2.0 %RH
Static Pressure	86.15 kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRMLxT2 S/N 013562 and an 18.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 23.6 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 2	ANSI S1.4-2014 Class 2
IEC 60804:2000 Type 2	ANSI S1.4 (R2006) Type 2
IEC 61252:2002	ANSI S1.11 (R2009) Class 2
IEC 61260:2001 Class 2	ANSI S1.25 (R2007)
IEC 61672:2013 Class 2	ANSI S1.43 (R2007) Type 2

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ACCREDITED Cert. #3622.01

LARSON DAVIS
A PCB PIEZOTRONICS DIV.

Periodic tests were performed in accordance with precedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

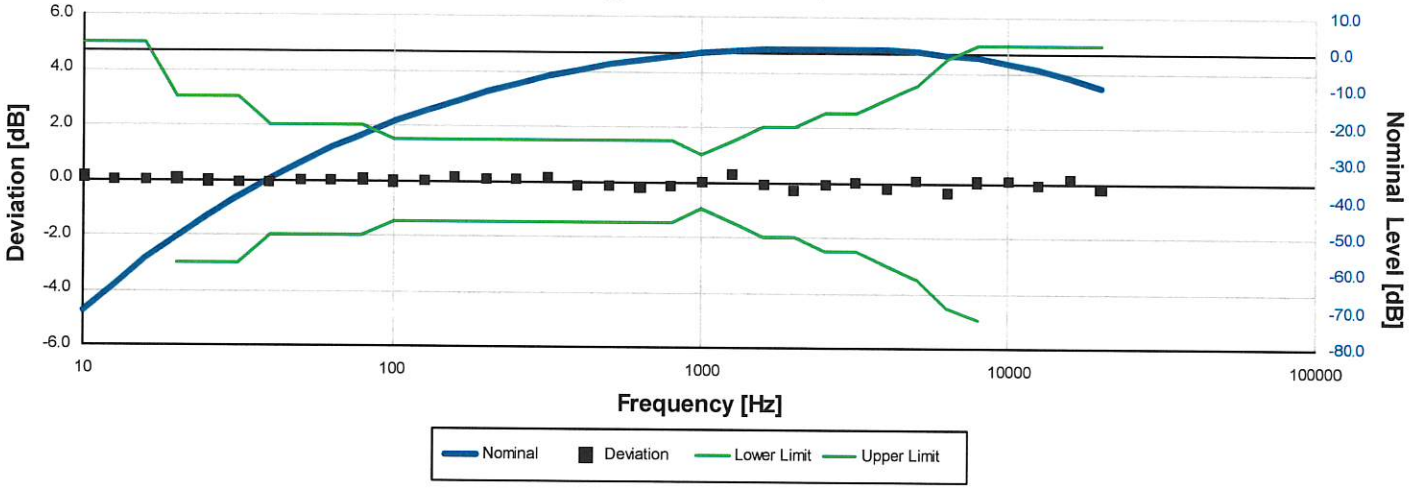
No Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 available.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 because (a) evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the class 2 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3 cover only a limited subset of the specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Hart Scientific 2626-H Temperature Probe	2018-08-19	2019-08-19	006798
SRS DS360 Ultra Low Distortion Generator	2019-01-24	2020-01-24	007118

A-weight Filter Response

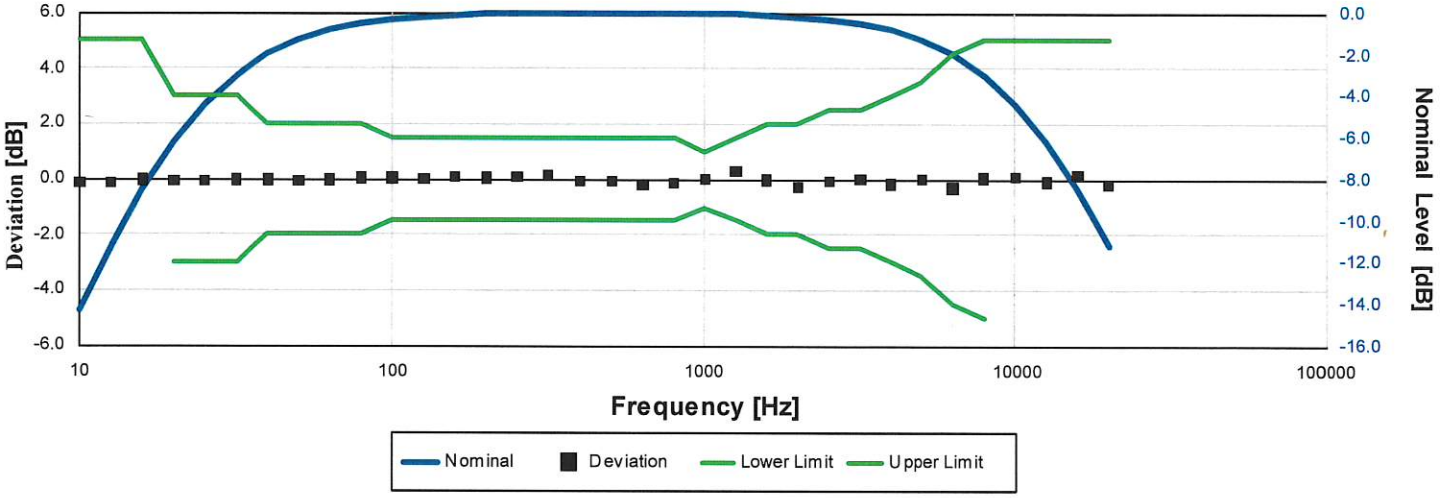


Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Deviation [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
10.00	-70.29	0.11	-inf	5.00	0.25	Pass
12.59	-63.40	0.00	-inf	5.00	0.25	Pass
15.85	-56.68	0.02	-inf	5.00	0.25	Pass
19.95	-50.46	0.04	-3.00	3.00	0.25	Pass
25.12	-44.73	-0.03	-3.00	3.00	0.25	Pass
31.62	-39.44	-0.04	-3.00	3.00	0.25	Pass
39.81	-34.65	-0.05	-2.00	2.00	0.25	Pass
50.12	-30.20	0.00	-2.00	2.00	0.25	Pass
63.10	-26.19	0.01	-2.00	2.00	0.25	Pass
79.43	-22.45	0.05	-2.00	2.00	0.25	Pass
100.00	-19.13	-0.03	-1.50	1.50	0.25	Pass
125.89	-16.11	-0.01	-1.50	1.50	0.25	Pass
158.49	-13.28	0.12	-1.50	1.50	0.25	Pass
199.53	-10.79	0.11	-1.50	1.50	0.25	Pass
251.19	-8.55	0.05	-1.50	1.50	0.25	Pass
316.23	-6.45	0.15	-1.50	1.50	0.25	Pass
398.11	-4.92	-0.12	-1.50	1.50	0.25	Pass
501.19	-3.34	-0.14	-1.50	1.50	0.25	Pass
630.96	-2.11	-0.21	-1.50	1.50	0.25	Pass
794.33	-0.96	-0.16	-1.50	1.50	0.25	Pass
1,000.00	0.00	0.00	-1.00	1.00	0.25	Pass
1,258.93	0.93	0.33	-1.50	1.50	0.25	Pass
1,584.89	0.93	-0.07	-2.00	2.00	0.25	Pass
1,995.26	0.89	-0.31	-2.00	2.00	0.25	Pass
2,511.89	1.22	-0.08	-2.50	2.50	0.25	Pass
3,162.28	1.22	0.02	-2.50	2.50	0.25	Pass
3,981.07	0.81	-0.19	-3.00	3.00	0.25	Pass
5,011.87	0.57	0.07	-3.50	3.50	0.25	Pass
6,309.57	-0.44	-0.34	-4.50	4.50	0.25	Pass
7,943.28	-1.06	0.04	-5.00	5.00	0.25	Pass
10,000.00	-2.42	0.08	-inf	5.00	0.25	Pass
12,589.25	-4.37	-0.07	-inf	5.00	0.25	Pass
15,848.93	-6.43	0.17	-inf	5.00	0.25	Pass
19,952.62	-9.49	-0.19	-inf	5.00	0.25	Pass

-- End of measurement results--

C-weight Filter Response

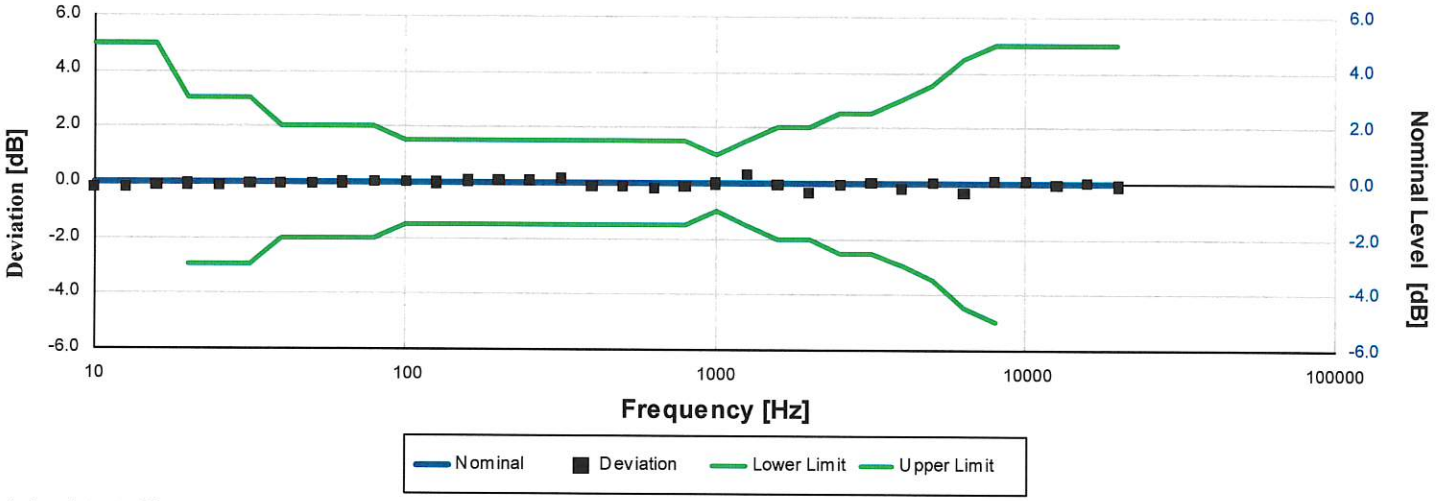


Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Deviation [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
10.00	-14.41	-0.11	-inf	5.00	0.25	Pass
12.59	-11.33	-0.13	-inf	5.00	0.25	Pass
15.85	-8.53	-0.03	-inf	5.00	0.25	Pass
19.95	-6.25	-0.05	-3.00	3.00	0.25	Pass
25.12	-4.44	-0.04	-3.00	3.00	0.25	Pass
31.62	-3.02	-0.02	-3.00	3.00	0.25	Pass
39.81	-2.02	-0.02	-2.00	2.00	0.25	Pass
50.12	-1.33	-0.03	-2.00	2.00	0.25	Pass
63.10	-0.82	-0.02	-2.00	2.00	0.25	Pass
79.43	-0.46	0.04	-2.00	2.00	0.25	Pass
100.00	-0.25	0.05	-1.50	1.50	0.25	Pass
125.89	-0.18	0.02	-1.50	1.50	0.25	Pass
158.49	-0.02	0.08	-1.50	1.50	0.25	Pass
199.53	0.04	0.04	-1.50	1.50	0.25	Pass
251.19	0.08	0.08	-1.50	1.50	0.25	Pass
316.23	0.18	0.18	-1.50	1.50	0.25	Pass
398.11	-0.07	-0.07	-1.50	1.50	0.25	Pass
501.19	-0.08	-0.08	-1.50	1.50	0.25	Pass
630.96	-0.18	-0.18	-1.50	1.50	0.25	Pass
794.33	-0.12	-0.12	-1.50	1.50	0.25	Pass
1,000.00	0.00	0.00	-1.00	1.00	0.25	Pass
1,258.93	0.30	0.30	-1.50	1.50	0.25	Pass
1,584.89	-0.13	-0.03	-2.00	2.00	0.25	Pass
1,995.26	-0.48	-0.28	-2.00	2.00	0.25	Pass
2,511.89	-0.35	-0.05	-2.50	2.50	0.25	Pass
3,162.28	-0.48	0.02	-2.50	2.50	0.25	Pass
3,981.07	-0.98	-0.18	-3.00	3.00	0.25	Pass
5,011.87	-1.27	0.03	-3.50	3.50	0.25	Pass
6,309.57	-2.31	-0.31	-4.50	4.50	0.25	Pass
7,943.28	-2.95	0.05	-5.00	5.00	0.25	Pass
10,000.00	-4.34	0.06	-inf	5.00	0.25	Pass
12,589.25	-6.29	-0.09	-inf	5.00	0.25	Pass
15,848.93	-8.36	0.14	-inf	5.00	0.25	Pass
19,952.62	-11.41	-0.21	-inf	5.00	0.25	Pass

-- End of measurement results--

Z-weight Filter Response



Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Deviation [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
10.00	-0.20	-0.20	-inf	5.00	0.25	Pass
12.59	-0.17	-0.17	-inf	5.00	0.25	Pass
15.85	-0.09	-0.09	-inf	5.00	0.25	Pass
19.95	-0.08	-0.08	-3.00	3.00	0.25	Pass
25.12	-0.09	-0.09	-3.00	3.00	0.25	Pass
31.62	-0.05	-0.05	-3.00	3.00	0.25	Pass
39.81	-0.05	-0.05	-2.00	2.00	0.25	Pass
50.12	-0.02	-0.02	-2.00	2.00	0.25	Pass
63.10	-0.01	-0.01	-2.00	2.00	0.25	Pass
79.43	0.04	0.04	-2.00	2.00	0.25	Pass
100.00	0.05	0.05	-1.50	1.50	0.25	Pass
125.89	-0.01	-0.01	-1.50	1.50	0.25	Pass
158.49	0.07	0.07	-1.50	1.50	0.25	Pass
199.53	0.08	0.08	-1.50	1.50	0.25	Pass
251.19	0.08	0.08	-1.50	1.50	0.25	Pass
316.23	0.16	0.16	-1.50	1.50	0.25	Pass
398.11	-0.10	-0.10	-1.50	1.50	0.25	Pass
501.19	-0.11	-0.11	-1.50	1.50	0.25	Pass
630.96	-0.21	-0.21	-1.50	1.50	0.25	Pass
794.33	-0.14	-0.14	-1.50	1.50	0.25	Pass
1,000.00	0.00	0.00	-1.00	1.00	0.25	Pass
1,258.93	0.33	0.33	-1.50	1.50	0.25	Pass
1,584.89	-0.05	-0.05	-2.00	2.00	0.25	Pass
1,995.26	-0.32	-0.32	-2.00	2.00	0.25	Pass
2,511.89	-0.06	-0.06	-2.50	2.50	0.25	Pass
3,162.28	0.01	0.01	-2.50	2.50	0.25	Pass
3,981.07	-0.18	-0.18	-3.00	3.00	0.25	Pass
5,011.87	0.01	0.01	-3.50	3.50	0.25	Pass
6,309.57	-0.32	-0.32	-4.50	4.50	0.25	Pass
7,943.28	0.09	0.09	-5.00	5.00	0.25	Pass
10,000.00	0.13	0.13	-inf	5.00	0.25	Pass
12,589.25	-0.04	-0.04	-inf	5.00	0.25	Pass
15,848.93	0.04	0.04	-inf	5.00	0.25	Pass
19,952.62	-0.08	-0.08	-inf	5.00	0.25	Pass

-- End of measurement results--

High Level Stability

Electrical signal test of high level stability performed according to IEC 61672-3:2013 21 and ANSI S1.4-2014 Part 3: 21 for compliance to IEC 61672-1:2013 5.15 and ANSI S1.4-2014 Part 1: 5.15

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
High Level Stability	0.00	-0.30	0.30	0.01 ‡	Pass

-- End of measurement results--

Long-Term Stability

Electrical signal test of long term stability performed according to IEC 61672-3:2013 15 and ANSI S1.4-2014 Part 3: 15 for compliance to ISC 61672-1:2013 5.14 and ANSI S1.4-2014 Part 1: 5.14

Test Duration [min]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
35	0.00	-0.30	0.30	0.07 ‡	Pass

-- End of measurement results--

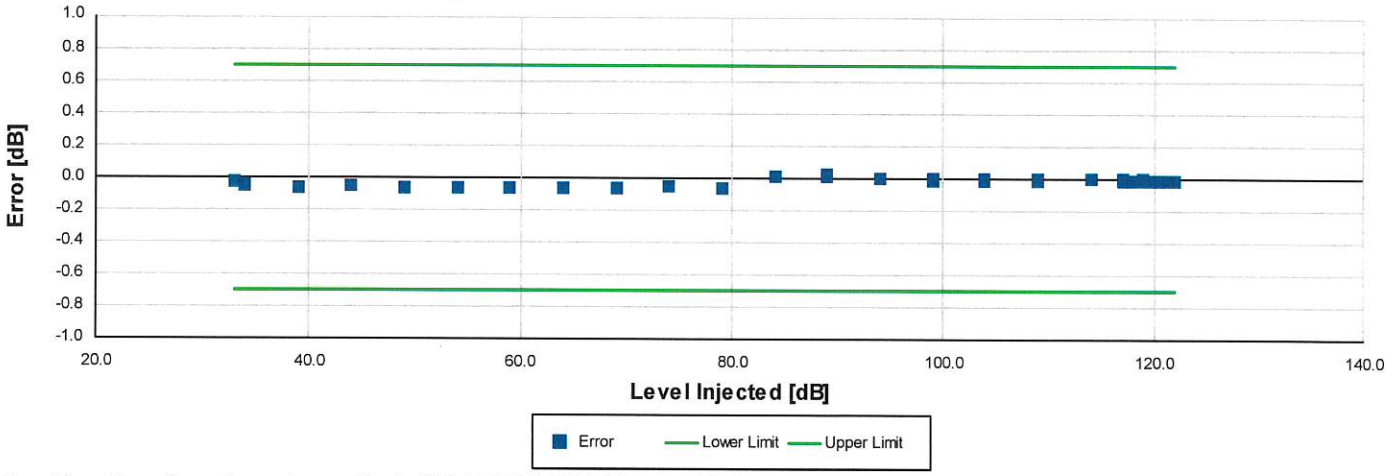
1 kHz Reference Levels

Frequency weightings and time weightings at 1 kHz (reference is A weighted Fast) performed according to IEC 61672-3:2013 14 and ANSI S1.4-2014 Part 3: 14 for compliance to IEC 61672-1:2013 5.5.9 and 5.8.3 and ANSI S1.4-2014 Part 1: 5.5.9 and 5.8.3

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
C weight	105.80	105.60	106.00	0.15	Pass
Z weight	105.79	105.60	106.00	0.15	Pass
Slow	105.80	105.70	105.90	0.15	Pass
Impulse	105.80	105.70	105.90	0.15	Pass

-- End of measurement results--

A-weighted Broadband Log Linearity: 8,000.00 Hz

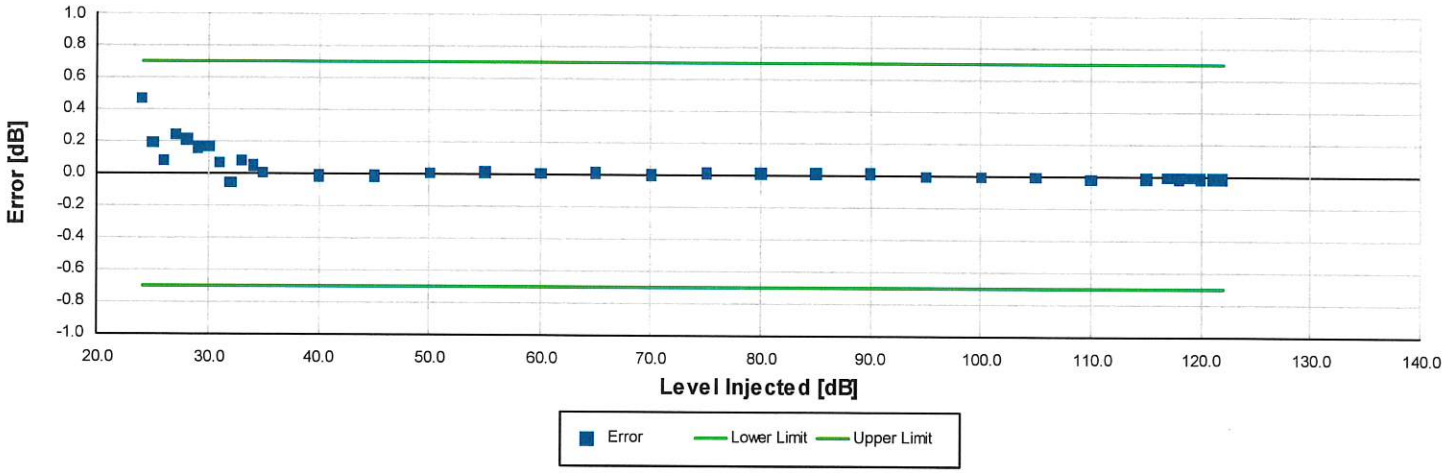


Broadband level linearity performed according to IEC 61672-3:2013 16 and ANSI S1.4-2014 Part 3: 16 for compliance to IEC 61672-1:2013 5.6, IEC 60804:2000 6.2, IEC 61252:2002 8, ANSI S1.4 (R2006) 6.9, ANSI S1.4-2014 Part 1: 5.6, ANSI S1.43 (R2007) 6.2

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
33.00	-0.02	-0.70	0.70	0.16	Pass
34.00	-0.05	-0.70	0.70	0.16	Pass
39.00	-0.06	-0.70	0.70	0.16	Pass
44.00	-0.06	-0.70	0.70	0.16	Pass
49.00	-0.06	-0.70	0.70	0.16	Pass
54.00	-0.06	-0.70	0.70	0.16	Pass
59.00	-0.06	-0.70	0.70	0.16	Pass
64.00	-0.06	-0.70	0.70	0.16	Pass
69.00	-0.06	-0.70	0.70	0.16	Pass
74.00	-0.05	-0.70	0.70	0.16	Pass
79.00	-0.06	-0.70	0.70	0.16	Pass
84.00	0.01	-0.70	0.70	0.16	Pass
89.00	0.02	-0.70	0.70	0.16	Pass
94.00	0.00	-0.70	0.70	0.15	Pass
99.00	-0.01	-0.70	0.70	0.15	Pass
104.00	-0.01	-0.70	0.70	0.15	Pass
109.00	-0.01	-0.70	0.70	0.15	Pass
114.00	0.00	-0.70	0.70	0.15	Pass
117.00	-0.01	-0.70	0.70	0.15	Pass
118.00	-0.01	-0.70	0.70	0.15	Pass
119.00	-0.01	-0.70	0.70	0.15	Pass
120.00	-0.01	-0.70	0.70	0.15	Pass
121.00	-0.01	-0.70	0.70	0.15	Pass
122.00	-0.01	-0.70	0.70	0.15	Pass

-- End of measurement results--

1/1 Octave Log Linearity: 1,000.00 Hz



1/1 octave level linearity at normal range performed according to IEC 61260:2001 4.6, ANSI S.11 (R2009) 4.6

Level [dB]	Error [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
24.00	0.47	-0.70	0.70	0.16	Pass
25.00	0.19	-0.70	0.70	0.16	Pass
26.00	0.08	-0.70	0.70	0.16	Pass
27.00	0.25	-0.70	0.70	0.16	Pass
28.00	0.21	-0.70	0.70	0.16	Pass
29.00	0.16	-0.70	0.70	0.16	Pass
30.00	0.17	-0.70	0.70	0.17	Pass
31.00	0.07	-0.70	0.70	0.16	Pass
32.00	-0.06	-0.70	0.70	0.16	Pass
33.00	0.08	-0.70	0.70	0.16	Pass
34.00	0.05	-0.70	0.70	0.16	Pass
35.00	0.00	-0.70	0.70	0.16	Pass
40.00	-0.01	-0.70	0.70	0.16	Pass
45.00	-0.01	-0.70	0.70	0.16	Pass
50.00	0.00	-0.70	0.70	0.16	Pass
55.00	0.01	-0.70	0.70	0.16	Pass
60.00	0.00	-0.70	0.70	0.16	Pass
65.00	0.01	-0.70	0.70	0.16	Pass
70.00	0.00	-0.70	0.70	0.16	Pass
75.00	0.01	-0.70	0.70	0.16	Pass
80.00	0.01	-0.70	0.70	0.16	Pass
85.00	0.01	-0.70	0.70	0.16	Pass
90.00	0.01	-0.70	0.70	0.16	Pass
95.00	-0.01	-0.70	0.70	0.15	Pass
100.00	-0.01	-0.70	0.70	0.15	Pass
105.00	-0.01	-0.70	0.70	0.15	Pass
110.00	-0.02	-0.70	0.70	0.15	Pass
115.00	-0.01	-0.70	0.70	0.15	Pass
117.00	-0.01	-0.70	0.70	0.15	Pass
118.00	-0.01	-0.70	0.70	0.15	Pass
119.00	-0.01	-0.70	0.70	0.15	Pass
120.00	-0.01	-0.70	0.70	0.15	Pass
121.00	-0.01	-0.70	0.70	0.15	Pass
122.00	-0.01	-0.70	0.70	0.15	Pass

-- End of measurement results--

Slow Detector

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

Amplitude [dB]	Duration [ms]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
136.00	200	-7.53	-8.42	-6.42	0.15	Pass
	2	-27.15	-31.99	-25.99	0.15	Pass

-- End of measurement results--

Fast Detector

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

Amplitude [dB]	Duration [ms]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
136.00	200.00	-1.09	-1.98	0.02	0.26	Pass
	2.00	-18.37	-20.49	-16.99	0.15	Pass
	0.25	-27.47	-31.99	-25.49	0.15	Pass

-- End of measurement results--

Sound Exposure Level

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

Amplitude [dB]	Duration [ms]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
136.00	200.00	-7.01	-7.99	-5.99	0.15	Pass
	2.00	-27.03	-29.49	-25.99	0.15	Pass
	0.25	-36.14	-41.02	-34.52	0.15	Pass

-- End of measurement results--

Peak C-weight

C-weighted peak sound level performed according to IEC 61672-3:2013 19 and ANSI S1.4-2014 Part 3: 19 for compliance to IEC 61672-1:2013 5.13 and ANSI S1.4-2014 Part 1: 5.13

Level [dB]	Frequency [Hz]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
134.00	31.50	137.18	133.50	139.50	0.15	Pass
134.00	500.00	137.56	135.50	139.50	0.15	Pass
134.00	8,000.00	136.74	134.40	140.40	0.15	Pass
134.00, Negative	500.00	136.18	134.40	138.40	0.15	Pass
134.00, Positive	500.00	136.18	134.40	138.40	0.15	Pass

-- End of measurement results--

Peak Z-weight

Z-weighted peak sound level performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

Amplitude [dB]	Duration[µs]		Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
135.20	100	Negative Pulse	127.34	125.00	129.00	0.15	Pass
	100	Positive Pulse	127.32	125.00	129.00	0.15	Pass
125.20	100	Negative Pulse	117.35	115.00	119.00	0.15	Pass
	100	Positive Pulse	117.32	115.00	119.00	0.15	Pass
115.20	100	Negative Pulse	107.31	104.98	108.98	0.15	Pass
	100	Positive Pulse	107.33	104.99	108.99	0.15	Pass
105.20	100	Negative Pulse	97.33	95.05	99.05	0.15	Pass
	100	Positive Pulse	97.34	95.03	99.03	0.15	Pass

-- End of measurement results--

Overload Detector

Overload indication performed according to IEC 61672-3:2013 20 and ANSI S1.4-2014 Part 3: 20 for compliance to IEC 61672-1:2013 5.11, IEC 60804:2000 9.3.5, IEC 61252:2002 11, ANSI S1.4 (R2006) 5.8, and ANSI S1.4-2014 Part 1: 5.11, ANSI S1.25 (R2007) 7.6, ANSI S1.43 (R2007) 7

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
Positive	131.30	130.80	132.80	0.15	Pass
Negative	131.20	130.80	132.80	0.15	Pass
Difference	0.10	-1.50	1.50	0.15	Pass

-- End of measurement results--

Peak Rise Time

Peak rise time performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

Amplitude [dB]	Duration [µs]		Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
139.00	40	Negative Pulse	130.28	128.80	130.80	0.15	Pass
		Positive Pulse	130.28	128.80	130.80	0.15	Pass
	30	Negative Pulse	129.34	128.80	130.80	0.15	Pass
		Positive Pulse	129.34	128.80	130.80	0.15	Pass

-- End of measurement results--

Positive Pulse Crest Factor

200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
137.20	3	OVLD	± 1.00	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
127.20	3	-0.11	± 1.00	0.15 ‡	Pass
	5	-0.13	± 1.00	0.16 ‡	Pass
117.20	3	-0.13	± 1.00	0.15 ‡	Pass
	5	-0.12	± 1.00	0.15 ‡	Pass
107.20	3	-0.13	± 1.00	0.15 ‡	Pass
	5	-0.13	± 1.00	0.15 ‡	Pass

-- End of measurement results--

Negative Pulse Crest Factor

200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
137.20	3	OVLD	± 1.00	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
127.20	3	-0.11	± 1.00	0.15 ‡	Pass
	5	-0.10	± 1.00	0.15 ‡	Pass
117.20	3	-0.14	± 1.00	0.15 ‡	Pass
	5	-0.11	± 1.00	0.15 ‡	Pass
107.20	3	-0.14	± 1.00	0.15 ‡	Pass
	5	-0.13	± 1.00	0.15 ‡	Pass

-- End of measurement results--

Tone Burst

2kHz tone burst tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Tone burst response measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
137.20	3	OVLD	± 1.00	0.15	Pass
	5	OVLD	± 1.00	0.15	Pass
127.20	3	-0.06	± 1.00	0.15	Pass
	5	0.03	± 1.00	0.15	Pass
117.20	3	-0.07	± 1.00	0.15	Pass
	5	0.00	± 1.00	0.15	Pass
107.20	3	-0.07	± 1.00	0.15	Pass
	5	-0.02	± 1.00	0.15	Pass

-- End of measurement results--

Impulse Detector - Repeat

Impulse Detector measured according to IEC 60651:2001 9.4.3 and ANSI S1.4:1983 (R2006) 8.4.3

Amplitude [dB]	Repitition Rate [Hz]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
139	100.00	-2.79	-4.71	-0.71	0.15	Pass
	20.00	-7.56	-9.57	-5.57	0.20	Pass
	2.00	-8.90	-11.76	-5.76	0.15	Pass
Step	2.00	4.97	4.00	6.00	0.15	Pass

-- End of measurement results--

Impulse Detector - Single

Impulse Detector measured according to IEC 60651:2001 9.4.3 and ANSI S1.4:1983 (R2006) 8.4.3

Amplitude [dB]	Duration [ms]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
139	20.00	-3.72	-5.61	-1.61	0.15	Pass
	5.00	-8.92	-11.76	-5.76	0.16	Pass
Step	5.00	5.05	4.00	6.00	0.16	Pass

-- End of measurement results--

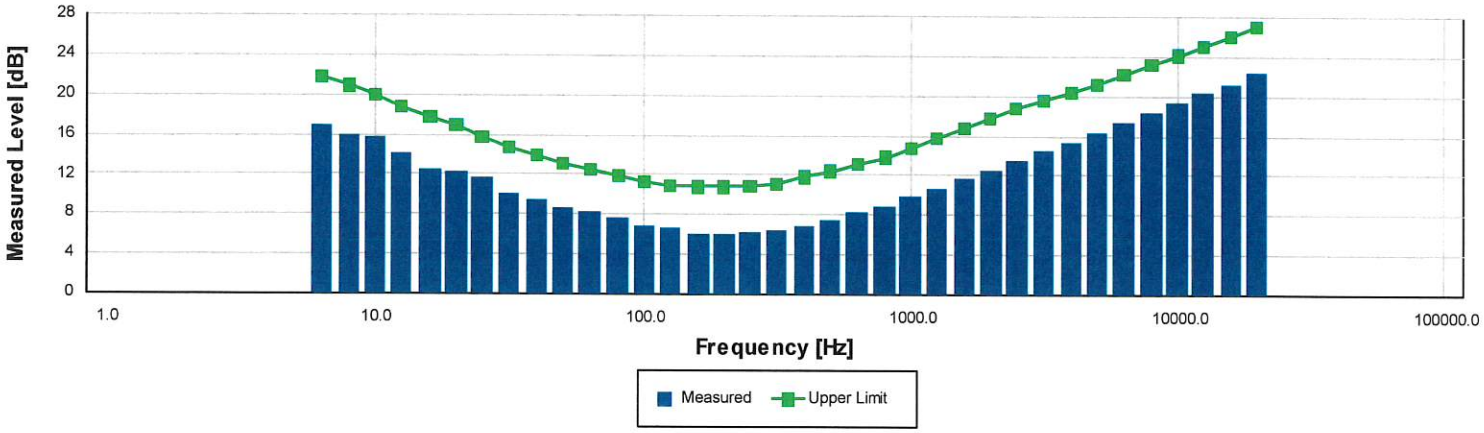
Gain

Gain measured according to IEC 61672-3:2013 17.3 and 17.4 and ANSI S1.4-2014 Part 3: 17.3 and 17.4

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
0 dB Gain	104.02	103.90	104.10	0.15	Pass
0 dB Gain, Linearity	41.13	40.30	41.70	0.16	Pass
OBA Low Range	104.00	103.90	104.10	0.15	Pass
OBA Normal Range	104.00	103.20	104.80	0.15	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



The SLM is set to low range.

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
6.30	16.99	21.80	Pass
8.00	15.91	20.90	Pass
10.00	15.65	20.00	Pass
12.50	14.03	18.80	Pass
16.00	12.56	17.80	Pass
20.00	12.36	16.90	Pass
25.00	11.67	15.70	Pass
31.50	10.15	14.80	Pass
40.00	9.54	13.90	Pass
50.00	8.62	13.10	Pass
63.00	8.20	12.50	Pass
80.00	7.61	11.90	Pass
100.00	6.85	11.30	Pass
125.00	6.69	10.90	Pass
160.00	6.07	10.80	Pass
200.00	6.11	10.80	Pass
250.00	6.20	10.90	Pass
315.00	6.41	11.10	Pass
400.00	6.89	11.80	Pass
500.00	7.52	12.40	Pass
630.00	8.17	13.10	Pass
800.00	8.92	13.80	Pass
1,000.00	9.87	14.80	Pass
1,250.00	10.70	15.70	Pass
1,600.00	11.61	16.70	Pass
2,000.00	12.60	17.70	Pass
2,500.00	13.52	18.70	Pass
3,150.00	14.43	19.50	Pass
4,000.00	15.35	20.30	Pass
5,000.00	16.29	21.20	Pass
6,300.00	17.37	22.20	Pass
8,000.00	18.37	23.20	Pass
10,000.00	19.30	24.10	Pass
12,500.00	20.32	25.10	Pass
16,000.00	21.28	26.10	Pass
20,000.00	22.32	27.10	Pass

-- End of measurement results--

Broadband Noise Floor

Self-generated noise measured according to IEC 61672-3:2013 11.2 and ANSI S1.4-2014 Part 3: 11.2

Measurement	Test Result [dB]	Upper limit [dB]	Result
A-weight Noise Floor	26.81	36.00	Pass
C-weight Noise Floor	26.05	35.00	Pass
Z-weight Noise Floor	33.26	39.00	Pass

-- End of measurement results--

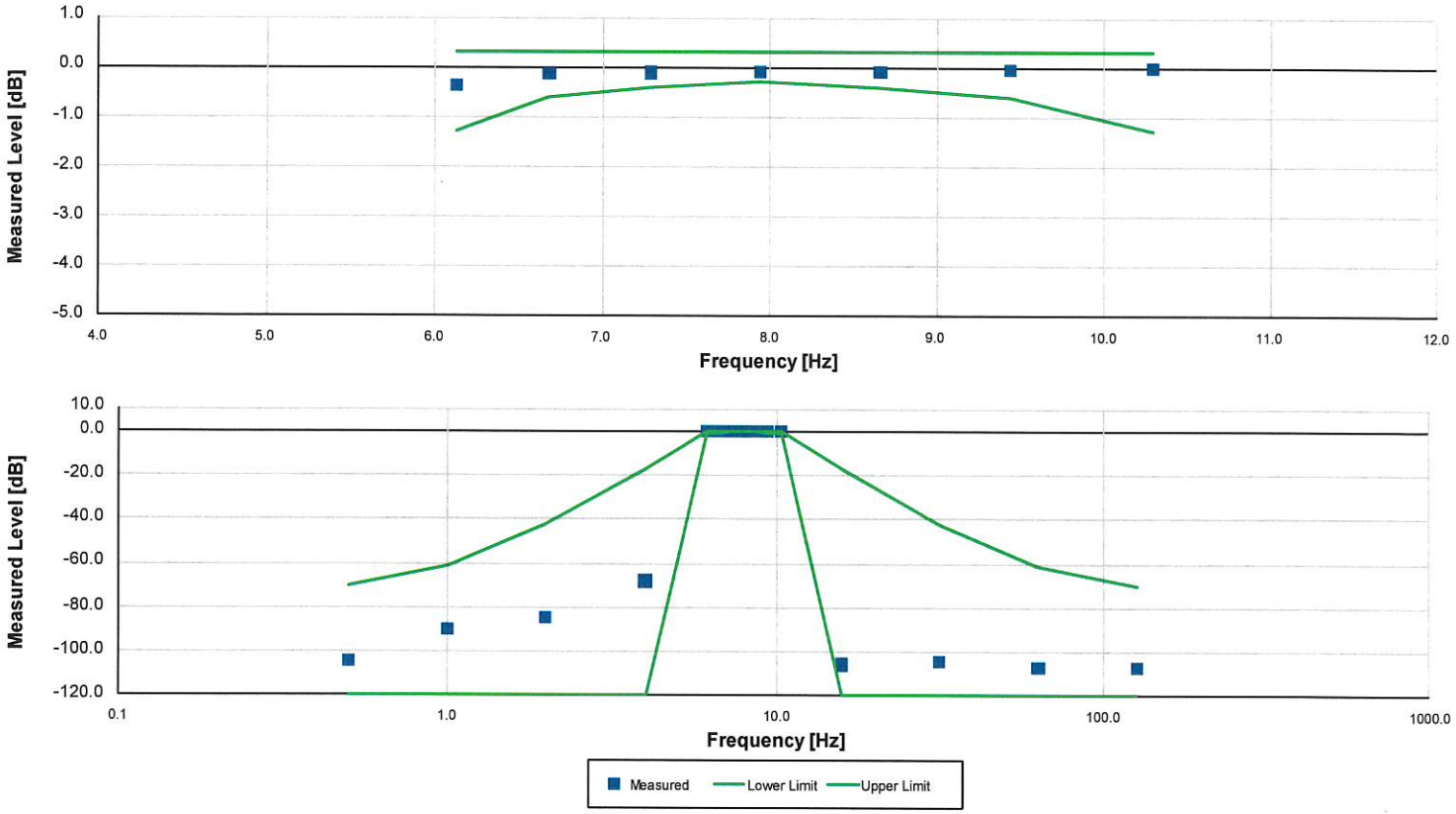
Total Harmonic Distortion

Measured using 1/3-Octave filters

Measurement	Test Result [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
10 Hz Signal	137.42	136.40	138.00	0.15	Pass
THD	-68.34		-58.00	0.01 ‡	Pass
THD+N	-63.88		-58.00	0.01 ‡	Pass

-- End of measurement results--

1/1 Octave Filter: 8.0 Hz

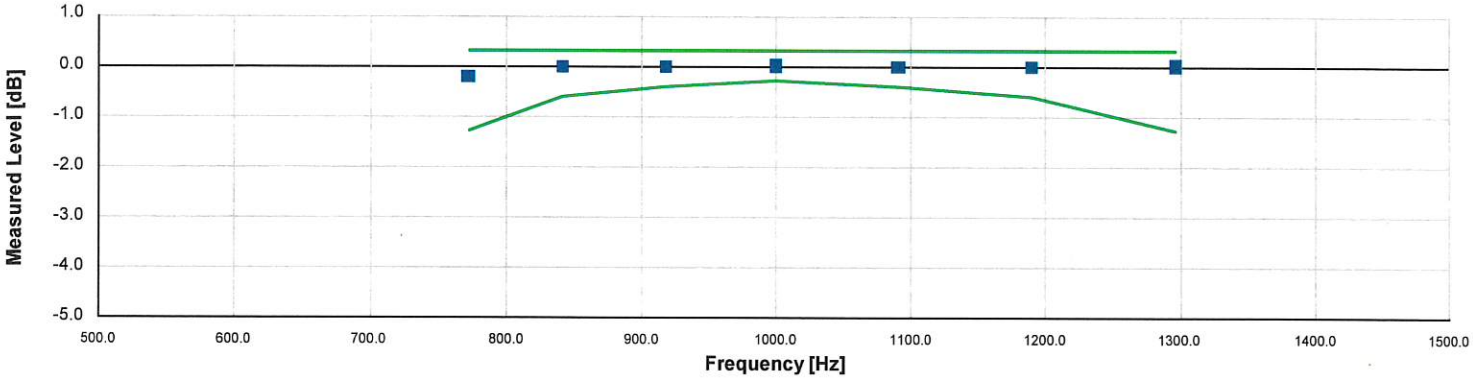


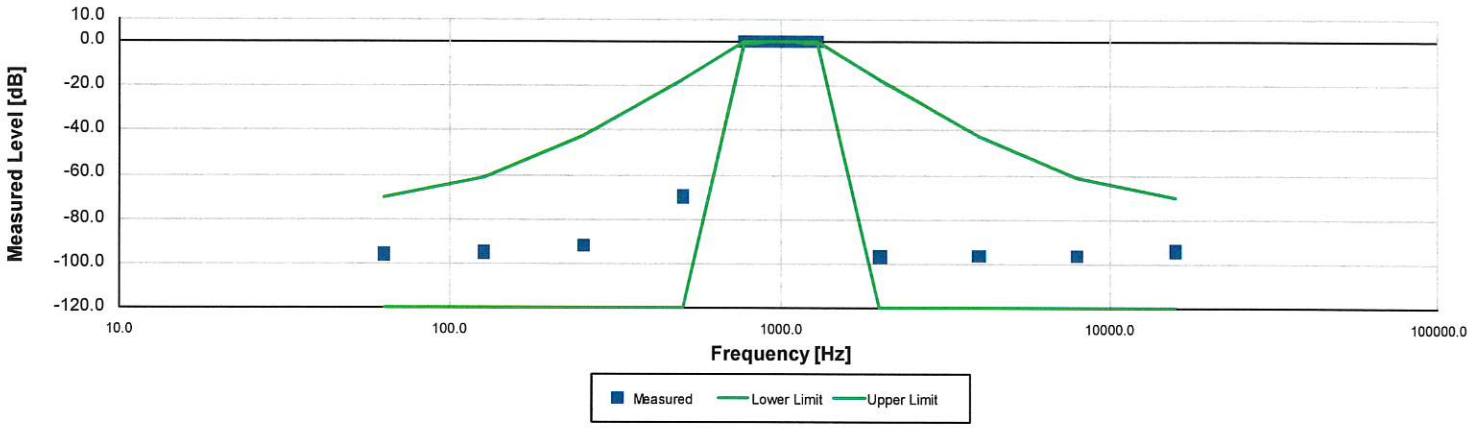
The SLM is set to normal range. Filter shape measured according to IEC 61260:2001 and ANSI S1.11:2004

Frequency [Hz]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
0.50	-104.36	-inf	-70.00	2.70	Pass
1.00	-90.25	-inf	-61.00	2.00	Pass
2.00	-84.95	-inf	-42.00	0.29	Pass
3.98	-68.05	-inf	-17.50	0.34	Pass
6.13	-0.37	-1.30	0.30	0.15	Pass
6.68	-0.14	-0.60	0.30	0.15	Pass
7.29	-0.12	-0.40	0.30	0.15	Pass
7.94	-0.10	-0.30	0.30	0.15	Pass
8.66	-0.08	-0.40	0.30	0.15	Pass
9.44	-0.05	-0.60	0.30	0.15	Pass
10.29	-0.01	-1.30	0.30	0.15	Pass
15.85	-105.79	-inf	-17.50	1.30	Pass
31.62	-104.58	-inf	-42.00	1.70	Pass
63.10	-106.85	-inf	-61.00	1.50	Pass
125.89	-106.81	-inf	-70.00	1.60	Pass

-- End of measurement results--

1/1 Octave Filter: 1 kHz



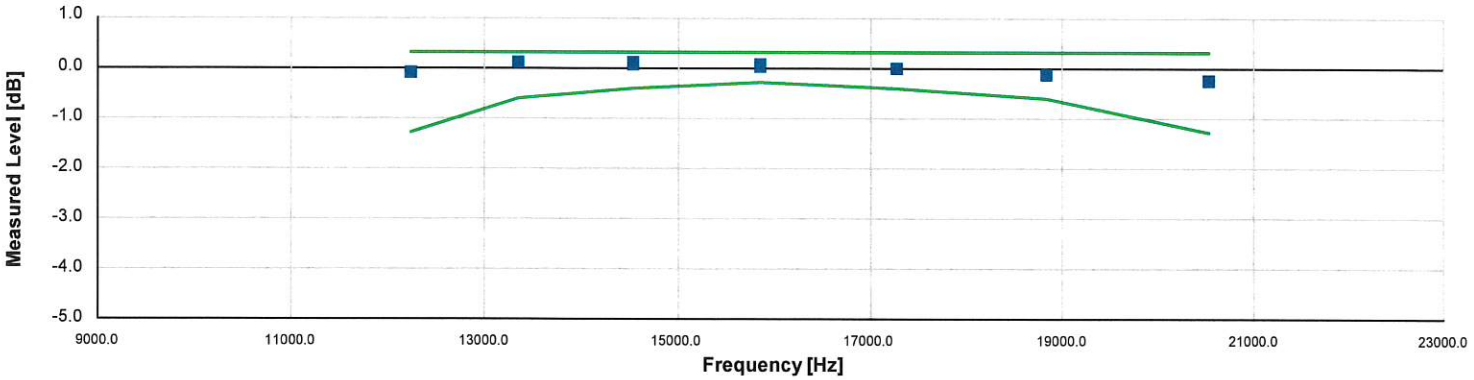


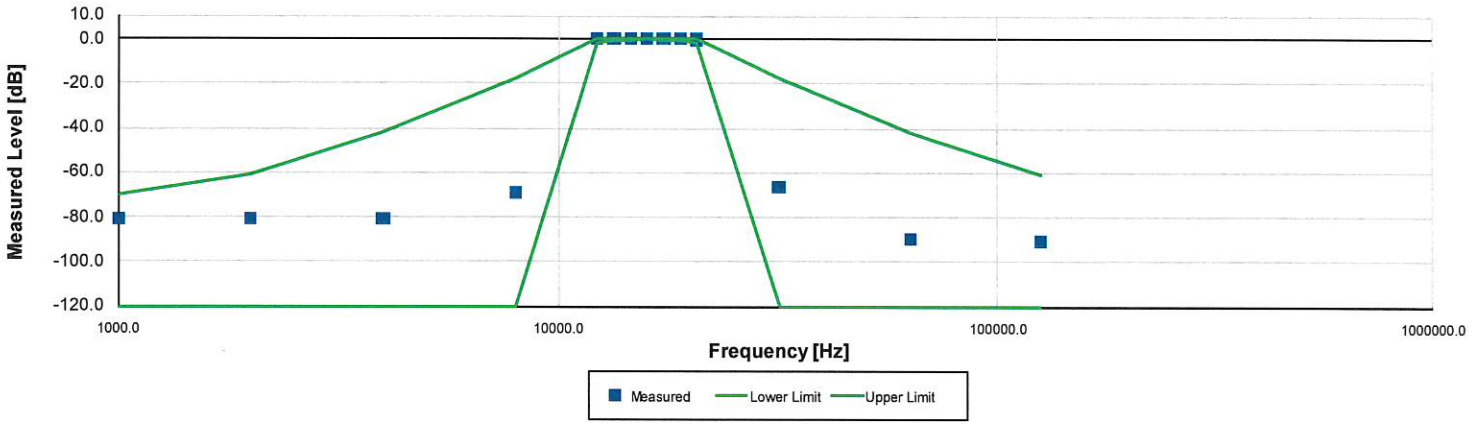
The SLM is set to normal range. Filter shape measured according to IEC 61260:2001 and ANSI S1.11:2004

Frequency [Hz]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
63.10	-95.92	-inf	-70.00	0.27	Pass
125.89	-95.01	-inf	-61.00	0.28	Pass
251.19	-92.02	-inf	-42.00	0.18	Pass
501.19	-69.74	-inf	-17.50	0.15	Pass
771.79	-0.22	-1.30	0.30	0.15	Pass
841.40	-0.02	-0.60	0.30	0.15	Pass
917.28	-0.01	-0.40	0.30	0.15	Pass
1,000.00	0.00	-0.30	0.30	0.15	Pass
1,090.18	-0.02	-0.40	0.30	0.15	Pass
1,188.50	-0.02	-0.60	0.30	0.15	Pass
1,295.69	0.00	-1.30	0.30	0.15	Pass
1,995.26	-96.75	-inf	-17.50	0.27	Pass
3,981.07	-96.60	-inf	-42.00	0.31	Pass
7,943.28	-96.50	-inf	-61.00	0.26	Pass
15,848.93	-94.08	-inf	-70.00	0.26	Pass

-- End of measurement results--

1/1 Octave Filter: 16 kHz





The SLM is set to normal range. Filter shape measured according to IEC 61260:2001 and ANSI S1.11:2004

Frequency [Hz]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
1,000.00	-80.85	-inf	-70.00	0.16	Pass
1,995.26	-80.65	-inf	-61.00	0.16	Pass
3,981.07	-80.61	-inf	-42.00	0.15	Pass
7,943.28	-69.34	-inf	-17.50	0.17	Pass
12,232.07	-0.09	-1.30	0.30	0.15	Pass
13,335.21	0.12	-0.60	0.30	0.15	Pass
14,537.84	0.08	-0.40	0.30	0.15	Pass
15,848.93	0.04	-0.30	0.30	0.15	Pass
17,278.26	-0.02	-0.40	0.30	0.15	Pass
18,836.49	-0.13	-0.60	0.30	0.15	Pass
20,535.25	-0.26	-1.30	0.30	0.15	Pass
31,622.78	-66.78	-inf	-17.50	0.15	Pass
63,095.73	-89.70	-inf	-42.00	0.16	Pass
125,892.54	-90.49	-inf	-61.00	0.15	Pass

-- End of measurement results--

-- End of Report--

Signatory: *Ron Harris*

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Provo, UT 84601, United States
716-684-0001

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Calibration Certificate

Certificate Number 2019008997

Customer:
Equity Environmental Eng
500 International Drive
Mount Olive, NJ 07828, United States

Model Number	375A02	***Procedure Number***	D0001.8387		
Serial Number	010564	***Technician***	Abraham Ortega		
Test Results	**Pass**	***Calibration Date***	19 Jul 2019		
Initial Condition	As Manufactured	***Calibration Due***	19 Jul 2020		
		Temperature	22.5	°C	± 0.01 °C
Description	1/2 inch Microphone - FF - 0V	***Humidity***	35.7	%RH	± 0.5 %RH
		Static Pressure	101.65	kPa	± 0.03 kPa

Evaluation Method Tested electrically using an electrostatic actuator.

Compliance Standards Compliant to Manufacturer Specifications.

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Standards Used

Description	Cal Date	Cal Due	Cal Standard
Larson Davis Model 2900 Real Time Analyzer	07/01/2019	07/01/2020	001230
Microphone Calibration System	08/28/2018	08/28/2019	001233
1/2" Preamplifier	12/17/2018	12/17/2019	001274
Agilent 34401A DMM	12/07/2018	12/07/2019	001329
Larson Davis CAL250 Acoustic Calibrator	01/04/2019	01/04/2020	003030
1/2" Preamplifier	04/12/2019	04/12/2020	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/22/2018	08/22/2019	006507
1/2 inch Microphone - RI - 200V	11/12/2018	11/12/2019	006511
1/2 inch Microphone - RI - 200V	08/09/2018	08/09/2019	006519
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/22/2018	08/22/2019	006530
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/13/2018	08/11/2019	006531

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Sensitivity

Measurement	Test Result [mV/Pa]	Lower limit [mV/Pa]	Upper limit [mV/Pa]	Expanded Uncertainty [mV/Pa]	Result
Open Circuit Sensitivity	30.60	25.12	50.12	0.64	Pass

-- End of measurement results--

Capacitance

Measurement	Test Result [pF]				
Capacitance	17.00			‡	

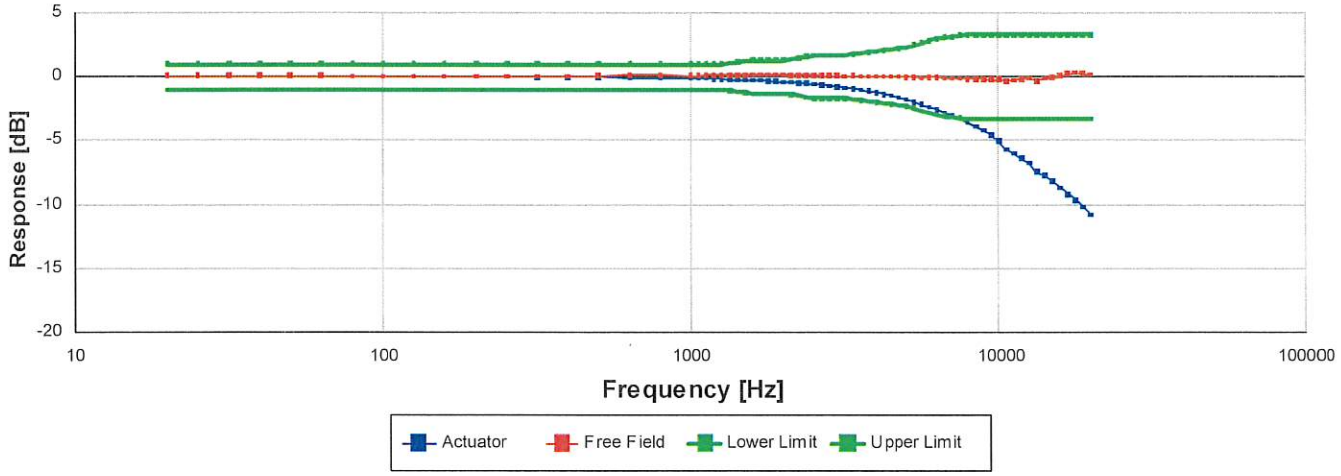
-- End of measurement results--

Lower Limiting Frequency

Measurement	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]		Result
-3 dB Frequency	2.36	1.00	5.00		Pass ‡

-- End of measurement results--

Frequency Response



Data is normalized for 0 dB @ 251.19 Hz.

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
19.95	0.09	0.09	-1.00	1.00	Pass ‡
25.12	0.09	0.09	-1.00	1.00	Pass ‡
31.62	0.09	0.09	-1.00	1.00	Pass ‡
39.81	0.09	0.09	-1.00	1.00	Pass ‡
50.12	0.08	0.08	-1.00	1.00	Pass ‡
63.10	0.07	0.07	-1.00	1.00	Pass ‡
79.43	0.06	0.06	-1.00	1.00	Pass ‡
100.00	0.05	0.05	-1.00	1.00	Pass ‡
125.89	0.03	0.03	-1.00	1.00	Pass ‡
158.49	0.02	0.02	-1.00	1.00	Pass ‡
199.53	0.01	0.01	-1.00	1.00	Pass ‡

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
251.19	0.00	0.00	-1.00	1.00	Pass ‡
316.23	-0.01	0.05	-1.00	1.00	Pass ‡
398.11	-0.03	0.06	-1.00	1.00	Pass ‡
501.19	-0.04	0.07	-1.00	1.00	Pass ‡
630.96	-0.06	0.12	-1.00	1.00	Pass ‡
794.33	-0.09	0.11	-1.00	1.00	Pass ‡
1,000.00	-0.13	0.10	-1.00	1.00	Pass ‡
1,059.25	-0.14	0.10	-1.00	1.00	Pass ‡
1,122.02	-0.15	0.12	-1.00	1.00	Pass ‡
1,188.50	-0.17	0.11	-1.00	1.00	Pass ‡
1,258.93	-0.18	0.12	-1.00	1.00	Pass ‡
1,333.52	-0.20	0.11	-1.08	1.08	Pass ‡
1,412.54	-0.22	0.12	-1.15	1.15	Pass ‡
1,496.24	-0.24	0.14	-1.23	1.23	Pass ‡
1,584.89	-0.27	0.16	-1.30	1.30	Pass ‡
1,678.80	-0.29	0.15	-1.30	1.30	Pass ‡
1,778.28	-0.32	0.16	-1.30	1.30	Pass ‡
1,883.65	-0.35	0.16	-1.30	1.30	Pass ‡
1,995.26	-0.39	0.15	-1.30	1.30	Pass ‡
2,113.49	-0.43	0.13	-1.40	1.40	Pass ‡
2,238.72	-0.46	0.12	-1.50	1.50	Pass ‡
2,371.37	-0.50	0.11	-1.60	1.60	Pass ‡
2,511.89	-0.55	0.12	-1.70	1.70	Pass ‡
2,660.73	-0.63	0.09	-1.70	1.70	Pass ‡
2,818.38	-0.69	0.08	-1.70	1.70	Pass ‡
2,985.38	-0.76	0.07	-1.70	1.70	Pass ‡
3,162.28	-0.84	0.06	-1.70	1.70	Pass ‡
3,349.65	-0.92	0.07	-1.78	1.78	Pass ‡
3,548.13	-1.02	0.05	-1.85	1.85	Pass ‡
3,758.37	-1.14	0.02	-1.93	1.93	Pass ‡
3,981.07	-1.25	0.03	-2.00	2.00	Pass ‡
4,216.97	-1.37	0.01	-2.08	2.08	Pass ‡
4,466.84	-1.50	0.02	-2.15	2.15	Pass ‡
4,731.51	-1.65	0.01	-2.23	2.23	Pass ‡
5,011.87	-1.81	-0.02	-2.30	2.30	Pass ‡
5,308.84	-1.97	-0.04	-2.48	2.48	Pass ‡
5,623.41	-2.16	-0.10	-2.65	2.65	Pass ‡
5,956.62	-2.36	-0.04	-2.83	2.83	Pass ‡
6,309.57	-2.58	-0.04	-3.00	3.00	Pass ‡
6,683.44	-2.82	-0.09	-3.08	3.08	Pass ‡
7,079.46	-3.05	-0.11	-3.15	3.15	Pass ‡
7,498.94	-3.31	-0.12	-3.23	3.23	Pass ‡
7,943.28	-3.61	-0.18	-3.30	3.30	Pass ‡
8,413.95	-3.90	-0.16	-3.30	3.30	Pass ‡
8,912.51	-4.22	-0.18	-3.30	3.30	Pass ‡
9,440.61	-4.56	-0.20	-3.30	3.30	Pass ‡
10,000.00	-5.04	-0.23	-3.30	3.30	Pass ‡
10,592.54	-5.67	-0.32	-3.30	3.30	Pass ‡
11,220.19	-5.99	-0.26	-3.30	3.30	Pass ‡
11,885.02	-6.39	-0.17	-3.30	3.30	Pass ‡
12,589.25	-6.78	-0.12	-3.30	3.30	Pass ‡
13,335.21	-7.44	-0.32	-3.30	3.30	Pass ‡
14,125.38	-7.75	-0.13	-3.30	3.30	Pass ‡

Frequency [Hz]	Actuator [dB]	Free Field [dB]	Lower limit [dB]	Upper limit [dB]	Result
14,962.36	-8.21	-0.06	-3.30	3.30	Pass ‡
15,848.93	-8.74	0.07	-3.30	3.30	Pass ‡
16,788.04	-9.22	0.23	-3.30	3.30	Pass ‡
17,782.80	-9.68	0.31	-3.30	3.30	Pass ‡
18,836.49	-10.24	0.24	-3.30	3.30	Pass ‡
19,952.62	-10.82	0.19	-3.30	3.30	Pass ‡

-- End of measurement results--

Signatory: *Abraham Ortega*

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Calibration Certificate

Certificate Number 2019008863
Customer:
Equity Environmental Eng
500 International Drive
Mount Olive, NJ 07828, United States

Model Number	PRMLxT2	***Procedure Number***	D0001.8383		
Serial Number	013562	***Technician***	Ron Harris		
Test Results	**Pass**	***Calibration Date***	17 Jul 2019		
Initial Condition	AS RECEIVED same as shipped	***Calibration Due***	17 Jul 2020		
Description	Larson Davis 1/2" Preamplifier for LxT Class 2 -15 dB	***Temperature***	23.48	°C	± 0.01 °C
		Humidity	49.5	%RH	± 0.5 %RH
		Static Pressure	86.11	kPa	± 0.03 kPa

Evaluation Method Tested electrically using an 18.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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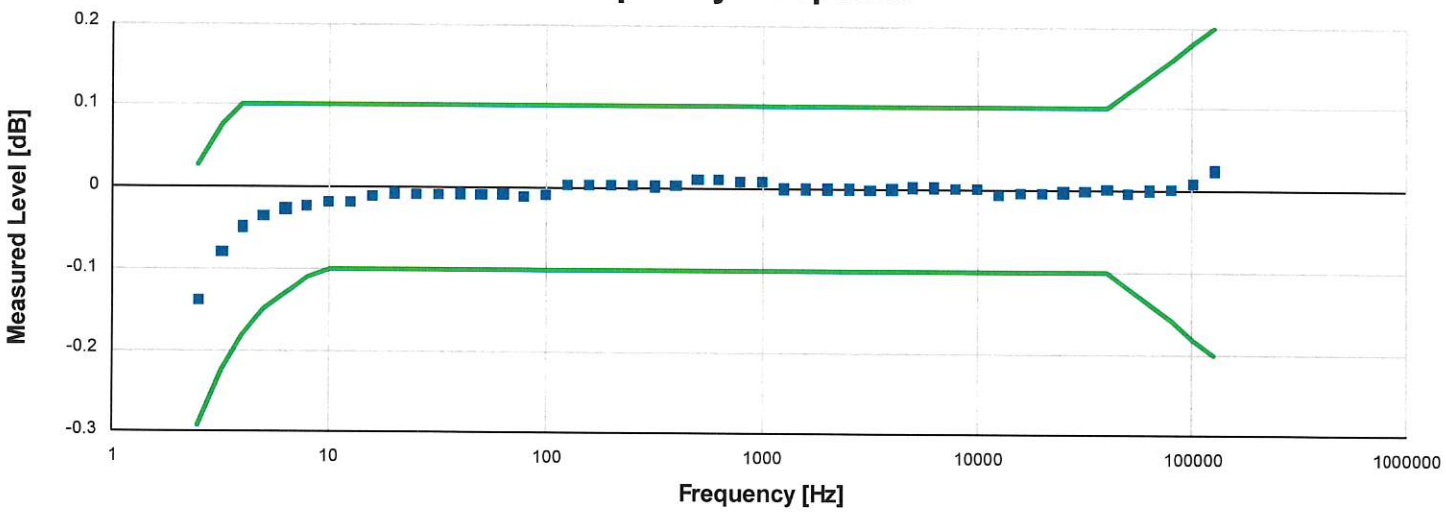
Standards Used

Description	Cal Date	Cal Due	Cal Standard
Larson Davis Model 2900 Real Time Analyzer	03/07/2019	03/07/2020	003003
Hart Scientific 2626-H Temperature Probe	08/19/2018	08/19/2019	006798
Agilent 34401A DMM	07/01/2019	07/01/2020	007165
SRS DS360 Ultra Low Distortion Generator	10/04/2018	10/04/2019	007167

Frequency Response



Frequency response electrically tested at 120.0 dB re 1 µV

Frequency [Hz]	Test Result [dB re 1 kHz]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
2.50	-0.14	-0.29	0.03	0.14	Pass
3.20	-0.08	-0.22	0.08	0.15	Pass
4.00	-0.05	-0.18	0.10	0.15	Pass
5.00	-0.04	-0.15	0.10	0.14	Pass
6.30	-0.03	-0.13	0.10	0.14	Pass
7.90	-0.02	-0.11	0.10	0.14	Pass
10.00	-0.02	-0.10	0.10	0.14	Pass
12.60	-0.02	-0.10	0.10	0.14	Pass
15.80	-0.01	-0.10	0.10	0.14	Pass
20.00	-0.01	-0.10	0.10	0.14	Pass
25.10	-0.01	-0.10	0.10	0.14	Pass
31.60	-0.01	-0.10	0.10	0.14	Pass
39.80	-0.01	-0.10	0.10	0.14	Pass
50.10	-0.01	-0.10	0.10	0.14	Pass
63.10	-0.01	-0.10	0.10	0.14	Pass
79.40	-0.01	-0.10	0.10	0.14	Pass
100.00	-0.01	-0.10	0.10	0.14	Pass
125.90	0.00	-0.10	0.10	0.14	Pass
158.50	0.00	-0.10	0.10	0.14	Pass
199.50	0.00	-0.10	0.10	0.14	Pass
251.20	0.00	-0.10	0.10	0.14	Pass
316.20	0.00	-0.10	0.10	0.14	Pass
398.10	0.00	-0.10	0.10	0.14	Pass
501.20	0.01	-0.10	0.10	0.14	Pass
631.00	0.01	-0.10	0.10	0.14	Pass
794.30	0.01	-0.10	0.10	0.14	Pass
1,000.00	0.01	-0.10	0.10	0.14	Pass
1,258.90	0.00	-0.10	0.10	0.14	Pass
1,584.90	0.00	-0.10	0.10	0.14	Pass
1,995.30	0.00	-0.10	0.10	0.14	Pass
2,511.90	0.00	-0.10	0.10	0.14	Pass
3,162.30	0.00	-0.10	0.10	0.14	Pass

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Frequency [Hz]	Test Result [dB re 1 kHz]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
3,981.10	0.00	-0.10	0.10	0.14	Pass
5,011.90	0.00	-0.10	0.10	0.14	Pass
6,309.60	0.00	-0.10	0.10	0.14	Pass
7,943.30	0.00	-0.10	0.10	0.14	Pass
10,000.00	0.00	-0.10	0.10	0.14	Pass
12,589.30	-0.01	-0.10	0.10	0.14	Pass
15,848.90	0.00	-0.10	0.10	0.14	Pass
19,952.60	0.00	-0.10	0.10	0.14	Pass
25,118.90	0.00	-0.10	0.10	0.14	Pass
31,622.80	0.00	-0.10	0.10	0.14	Pass
39,810.70	0.00	-0.10	0.10	0.14	Pass
50,118.70	0.00	-0.12	0.12	0.15	Pass
63,095.70	0.00	-0.14	0.14	0.15	Pass
79,432.80	0.00	-0.16	0.16	0.15	Pass
100,000.00	0.01	-0.18	0.18	0.15	Pass
125,892.50	0.02	-0.20	0.20	0.16	Pass

Gain Measurement

Measurement	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
Output Gain @ 1 kHz	-14.33	-15.40	-13.80	0.14	Pass

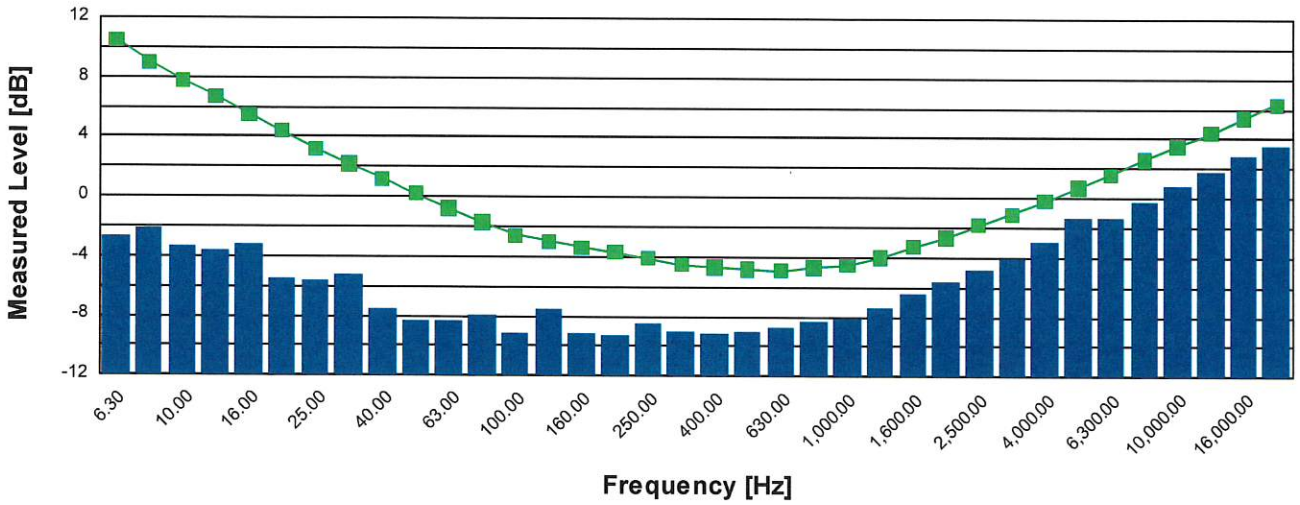
-- End of measurement results--

DC Bias Measurement

Measurement	Test Result [V]	Lower limit [V]	Upper limit [V]	Expanded Uncertainty [V]	Result
DC Voltage	3.54	2.90	3.80	0.02	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



Frequency [Hz]	Test Result [dB re 1 µV]	Upper limit [dB re 1 µV]	Result
6.30	-2.68	10.50	Pass
8.00	-2.18	9.00	Pass
10.00	-3.38	7.80	Pass
12.50	-3.68	6.70	Pass
16.00	-3.28	5.50	Pass
20.00	-5.48	4.40	Pass
25.00	-5.68	3.20	Pass
31.50	-5.18	2.20	Pass
40.00	-7.58	1.20	Pass
50.00	-8.38	0.20	Pass
63.00	-8.28	-0.80	Pass
80.00	-7.98	-1.70	Pass
100.00	-9.18	-2.60	Pass
125.00	-7.48	-3.00	Pass
160.00	-9.08	-3.40	Pass
200.00	-9.28	-3.70	Pass
250.00	-8.48	-4.10	Pass
315.00	-8.98	-4.50	Pass
400.00	-9.18	-4.70	Pass
500.00	-8.98	-4.80	Pass
630.00	-8.68	-4.90	Pass
800.00	-8.28	-4.70	Pass
1,000.00	-8.08	-4.50	Pass
1,250.00	-7.38	-4.00	Pass
1,600.00	-6.48	-3.30	Pass
2,000.00	-5.58	-2.70	Pass
2,500.00	-4.78	-1.80	Pass
3,150.00	-4.08	-1.10	Pass
4,000.00	-2.88	-0.20	Pass
5,000.00	-1.28	0.70	Pass
6,300.00	-1.28	1.60	Pass
8,000.00	-0.28	2.60	Pass
10,000.00	0.82	3.50	Pass
12,500.00	1.72	4.40	Pass
16,000.00	2.82	5.40	Pass
20,000.00	3.52	6.30	Pass

-- End of measurement results--

Self-generated Noise

Bandwidth	Test Result [µV]	Test Result [dB re 1 µV]	Upper limit [dB re 1 µV]	Result
A-weighted (1 Hz - 20 kHz)	2.67	8.52	9.50	Pass
Broadband (1 Hz - 20 kHz)	3.72	11.42	13.50	Pass

-- End of measurement results--

Signatory: *Ron Harris*

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