City Environmental Quality Review

Environmental Assessment Statement

CEQR# 23DEP032M

New York City Health and Hospitals Corporation – Bellevue Hospital

Installation of Two New Cogeneration Units

February 2026

TABLE OF CONTENTS

LIST OF TABLES

List of Figures

CITY ENVIRONMENTAL QUALITY REVIEW ENVIRONEMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM

City Environmental Quality Review

ENVIRONMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM

Please fill out and submit to the appropriate agency (see instructions)

Part I: GENERAL INFORMATION

PROJECT NAME HHC New Bellevue Hospital Cogeneration Installation

1. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency)	BSA REFERENCE NUMBER (if applicable)
23DEP032M	
ULURP REFERENCE NUMBER (if applicable)	OTHER REFERENCE NUMBER(S) (if applicable) (*e.g.*, legislative intro, CAPA) PW002422

2a. *Lead Agency Information*			**2b. *Applicant Information***		
NAME OF LEAD AGENCY			NAME OF APPLICANT		
New York City Department of Environmental Protection			New York City Health & Hospitals Corporation		
NAME OF LEAD AGENCY CONTACT PERSON			NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON		
Phil Simmons			Yunjung Lee		
ADDRESS 59-17 Junction Boulevard			ADDRESS 462 First Ave		
CITY Flushing	STATE NY	ZIP 11373	CITY New York	STATE NY	ZIP 10016
TELEPHONE 7185954471	EMAIL psimmons@dep.nyc.gov		TELEPHONE 6464839480	EMAIL yunjung.lee@nychhc.org	

3. *Action Classification and Type*

SEQRA Classification

☒ UNLISTED ☐ TYPE I: Specify Category (see 6 NYCRR 617.4 and NYC Executive Order 91 of 1977, as amended):

Action Type (refer to CEQR Technical Manual Chapter 2, "Establishing the Analysis Framework" for guidance)

☒ LOCALIZED ACTION, SITE SPECIFIC ☐ LOCALIZED ACTION, SMALL AREA ☐ GENERIC ACTION

4. *Project Description*

NYC HHC - New Bellevue Hospital is seeking approval to operate a Combined Heat and Power (CHP) system comprising of two (2) new natural gas fired cogeneration engines, Caterpillar / G3516H, each with a 1982 kW rating. Installation will be in an existing open lot on the Hospital's property. The CHP system will provide continuous power and heat to the hospital in the event of an outage on the utility grid.

Project Location

BOROUGH Manhattan	COMMUNITY DISTRICT(S) 6	STREET ADDRESS 462 First Ave
TAX BLOCK(S) AND LOT(S) Block: 962 Lot: 100		ZIP CODE 10016

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS Property bounded by FDR Drive to the East, 1st Ave to the West, 26th St to the South and 28th St to the North

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY R8	ZONING SECTIONAL MAP NUMBER 8D

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

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

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

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

Board of Standards and Appeals: ☐ YES ☒ NO

☐ VARIANCE (use)

☐ VARIANCE (bulk)

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

SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

Department of Environmental Protection: ☒ YES ☐ NO ☒ Cogeneration Facility ☐ Title V Permit

EAS FULL FORM PAGE 2

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: NYCDOB Permits

State or Federal Actions/Approvals/Funding: ☒ YES ☐ NO If "yes," specify: NYSDEC State Facility Permit Update- financed by New York Power Authority (NYPA)

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

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

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

Physical Setting (both developed and undeveloped areas)

Total directly affected area (sq. ft.): 3,500
Waterbody area (sq. ft.) and type: N/A
Roads, buildings, and other paved surfaces (sq. ft.): 3,500 (Open Lot)
Other, describe (sq. ft.): N/A

7. *Physical Dimensions and Scale of Project* (if the project affects multiple sites, provide the total development facilitated by the action) SIZE OF PROJECT TO BE DEVELOPED (gross square feet): 11,000

NUMBER OF BUILDINGS: 1
GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 11,000
HEIGHT OF EACH BUILDING (ft.): 42
NUMBER OF STORIES OF EACH BUILDING: 2

Does the proposed project involve changes in zoning on one or more sites? ☐ YES ☒ NO
If "yes," specify: The total square feet owned or controlled by the applicant:
The total square feet not owned or controlled by the applicant:

Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? ☒ YES ☐ NO
If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known):
AREA OF TEMPORARY DISTURBANCE: sq. ft. (width x length)
VOLUME OF DISTURBANCE: 11,060 cubic ft. (width x length x depth)
AREA OF PERMANENT DISTURBANCE: 3,500 sq. ft. (width x length)

8. *Analysis Year* CEQR Technical Manual Chapter 2

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2026

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: 24

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

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:
- Interior Mechanical, Electrical, Plumbing (MEP) Construction Activities 5/16/22 to 12/12/23: Installing mechanical pipe and electrical conduit for the CHP to tie-in to buildings existing hot water system for energy efficiency.
- Emergency Department (ED) Roof Mechanical Piping & Electrical Conduit 11/7/22 to 12/12/23: Installing mechanical pipe and electrical conduit across the ED roof to the CHP to tie-in to mechanical pipe installed in the building.
- CHP Plant / Structure / Equipment / Roof 5/20/22 to 12/15/23: Installing a two-story structure separate from the facility to house a 2 x 2MW natural gas cogenerators and associated electrical equipment
- Anticipated startup and commissioning of CHP early 2026

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

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

DESCRIPTION OF EXISTING AND PROPOSED CONDITIONS

The information requested in this table applies to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory control. The increment is the difference between the No-Action and the With-Action conditions.

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
LAND USE				
Residential	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
Describe type of residential structures				
No. of dwelling units				
No. of low- to moderate-income units				
Gross floor area (sq. ft.)				
Commercial	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
Describe type (retail, office, other)				
Gross floor area (sq. ft.)				
Manufacturing/Industrial	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
Type of use				
Gross floor area (sq. ft.)				
Open storage area (sq. ft.)				
If any unenclosed activities, specify:				
Community Facility	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
Type				
Gross floor area (sq. ft.)				
Vacant Land	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," describe:				
Publicly Accessible Open Space	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify type (mapped City, State, or Federal parkland, wetland—mapped or otherwise known, other):				
Other Land Uses	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," describe:				
PARKING				
Garages	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Attended or non-attended				
Lots	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
No. of public spaces	0	0	0	0
No. of accessory spaces	52	52	52	0
Operating hours	24/7	24/7	24/7	N/A
Other (includes street parking)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," describe:				
POPULATION				
Residents	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify number:				
Briefly explain how the number of residents was calculated:				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Businesses	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
No. and type				
No. and type of workers by business				
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated:				
Other (students, visitors, concert-goers, *etc.*)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If any, specify type and number:				
Briefly explain how the number was calculated:				
ZONING				
Zoning classification	R	R	R	N/A
Maximum amount of floor area that can be developed	740,124	740,124	740,124	0
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	R,C	R,C	R,C	N/A
Attach any additional information that may be needed to describe the project. If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

Part II: TECHNICAL ANALYSIS

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

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

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

	YES	NO
enhance, or otherwise protect it?		
iv. Indirect Business Displacement		
○ Would the project potentially introduce trends that make it difficult for businesses to remain in the area?	☐	☐
○ Would the project capture retail sales in a particular category of goods to the extent that the market for such goods would become saturated, potentially resulting in vacancies and disinvestment on neighborhood commercial streets?	☐	☐
v. Effects on Industry		
○ Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?	☐	☐
○ Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?	☐	☐
3. *COMMUNITY FACILITIES*: CEQR Technical Manual Chapter 6		
(a) Direct Effects		
○ Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, health care facilities, day care centers, police stations, or fire stations?	☐	☒
(b) Indirect Effects		
i. Early Childhood Programs		
○ Would the project result in 20 or more eligible children under age 6, based on the number of low or low/moderate income residential units? (See Table 6-1 in Chapter 6)	☐	☒
○ If "yes," would the project result in a collective utilization rate of the Early Childhood Programs in the study area that is greater than 100 percent?	☐	☒
○ If "yes," would the project increase the collective utilization rate by 5 percent or more from the No-Action scenario?	☐	☒
ii. Public Schools		
○ Would the project result in 50 or more elementary or middle school students, or 150 or more high school students based on number of residential units? (See Table 6-1 in Chapter 6)	☐	☒
○ If "yes," would the project result in a utilization rate of the elementary or middle schools that is equal to or greater than 100 percent?	☐	☒
○ If "yes," would the project generate 100 or more elementary or middle school students past the 100% utilization rate?	☐	☒
○ If "yes," would the project result in a utilization rate of the high schools that is equal to or greater than 100 percent?	☐	☒
○ If "yes," would the project increase the high school utilization rate by 5 percent or more from the No-Action scenario?	☐	☒
iii. Libraries		
○ Would the project result in a 5 percent or more increase in the ratio of residential units to library branches? (See Table 6-1 in Chapter 6)	☐	☒
○ If "yes," would the project increase the study area population by 5 percent or more from the No-Action levels?	☐	☒
○ If "yes," would the additional population impair the delivery of library services in the study area?	☐	☒
iv. Health Care Facilities		
○ Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
○ If "yes," would the project affect the operation of health care facilities in the area?	☐	☒
v. Fire and Police Protection		
○ Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
○ If "yes," would the project affect the operation of fire or police protection in the area?	☐	☒
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the project change or eliminate existing open space?	☐	☒
(b) Would the project generate more than 200 additional residents or 500 additional employees?	☐	☒
5. *SHADOWS*: CEQR Technical Manual Chapter 8		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?	☐	☒
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	☐	☒
(c) If "yes" to either of the above questions, attach supporting information explaining whether the project's shadow would reach any sunlight-sensitive resource at any time of the year.		

	YES	NO
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. No Adverse Impact Letter from New York State Parks, Recreation, and Historic Preservation attached		
7. *URBAN DESIGN AND VISUAL RESOURCES*: CEQR Technical Manual Chapter 10		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	☐	☒
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources not currently allowed by existing zoning?	☐	☒
(c) If "yes" to either of the above, please provide the information requested in Chapter 10.		
8. *NATURAL RESOURCES*: CEQR Technical Manual Chapter 11		
(a) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11?	☐	☒
○ If "yes," list the resources and attach supporting information on whether the project would affect any of these resources.		
(b) Is any part of the directly affected area within the Jamaica Bay Watershed?	☐	☒
○ If "yes," complete the Jamaica Bay Watershed Protection Plan Project Tracking 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) Would the proposed project introduce new activities or processes using hazardous materials and increase the risk of human or environmental exposure?	☐	☒
(c) 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?	☐	☒
(d) 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 the Hazardous Materials Appendix (including nonconforming uses)?	☐	☒
(e) 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?	☐	☒
(f) 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)?	☒	☐
(g) 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?	☐	☒
(h) 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?	☐	☒
(i) Has a Phase I Environmental Site Assessment been performed for the site?	☐	☒
○ If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify:	☐	☒
(j) Based on the Phase I Assessment, is a Phase II Investigation needed?	☐	☒
10. *WATER AND SEWER INFRASTRUCTURE*: CEQR Technical Manual Chapter 13		
(a) Would the project result in water demand of more than one million gallons per day?	☐	☒
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	☐	☒
(c) If the proposed project located in a separately sewered area, would it result in the same or greater development than that listed in Table 13-1 in Chapter 13?	☐	☒
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	☐	☒
(e) If the project is located within the Jamaica Bay Watershed or in certain specific drainage areas, including Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	☐	☒

	YES	NO
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?	☐	☒
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a Wastewater Treatment Plant and/or contribute contaminated stormwater to a separate storm sewer system?	☐	☒
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?	☐	☒
(i) If "yes" to any of the above, conduct the appropriate preliminary analyses and attach supporting documentation.		
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): N/A		
○ Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?	☐	☒
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?	☐	☒
○ If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	☐	☐
12. *ENERGY*: CEQR Technical Manual Chapter 15		
(a) Using energy modeling or Table 15-1 in Chapter 15, the project's projected energy use is estimated to be (annual BTUs): 292,698 mmBTU		
(b) Would the proposed project affect the transmission or generation of energy?	☒	☐
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☐	☒
(b) If "yes," conduct the appropriate screening analyses, attach back up data as needed for each stage, and answer the following questions:		
○ Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour?	☐	☐
If "yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16 for more information.***	☐	☐
○ Would the proposed project result in more than 200 subway/rail, bus trips, or 50 Citywide Ferry Service ferry 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), 200 subway/rail trips per station or line, or 25 or more Citywide Ferry Service ferry trips on a single route (in one direction), or 50 or more passengers at a Citywide Ferry Service landing?	☐	☐
○ 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, bus stop, or Citywide Ferry Service landing?	☐	☐
14. *AIR QUALITY*: CEQR Technical Manual Chapter 17		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☐	☒
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☒	☐
○ If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed)	☒	☐
(c) Does the proposed project involve multiple buildings on the project site?	☒	☐
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	☐	☒
(e) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	☐	☒
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation. AQDM Attached		
15. *GREENHOUSE GAS EMISSIONS*: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	☒	☐
(b) Would the proposed project fundamentally change the City's solid waste management system?	☐	☒
(c) Would the proposed project result in the development of 350,000 square feet or more?	☐	☒
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18?	☒	☐
○ If "yes," would the project result in inconsistencies with the City's GHG reduction goal? (See Local Law 22 of 2008; § 24-803 of the Administrative Code of the City of New York). Please attach supporting documentation. CLCPA Attached	☐	☒
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 114 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	☐	☒

	YES	NO
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?	☒	☐
(d) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	☐	☒
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation.		
17. *PUBLIC HEALTH*: CEQR Technical Manual Chapter 20		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☒	☐
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach a preliminary analysis, if necessary.		
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	SIGNATURE	DATE

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 I: GENERAL INFORMATION

This Environmental Assessment Statement (EAS) has been prepared to examine the potential impacts of installation of Two New Cogeneration Units at New York City Health and Hospital Corporation-Bellevue Hospital, New York City, on the environment. This Environmental Assessment Statement (EAS) is one of the documents (the other being Environment Impact Assessment or EIS) used in City Environmental Quality Review or "CEQR" which is the New York City's process for implementing the State Environmental Quality Review (SEQR), by which agencies of the City of New York review proposed discretionary actions to identify and disclose the potential effects those actions may have on the environment (see Part II for details). The following section describes the project, its purpose and need, proposed activities including schedule, required permits and approval for implementing the proposed project.

1.1 PROJECT DESCRIPTION

New York City Health + Hospitals (NYCHHC) Bellevue (herein referred to as "Bellevue," "HHC," "the Hospital," or "the facility,") is the oldest hospital in America that traces its roots back to 1736. Over the years, it has become a major academic medical institution of international renown. It currently purchases power and heat supplied by Con Edison for its various hospital operations (e.g. HVAC, lighting, etc.). The facility also has nine (9) diesel generators, all of which are used for emergency purposes. The hospital is proposing to install a Combined Heat and Power (CHP) system (herein referred to as "the CHP system," "the Proposed Project" or "the Cogens,") comprising two (2) cogeneration engines, Caterpillar / G3516H, each with a 1,982 kW rating in an existing open lot on its property. This project is being enabled and financed by New York Power Authority (NYPA) while NYC HHC owns the CHP plant. A CHP plant is an energy efficient system that generates electricity while capturing the heat that is typically seen as waste. The simultaneous generation of electrical power and capture of thermal heat allow CHP systems to achieve higher efficiency than conventional electric generation plants. The CHP system will provide continuous power and heat to the hospital and

will be able to support the hospital in the event of an outage. This is a site-specific action contained within the boundaries of the Hospital property located on 462 First Avenue, Manhattan, 10016, New York. (See Figures 1, 2 and 3).

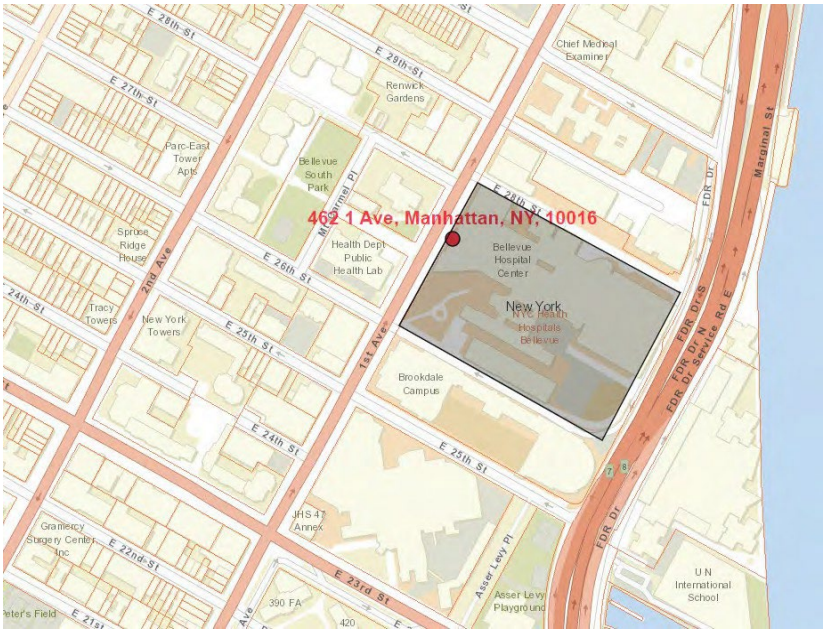

Figure 1. NYC HHC Bellevue Hospital Property Boundary

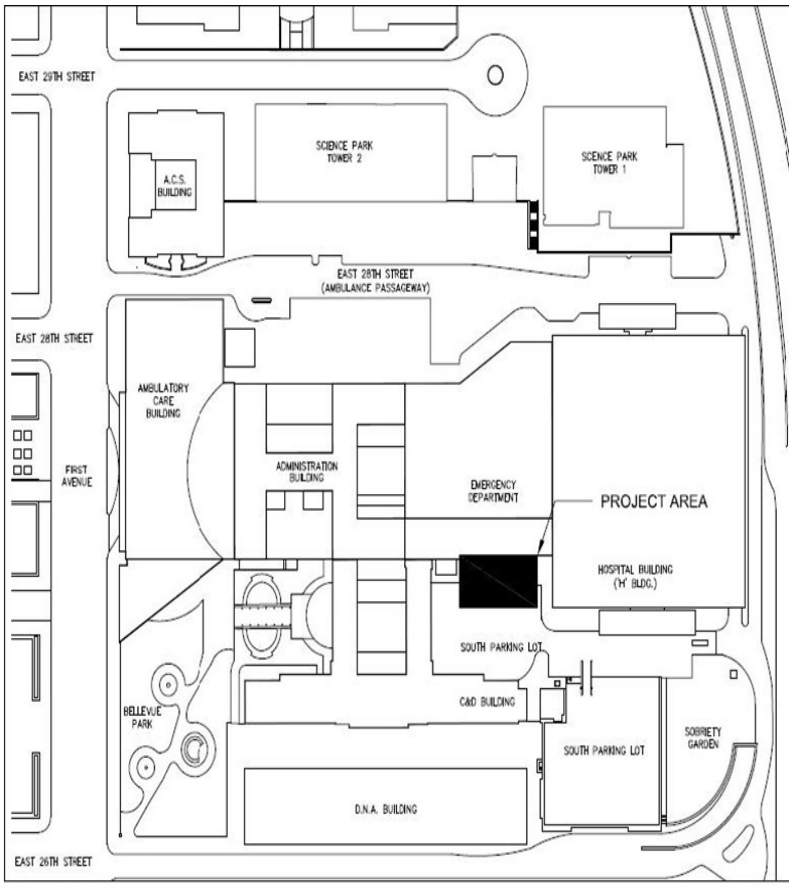

Figure 2. Project Area

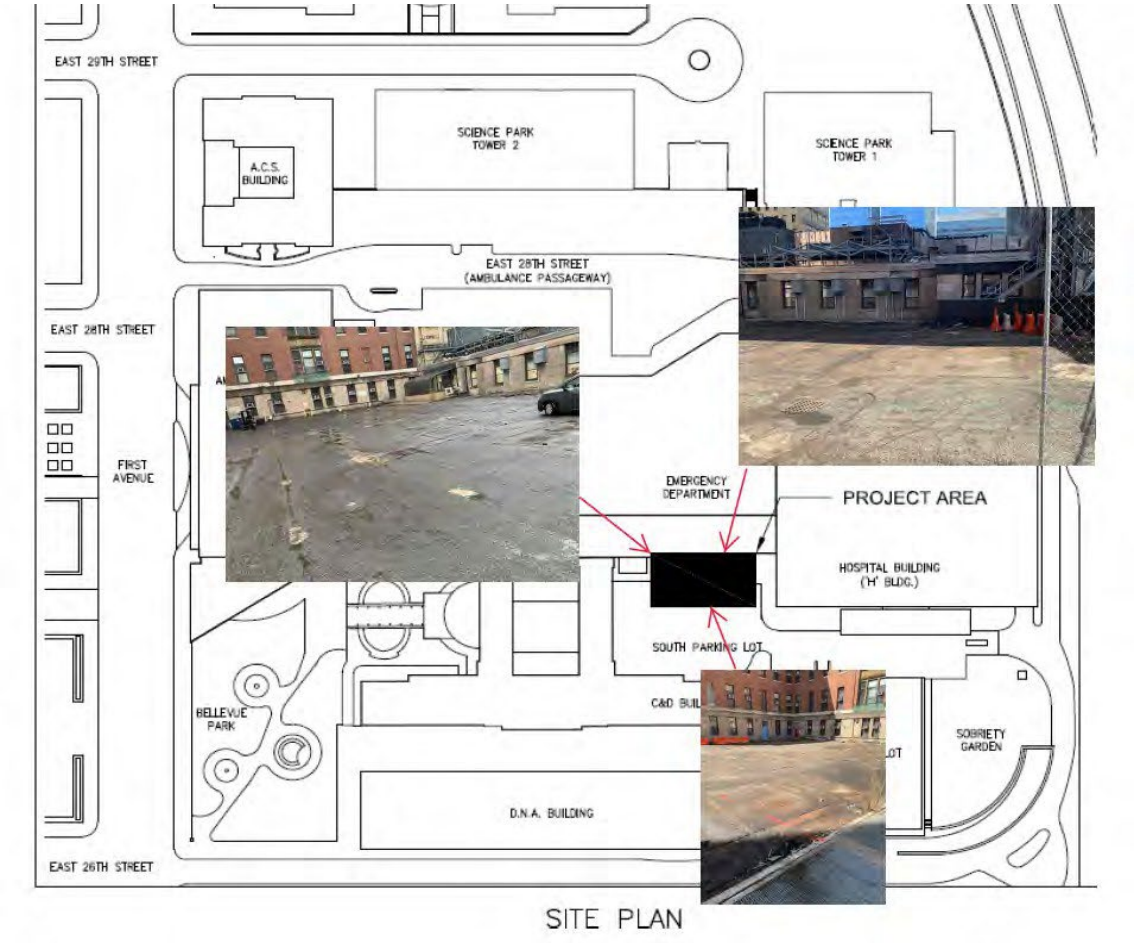

Figure 3. Project Area Keyed with Site Photos

The CHP system has been installed. The hospital currently holds a State Facility Air Permit from the New York State Department of Environmental Conservation (NYSDEC) for their emission sources. The hospital also holds 10 DEP permits (see Appendix K). The proposed CHP system would consist of two (2) 1,982 kW (approximately 2 MW) natural gas fired co-generation engines anticipated to operate continuously to provide electrical and thermal energy to the facility 24 hours per day. Bellevue Hospital will be on a firm gas rate with Con Edison and no back-up fuel source is anticipated. Both engines will be equipped with a Selective Catalytic Reduction (SCR) and Oxidation Catalyst System for reduction of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) emissions. The engines will be housed on a newly built platform approximately 25 ft above grade at the hospital site adjacent to the Emergency Department. Each engine will have an individual stack that will be routed up the adjacent A-

Building exterior wall to a height of 180 ft above the Emergency Department roof and CHP enclosure. The stacks will extend 10 feet above the A-Building façade and 30 feet above the A-Building Roof/Penthouse (See Appendix A).

1.2 PURPOSE AND NEED

The primary goal of this project is to provide Bellevue Hospital with a CHP system capable of meeting two tasks:

i) Delivering on-site power to the facility on a 24 hr/ day base load operation and will be able to support the hospital in the event of an electrical utility outage for an extended amount of time, and

ii) Reducing energy costs and increasing energy efficiency for the facility.

The purpose of the CHP system is to operate a 'baseload' manner. Electrical power will be generated by two cogeneration engines each rated at 1982 kW which will be separate enclosures. Thermal 'waste' energy (94,689,360 kBTU/yr) will be simultaneously recovered from both engines' cooling water systems and exhaust gas streams to produce hot water, offsetting steam purchased from Con Edison and reducing the hospital's reliance on off-site energy sources. The energy and economic analysis suggest the CHP system will save the hospital about $67,082,600 in 20 years and increase Greenhouse Gas (GHG) emissions by about 7.57%.

1.3 PROJECT ACTIVITIES AND SCHEDULE

Pursuant to NYC DEP Work Permit, NYSDEC State Facility Permit and NYC Department of Buildings (DOB), the project commenced with the initial structural, mechanical and general construction works, which are still ongoing. Mechanical equipment has been installed on the 13th floor and the slab on grade base has been poured in the South Parking Lot. The project near-term work includes steel erection, radiator rigging, breeching installation, and mechanical/electrical equipment. The installation of the CHP system will depend on CEQR, DEP and DEC approval. Below is the estimated project timeline:

- Interior mechanical, electrical and plumbing (MEP) Construction Activities- May 2022 to May 2024: Installing mechanical pipe and electrical conduit for the CHP to tie-in to building's existing hot water system for energy efficiency.
- Emergency Department (ED) Roof Mechanical Piping & Electrical Conduit November 2022 to June 2024: Installing mechanical pipe and electrical conduit across the ED roof to the CHP to tie-in to mechanical pipe installed in the building.

- CHP Plant / Structure / Equipment / Roof June 2022 to June 2024: Installing a two- story structure separate from the facility to house the two (2) x 2 MW natural gas generators and associated electrical equipment. Note: CHP equipment is not installed, only structural work is being undertaken, in preparation for CHP installation once permits and approvals are issued.

- Once air permits are received and structural work has taken place it will take 12 months for the installation and commissioning of the CHP project.
- Project finish date: February 2026

1.4 REQUIRED APPROVALS

The project requires approvals from the following agencies:

- NYC DEP – Certificate of Operation
- NYS DEC – State Facility Permit Modification
- NYPA – Project Financing.

PART II: TECHNICAL ANALYSIS

As mentioned previously, the environmental review process provides a means for decision-makers to systematically assess, disclose and mitigate to the greatest extent practicable the potential significant environmental consequences of their decision to fund, directly undertake or approve a project (see 2021 CEQR Technical Manual). Any proposed action funded, approved, or directly undertaken by a New York State or local agency must comply with the provisions of the State Environmental Quality Review Act (SEQRA) and its implementing regulations (6 NYCRR Part 617).

Once an agency determines a project is subject to environmental review, a list of technical areas or categories (see 2021 CEQR Technical Manual) are assessed to determine whether the project may have a significant adverse impact on the environment. For each of the analysis categories, an assessment of the Proposed Project's potential impacts based on the thresholds and criteria presented in the CEQR Technical Manual was considered. As detailed in Project Description (1.1), the Proposed Project would involve construction and operation of a new CHP system.

The project would meet or not exceed the analysis thresholds for these categories as set forth in the CEQR Technical Manual: Community Facilities and Service, Socioeconomic Conditions, Open Space, Shadows, Urban Design and Visual Resources, Solid Waste and Sanitation Services, Water and Sewer Infrastructure, Neighborhood Character, Natural Resources, Traffic and Transportation, and Construction.

The following technical areas were subject to further assessment: Land Use, Zoning, and Public Policy, Historic and Cultural Resources, Hazardous Materials, Air Quality, Energy, Greenhouse Gas Emissions and Climate Change, Noise and Public Health.

2.1 LAND USE, ZONING, AND PUBLIC POLICY

2.1.1 LAND USE ANALYSIS

The Hospital property is located at 462 First Avenue, Manhattan, 10016, New York. (See Figures 2 and 3). The project site is located on Block 962 Lots 100 (see Figure 5) and is bounded to the south by East 25th Street, to the west by 1st Avenue, to the north by East 29th Street and to the east by Franklin D Roosevelt Drive. The *CEQR Technical Manual* suggests that land use, zoning and public policy study area should extend 400 feet from the proposed project site. Existing land use patterns of city blocks within approximately 400 feet of the project site are presented in Figure 4. In terms of project's physical setting, it is in a built area comprising residential buildings, commercial buildings (C2-5, C2-6 and C2-7), parks, manufacturing (M1-1 and M2-3) districts, roads and other paved surfaces. The facility's land use is listed as a Public Facility and Institution. (See Figure 4). This property is a hospital which is part of New York City's Health and Hospitals network. The total gross floor area is 2,124,441 sq ft.

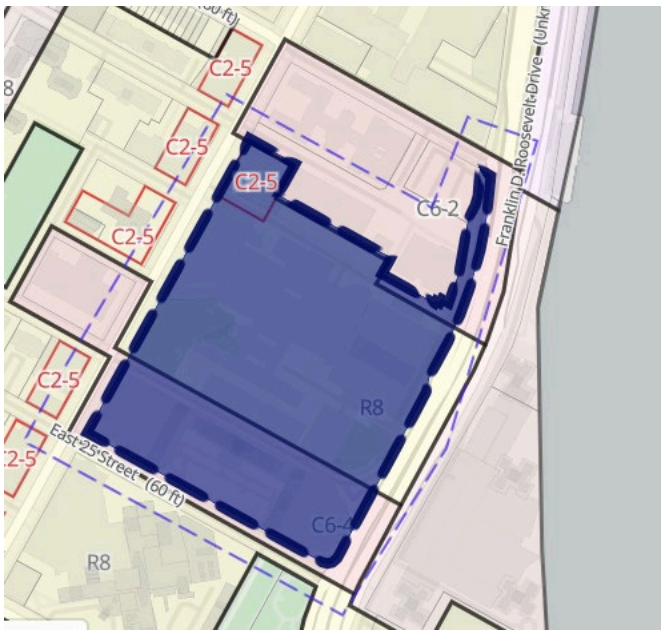

Figure 4. Project Site Land Use Map

2.1.2 ZONING ANALYSIS

The hospital's zoning classification is R8[1] residential district with C2-5[2] commercial overlays (See Figure 5). The proposed project would install a CHP system to generate electricity and heat on-site as a means to enhance the energy resiliency of Bellevue Hospital in the event of grid electricity outage. The new CHP system is located within the Hospital complex (inner court) and, therefore, it is considered a permitted obstruction pursuant to ZR 24-68 in line with the existing land use and zoning regulations of the area. The hospital will remain as primary Use Group III(A)[3] with the cogeneration equipment as an accessory to this Use Group. This group was provided by NYC DOB in response to the filing of this project. The NYC DOB Office has listed this project as an accessory, which allows the installation of this CHP system as an accessory power system in the Hospital. While the CHP unit is being installed, there will be some construction in the parking area; however, the construction will not cause any loss of parking use, HHC is planning to provide additional parking space at nearby areas owned by Bellevue Hospital to maintain the same parking spaces. Parking would not be impacted by the proposed project.

The project would not involve any change in zoning or land use or have a negative impact on the residential, commercial, or other facilities in the area. The CHP system will be installed in the South Parking Lot, HHC NYC will add taller and larger car lifts to maintain the same amount of parking spaces. The exhaust stack of the CHP system will rise above the parapet of the building

[1] Apartment buildings in R8 districts can range from mid-rise, eight- to ten-story buildings to much taller buildings set back from the street on large zoning lots.

[2] Commercial activities in the city are permitted in eight commercial districts based on their functional similarities and locational requirements. Small retail and service shops in C1 and C2 districts serve the immediate needs of surrounding residential communities. Larger stores with more goods and services are found in C4 districts, borough-wide regional retail centers like Main Street in Flushing and Fordham Road in the Bronx. C5 and C6 districts, central business districts that serve the city, the region and the nation, are mapped in Midtown, Lower Manhattan, Downtown Brooklyn and Long Island City.

[3] Use Group III(A) consists primarily of community facilities with sleeping accommodations.

but will not increase the height of the facility given the campus has other hospital buildings that are taller.

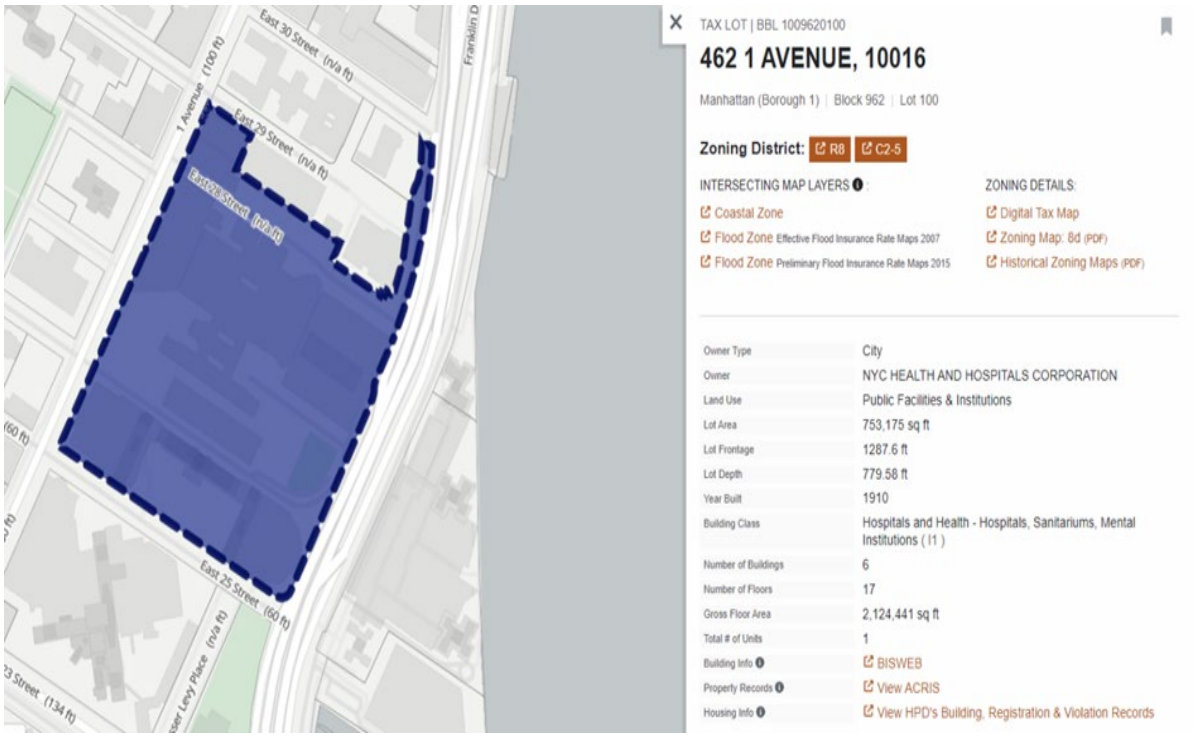

Figure 5. Project Site Tax Map

2.1.3 PUBLIC POLICY ANALYSIS

A preliminary assessment of public policy was carried out to identify and confirm that the proposed project would not alter or conflict with identified policies, such as the New York City's Waterfront Revitalization Program (NYCWRP). The proposed project site is located within the New York State Department of State (NYSDOS) and NYCWRP's Coastal Zone Boundary (see Figures 6 & 7). The NYCWRP establishes the City's policies for waterfront planning, preservation, and development projects to ensure consistency over the long term. The goal of the program is to maximize the benefits derived from economic development, environmental conservation, and public use of the waterfront, while minimizing any potential conflicts among these objectives. The NYCWRP is authorized by New York State's Waterfront Revitalization of Coastal Areas and Inland Waterways Act, which was enacted in response to the Federal Coastal Zone

Management Act and allows municipalities to participate in the State's Coastal Management Program by creating their own local Waterfront Revitalization Program.

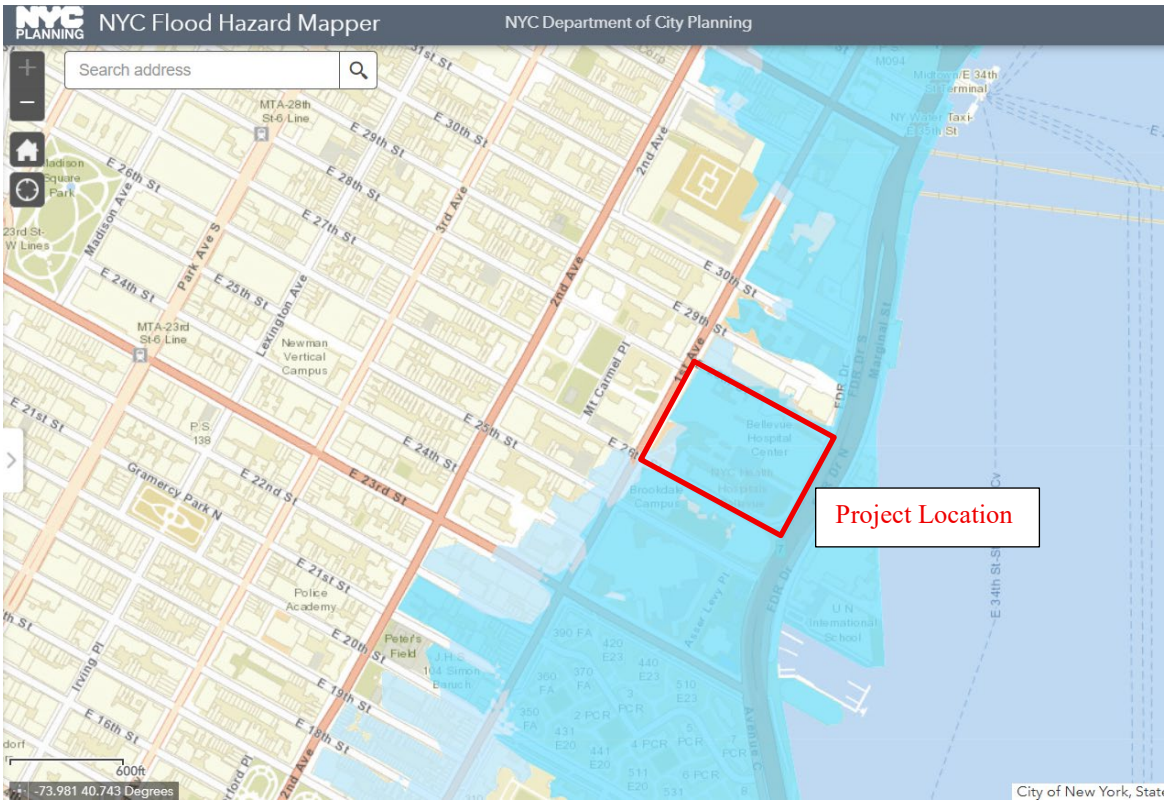

Figure 6: Future Floodplain 2050 (1% & 0.2% Annual Chance Floodplain)

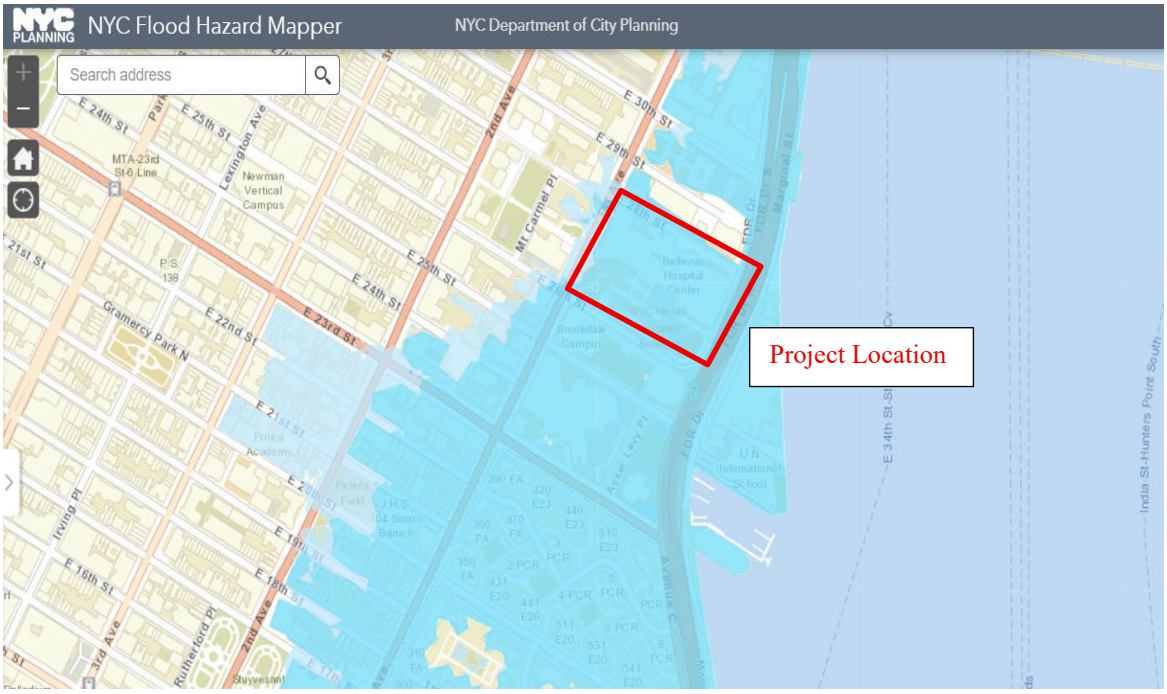

Figure 7: Future Floodplain 2100 (1% & 0.2% Annual Chance Floodplain)

Projects that require certain federal, state, and local discretionary actions that are located within and/or affect the Coastal Zone are reviewed by the responsible government agency to assess the consistency of a proposed activity or project with the NYCWRP's ten policies. This process also serves to better coordinate activities and decisions affecting the waterfront between overlapping jurisdictions and multiple agencies. Since this project is within the Coastal Zone, a consistency review is warranted for the proposed project. A NYCWRP Consistency Assessment Form (CAF) was completed to assess if the proposed project would promote or hinder NYCWRP policies. The proposed project was assessed for following NYCWRP policy areas of 5.2, 5.3, 6.1 and 6.2 (See Appendix B):

Policy 5.2: *Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.*

In this project, the emissions from the proposed CHP system will be considered as potential nonpoint source pollution. Nitrogen Oxides will be the major pollutant emitted from the CHP

system that have influence on NYC's waterbody, however the proposed CHP system will be equipped with a Selective Catalytic Reduction (SCR) and Oxidation Catalyst System for the reduction of Nitrogen of Oxides (NOx), as well as other pollutants such as carbon monoxide (CO), and volatile organic compounds (VOC) emissions. Additionally, the facility's overall CO_2e generation efficiency, expressed in tons of CO2e emitted per kBTU of energy used, would increase by 10.3% through the installation of the CHP system (see Appendix E). Also, the proposed CHP system will not operate at full capacity after it is installed, therefore the new proposed CHP system will have a minimal impact on NYC's waterbody.

Policy 5.3: *Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.*

Policy 5.3 emphasizes ensuring water quality protection during excavation or fill placement near navigable waters and sensitive habitats, meeting regulatory requirements and minimizing negative impacts on aquatic ecosystems. This policy is not applicable to the proposed CHP project because the construction is 660ft away from the closest waterbody, East River. The construction does not include any dredging in coastal water and no pollutant or waste will discharge into any waterbody. Therefore, the proposed CHP unit will have no impact on NYC's waterbody during construction.

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* **and;**

Policy 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.*

The proposed project would install a CHP system comprising two (2) gas-fired co-generation engines with a 1982 kW capacity each in a portion of an existing enclosed parking lot inside the hospital facility. Since the project falls within the FEMA 1% and 0.2% annual chance floodplains for 2050 as well as for 2100, the proposed CHP engines will be installed on a platform raised at least 25 feet above grade to protect against sea level rise and coastal flooding. The project location is not on the waterfront and does not result in the physical alteration of a waterfront site but is located within a FEMA 1% and 0.2% annual chance floodplain. The project site does not fall within any WRP Special Area Designations. The proposed structural management measure in the form of a raised platform 25 feet above grade would protect the CHP system from flooding and erosion. Since this project is contained within Bellevue Hospital property, the only affected area will be the project site. The proposed CHP system is expected to advance or promote specifically WRP policies 6.1.

The Waterfront Revitalization Program Consistency Assessment Form (WRPCAF) and Assessment for all Relevant Polices were reviewed by the DCP on 08/14/2025 and given project identification WRP# 24-010. DCP's Climate and Sustainability Planning Division, on behalf of the New York City Coastal Commission, concluded that the action would not substantially hinder the achievement of any WRP policies. Therefore, the proposed action would not result in potential significant adverse impacts to public policy (See Appendix B).

2.2 HISTORIC AND CULTURAL RESOURCES

A historic and cultural resources assessment is required for projects that can potentially impact archaeological or architectural resources eligible or designated on the New York State Register of Historic Places. Several of the Hospital's buildings, including the Administration Building and Buildings C and D of the Bellevue Hospital complex, are eligible for this listing as architectural resources. No archaeological resource classifications at this site. At the start of the project, the

management team reached out to the New York State Division of Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPHRP). The office determined that the proposed project would have No Adverse Impact on historic resources (see Appendix C). Similarly, the New York City Landmarks Preservation Commission (LPC) was also consulted and no-effect determination letter was issued dated 2/21/2024 (see Appendix D).

2.3 HAZARDOUS MATERIALS

The facility has five (5) 15,000-gallon underground diesel storage tanks on site to supply their emergency generators. No oil usage will be implemented with the CHP system. The Hospital has an active NYSDEC Petroleum Bulk Storage (PBS) registration for these underground tanks. The only ground disturbance for this project is the drilling of micro pilings. The nearest underground tank is located approximately 230 feet away from the project site, and the drilling of the micro pilings would not result in a pathway for exposure of any potential contaminants from the fuel oil tanks. The slab on grade base has been poured in the South Parking Lot already; however, this action did not result in the pathway of exposure. The tanks and surrounding area will not be disturbed as part of the proposed project and therefore are not considered a pathway of exposure for the proposed project.

2.4 ENERGY ANALYSIS

The proposed project would result in the installation of a CHP system capable of efficiently producing heat and electricity on-site, decreasing the need for electricity consumption from outside sources like Con Edison. In an effort to assess the potential effects of the CHP system on the facility's overall energy production, an energy model was created (see Appendix E). The energy model considered the influence of the ED building and H building and the proposed CHP unit. In-depth metrics for the energy model, as well as the overall power, natural gas consumption and

greenhouse gas emissions are discussed under section 3.6. The annual projected energy use of the Cogen firing natural gas is 292,698 MMBTU/year. CHP system operation will also produce hot water which will then be utilized to offset steam purchased from Con Edison. Reductions in certain areas, such as the decrease in steam and electricity purchases from Con Edison, were calculated using the available waste heat per hour multiplied by the number of available operating hours, with some assumed efficiency decreases in the spring, summer and fall due to dropping heat loads in the hospital. The demand of the facility is great enough that the CHP system's electricity and steam generation capacity is insufficient to completely offset the supply that the Hospital typically receives from Con Edison. As a result, the facility will still have to supply a portion of their energy through Con Edison while operating the CHP system concurrently. Section 3.6 has more in-depth discussion regarding the increase in energy consumption.

2.5 AIR QUALITY ANALYSIS

The proposed CHP system, comprising two (2) 1,982 kW (approximately 2 MW) natural gas fired engines, is anticipated to operate continuously to provide electrical and thermal energy to the facility 24 hours per day. Both engines will be equipped with a Selective Catalytic Reduction (SCR) and Oxidation Catalyst System for reduction of NOx, CO, and VOC emissions. The engines will be housed on a newly built platform approximately 25 feet above grade in a lot owned by Bellevue Hospital next to the Emergency Department. Each engine will have an individual stack that will be routed up the adjacent A-Building exterior wall to a height of 180 ft above the Emergency Department roof and CHP enclosure (approximately 200 ft above grade). The stacks will extend 10 feet above the A-Building.

The CHP system comprising two natural gas-powered stationary engines, would be considered stationary sources of air pollution. In support of the State (NYSDEC) and City (NYCDEP) air permits for these engines, various calculations were performed to understand the estimated

increase in criteria pollutants: nitrogen oxides (NOx), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), and volatile organic compounds (VOCs).

In the existing, No-Action, condition, the facility operates nine (9) emergency diesel generators. In the With-Action condition, the facility operates all nine (9) emergency generators as well as the two (2) CHP engines. Annual emissions remain below 24.9 tons per year of NOx, since the new CHP engines utilize SCR/Oxidation Catalyst systems. In the With-Action condition, facility-wide NOx emissions increase from 5.9904 to 5.9905 tons per year. A full set of emission calculations are present in Appendix E.

Regulatory Criteria

The proposed project's impacts on air quality were compared against National Ambient Air Quality Standards (NAAQS). For pollutants, New York State sets its own criteria (refer Table 1). These standards were taken from the 2021 CEQR Technical Manual, Chapter 17 (see Table 1).

Table 1.National Ambient Air Quality Standards

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m3 (1)	Not to be exceeded
Nitrogen Dioxide (NO2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM2.5	primary	1 year	9.0 µg/m3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m3	98th percentile, averaged over 3 years
	PM10	primary and secondary	24 hours	150 µg/m3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O3 standards.

(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas:

(1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and

(2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Per analysis methods in the CEQR Technical Manual, significance of the air impacts of this project were determined using Air Quality Dispersion Modeling. If the results exceed the NAAQS standards in Table 1, it would be deemed to have a potentially significant adverse impact. Additionally, the proposed project must meet criteria for specific pollutants under CEQR, specifically for $PM_{2.5}$. The following are the $PM_{2.5}$ criteria from the CEQR Technical Manual, Chapter 17:

- 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 µg/m3 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 µg/m3 at any receptor location for stationary sources.

If the proposed project increases for $PM_{2.5}$ above these levels, they may be considered to have a potential significant adverse impact.

2.5.1 AIR QUALITY MODEL METHODOLOGY

Air Quality Modeling was conducted to determine the proposed project's effects on the two major pollutants – NO_2 and $PM_{2.5}$. Since the Cogens will be burning natural gas, which has a negligible sulfur fuel content, SO_2 emissions were not analyzed. The modeling parameters were taken from engineering design documentation for the proposed engines. Table 2 details the inputs used in the model, including $PM_{2.5}$ and NO_2 emission rates for the engines. To determine annual emission rates, the maximum operating scenario was used, assuming the proposed units would run for 8760 hours per year. Table 3 shows additional model inputs including stack height, exhaust flow, exhaust temperature, and UTM coordinates of the sources.

Table 2 Air Model Emission Rate Inputs for 2 New Cogeneration Engines

Source	**Status**	**Short Term**		**Annual**	
		NOx	$PM_{2.5}$	Nox	$PM_{2.5}$
		g/s	g/s	g/s	g/s
5COMN	Existing	8.9744	0.4216	0.1065	0.0050
COGEN1	New	0.0774	0.0309	0.0774	0.0309
COGEN2	New	0.0774	0.0309	0.0774	0.0309
EMRM	Existing	2.68	0.0838	0.0318	0.0010
ADMIN1	Existing	3.6146	0.2541	0.0429	0.0030
ADMIN2	Existing	3.6146	0.2541	0.0429	0.0030
AMBUL	Existing	5.4218	0.3811	0.0644	0.0045

Table 3. Air Model Stack Parameters

Source ID	Status	Source Type	UTM X	UTM Y	Height	Temp.	Exhaust Flow	Stack Dia
			m	m	ft	F	ACFM	inch
5COMN	Existing	Point	586604	4510226	300	949	26,928	28.73
COGEN1	New	Point	586513	4510294	180	280	12,135	18
COGEN2	New	Point	586515	4510298	180	280	12,135	18
EMRM	Existing	Horizontal Point	586516	4510289	115	757	11,735	24
ADMIN1	Existing	Horizontal Point	586500	4510380	25	900	4,488	12
ADMIN2	Existing	Horizontal Point	586500	4510379	25	900	4,488	12
AMBUL	Existing	Horizontal Point	586484	4510391	95	901	6,525	12

The USEPA-recommended AERMOD dispersion model is a steady-state plume model. The model incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, treatment of both surface and elevated sources, and both simple and complex terrain.

This modeling analysis was performed using the latest five-year meteorological data from LaGuardia Airport, the nearest representative National Weather Service Station, for the years 2013-2017. Compliance with the 1-hour NO2 NAAQS standards detailed in Table 1 is based on the multiyear average of the 98th percentile of the annual distribution of daily maximum 1-hour values not exceeding 100 ppb. The 8th-highest of the daily maximum 1-hour values across a year is an unbiased surrogate for the 98th-percentile. The AERMOD dispersion model incorporates the form of the 1-hour NO2 NAAQS. Compliance with the 24-hr PM-2.5 NAAQS standards is based on the multiyear average of the 98th percentile of the annual distribution of daily maximum 24-hour values not exceeding 35 μg/m3. The 8th highest of the daily maximum 24-hour values across a year is an unbiased surrogate for the 98th percentile.

When analyzing air model data, the proposed model concentrations of pollutants must be added to background pollutant concentrations for the location to which the sources are being added. In this case, background concentrations for NO_2 from the USEPA Air Quality Monitoring Site at Queens

College (Site ID 36-081-0124) were utilized. Background concentration was taken from 98th percentile daily maximum 1-hour values averaged over the years 2012 to 2016. For $PM_{2.5}$, background concentrations from the USEPA Air Quality Monitoring Site at PS-19 in Manhattan (Site ID 36-061-0128) were utilized as well.

A full network of receptors was included in the analysis, including surrounding buildings as well as a grid of flagpole receptors. Terrain elevations for the receptor grid were obtained using National Elevation Dataset (NED) files, pre-processing this data using the AERMAP program.

2.5.2 AIR MODEL RESULTS

The results of air modeling for NO_2 and $PM_{2.5}$ are shown in Tables 4 and 5. The maximum predicted concentrations of NO_2, when added to background concentrations, were found to meet the NAAQS 1-hour 98th percentile NO2 standard. Please see below for discussion regarding $PM_{2.5}$ concentrations.

Table 4. NO_2 Modeling Results

NO2 NAAQS

Averaging Period	Year	Source Group	Modeled Conc. w/ ARM2 ($\mu g/m^3$)	Background Conc.[2] ($\mu g/m^3$)	Total Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Exceeds NAAQS?
1-Hour[1]	AVG	COGENS	57	58.84	116.13	188	No
		COGEN1	31	58.84	90.15	188	No
		COGEN2	31	58.84	89.71	188	No

1. Represents H8H of daily maximum values averaged over 5 years.
2. Background for Queens College (AQS Site ID 36-081-0124) from EPA Air-Data; Used average for years 2012 through 2016.

Averaging Period	Source Group	Year	Modeled Conc. w/ ARM2 ($\mu g/m^3$)	Background Conc.[2] ($\mu g/m^3$)	Total Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Exceeds NAAQS?
Annual[1]	COGENS	2011	1.97	17.50	19.47	100	No
	COGENS	2012	1.93	17.50	19.43		No
	COGENS	2013	2.11	17.50	19.61		No
	COGENS	2014	1.64	17.50	19.14		No
	COGENS	2015	1.67	17.50	19.17		No
	COGENS	MAX	2.11	17.50	19.61		No
	ALL	2011	5.15	17.50	22.65	100	No
	ALL	2012	5.34	17.50	22.84		No
	ALL	2013	4.73	17.50	22.23		No
	ALL	2014	5.18	17.50	22.68		No
	ALL	2015	5.04	17.50	22.54		No
	ALL	MAX	5.34	17.50	22.84		No

1. Represents H1H of respective source groups
2. Background for Queens College (AQS Site ID 36-081-0124) from EPA Air-Data; Used maximum for years 2012 through 2016.

File Location of Modeling Files:

Table 5. $PM_{2.5}$ Modeling Results

Annual PM2.5- NAAQS

Averaging Period	Year	Source Group	Modeled Conc. (µg/m³)	Background Conc.[2] (µg/m³)	Total Ambient Conc. (µg/m³)	NAAQS (µg/m³)	Exceeds NAAQS?
Annual[1]	AVG	COGENS	0.39	8.6	8.96	9	No
		ALL	0.53	8.6	9.11	9	Yes

[1]Represents H1H averaged over 5 years

[2]Since not available from DEP, used EPA database to download annual background data.

Annual PM2.5- CEQR

Averaging Period	Year	Source Group	Modeled Conc. (µg/m³)	Background Conc. (µg/m³)	Total Ambient Conc. (µg/m³)	CEQR Standard (µg/m³)	Exceeds CEQR?
Annual[1]	AVG	COGENS	0.39	-	0.39	0.3	Yes
		ALL	0.53	-	0.53	0.3	Yes

[1]Represents H1H averaged over 5 years

24-hr PM2.5 NAAQS

Averaging Period	Year	Source Group	Modeled Conc. (µg/m³)	Background Conc.[2] (µg/m³)	Total Ambient Conc. (µg/m³)	NAAQS (µg/m³)	Exceeds NAAQS?
24-Hour[1]	AVG	COGENS	1.6	26	28	35	No
		COGEN 1	0.81	26	27	35	No
		COGEN 2	0.8	26	27	35	No

[1]Represents H8H of 24-hr results averaged over 5 years

[2]Background for PS 19 Manhattan from https://www.nyc.gov/assets/oec/technical-manual/17_Air_Quality_2021.pdf

24-hr PM2.5 CEQR

Averaging Period	Year	Source Group	Modeled Conc. (µg/m³)	Background Conc. (µg/m³)	Total Ambient Conc. (µg/m³)	CEQR Standard (µg/m³)	Exceeds CEQR?
24-Hour[1]	AVG	COGENS	2.23	-	2.2	4.5	No
		COGEN 1	1.12	-	1.1	4.5	No
		COGEN 2	1.12	-	1.1	4.5	No

[1]Represents H1H of 24-hr results averaged over 5 years

Ambient PM2.5 Air Monitoring Site for Determining Background Concentrations

Pollutant	Averaging period	Monitoring Station[a]	AQS Site ID	County	State	Background Concentration[b]	Metric	Background Concentrations (µg/m³) 2010	2011	2012	2013	2014	2015	Data Counts (days per year)[b] 2010	2011	2012	2013	2014	2015
PM2.5	24-hour	***Queens College***	36-81-124	Queens	NY	22.5	98th percentile averaged over the 5 years	25.5	24.7	20.5	25	19.7	22.7	351	300	331	339	341	343
PM2.5	Annual	***Queens College***	36-81-124	Queens	NY	8.6	Annual average, averaged over the 5 years	9.43	9.42	8.5	8.34	7.69	8.09	351	300	331	333	341	343

a. Proposed station to use as background concentration is shown in ***bold italic font***

b. https://aqs.epa.gov/aqsweb/airdata/download_files.html

The modeled $PM_{2.5}$ concentrations were 0.11 µg/m3 above the NAAQS Annual standards. Additionally, the CEQR *de minimis* criteria for concentration increments greater than 0.3 $\mu g/m^3$ at any receptor location for stationary sources was also exceeded. The model indicated that exceedances occurred around the perimeter of the main "H-Building" of the Hospital, specifically on the 13th and 22nd floor where the main air intakes are located. In an effort to address the NAAQS and CEQR exceedances for $PM_{2.5}$, several facility operating conditions and procedures will be put into effect to ensure the continuous operation of the CHP system doesn't affect sensitive receptors. Primarily, the purpose of the following mitigation measures is to ensure that all exterior locations where AERMOD predicted exceedances will have to pass through a filter with sufficient removal capabilities to reduce $PM_{2.5}$ levels to well below the exceedance conditions. The following is a breakdown of the steps and actions the Hospital will undertake to ensure compliance with the CEQR requirements:

The H-building currently has a variety of air filters installed on the 13th and 22nd floors. Table 6 details the specific types of filters the H-building has installed as well as all the specific sizes they use.

Table 6: List of Currently Installed Filters in Bellevue Main Hospital Building

Filter Type	Filter Dimensions (inches)				Meets necessary removal efficiency?
3 Ply Cube	12x24x10	12x24x15	24x24x10	24x24x15	NO
3 Ply Link	12x112	16x100	16x120	20x45	YES
	24x112	24x140	24x72	25x120	
3 Ply Panel	20x20				YES
33x65 Auto Roll	3x32-7/8"W				NO
45x65 Auto Roll	4x44-7/8"W				NO
57x65 Auto Roll	5x56-7/8"W				NO
Fiberglass Bag	24x24x22				YES
MERV 15 V-Bank	12x24x12	20x24x12	24x24x12		YES
MERV 9 MegaPleat	12x24x2		24x24x2		YES
Syn Pac E MERV-15	12x20x15	12x24x15	12x24x22	20x24x12	YES
	20x24x22	24x24x15	24x24x22		

Based on the Air Model results in Appendix G, the highest recorded $PM_{2.5}$ concentrations will require a minimum $PM_{2.5}$ removal efficiency of approximately 25% across all air intakes to reach acceptable levels. To ensure continued compliance with the necessary standards, the proposed plan is to upgrade all of H-building's non-compliant filters to ones that have a Minimum Efficiency Reporting Value (MERV) rating of at least 9, which corresponds to a PM2.5 removal efficiency of around 35%[4]. If the preexisting filter's performance specifications meet the necessary PM2.5 removal efficiency of 35% or greater, then the Hospital will opt not to upgrade those filters and instead leave them as they are. Some of the filters already installed have the necessary MERV rating to comply with NAAQS and CEQR criteria. Of all the filters, the Cube and AutoRoll filters are the two types that do not officially list performance specifications that comply with the required PM2.5 removal rate. The Hospital has committed to the installation of MERV-15 filters with 90% removal efficiency.

[4] MERV Rating Chart: Understanding 1-20 MERV Rating (For Filters)

To keep track of the filter installations and maintenance, the Hospital will maintain a log of receipts for the filters installed in their main air intake equipment, and keep track of the lifespan of each filter, logging whenever they get changed. The information will be stored at the Hospital and will be made available to send to the DEP upon request.

To prevent unfiltered outside air from entering from a window, the Hospital has ensured that there are no publicly openable windows, and the only ones that can be opened are under lock and key by facility personnel. The facilities team will keep a record book of whenever any of the windows need to be opened, and track what window was opened, why it was opened, and how long it was opened for. In a potential emergency situation if the window must be opened and the CHP system can't be turned off, this event must be logged into the record book, detailing the reasons why the window needed to be opened while the CHP system was subsequently operating.

To best aid the DEP's efforts to ensure continued adherence to the enforcement actions described above, the Hospital will commit to providing the DEP with a copy of the record book on an annual basis, or as often as the DEP determines is appropriate. See Appendix L for a signed letter from the Hospital management pledging its commitment to meet the compliance requirements described above.

Under these conditions, and with the support of the engineering and facility staff, concentrations of $PM_{2.5}$ will be below the NAAQS and CEQR standards, demonstrating that no potential significant adverse air quality impacts would result from the installation of the proposed CHP system.

2.6 GREENHOUSE GAS EMISSIONS

The calculation of operational energy consumption is the first step in a GHG assessment (refer 2021 CEQR Technical Manual, Chapter 18, "Greenhouse Gas Emissions and Climate Change" and see Section 2.4). Bellevue Hospital currently purchases both electricity and steam for lighting, Heating, Ventilation and Air Conditioning (HVAC) purposes from Con Edison. The purpose of the proposed CHP project is to generate electricity and steam using the proposed cogeneration engines making the hospital more energy efficient and less reliant on outside sources like Con Edison for heat and power. By using waste thermal energy to provide steam to the facility, the proposed CHP system would offset a significant amount of the electricity currently consumed on site thereby impacting the facility's overall GHG emissions.

Greenhouse gases (GHGs) are atmospheric gases that can absorb radiation, which causes a warming effect and generally leads to the phenomenon of global warming. Major GHGs to be analyzed as per the CEQR Technical Manual include carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4). Other GHGs such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6) are not emitted and therefore not relevant to the proposed CHP system. The contribution of greenhouse gases by a particular source or set of sources can be quantified in terms carbon dioxide equivalents (CO_2e). To calculate CO_2e, each potential GHG is given an emission factor called a Global Warming Potential (GWP). Global warming potentials are standard values that take into account the influence that a certain pollutant has on global warming. Table 7, from Chapter 18 of the CEQR Technical Manual, presents global warming potentials for primary GHGs.

Table 7: Global Warming Potential for Primary Greenhouse Gases

Greenhouse Gas	Common sources	Global Warming Potential (GWP)
CO_2 - Carbon Dioxide	Fossil fuel combustion, forest clearing, cement production	1
CH_4 - Methane	Landfills, production and distribution of natural gas and petroleum, anaerobic digestion, rice cultivation, fossil fuel combustion	21
N_2O - Nitrous Oxide	Fossil fuel combustion, fertilizers, nylon production, manure	310
HFCs - Hydrofluorocarbons	Refrigeration gases, aluminum smelting, semiconductor manufacturing	140-11,700*
PFCs - Perfluorocarbons	Aluminum production, semiconductor manufacturing	6,500-9,200*
SF_6 - Sulfur Hexafluoride	Electrical transmissions and distribution systems, circuit breakers, magnesium production	23,900

Note: Since the Second Assessment Report (SAR) was published in 1995, the IPCC has published updated GWP values in its Third Assessment Report (TAR) and Fourth Assessment Report (AR4) that reflect new information on atmospheric lifetimes of greenhouse gases and an improved calculation of the radiative forcing of CO_2. However, GWP values from the SAR are still used by international convention to maintain consistency in GHG reporting, including by the United States when reporting under the United Nations Framework Convention on Climate Change.
* The GWPs of HFCs and PFCs vary depending on the specific compound emitted. A full list of these GWPs is available in Table ES-1 of the U.S. Environmental Protection Agency's *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2008*, available at: Inventory-GHG 1990-2008.

Under the Clean Air Act, the USEPA and New York State is required to regulate GHG emissions due to their harmful effects on the earth's climate. These agencies aim to reduce GHG emissions by 30% between 2020 and 2030. New York City has its own GHG reduction goals as part of its OneNYC initiative, with an aim to reduce GHG emissions citywide 30% below 2005 levels by the year 2025 and to become carbon neutral by 2050. As part of this effort and the Climate Mobilization Act of 2019, the city enacted Local Law 97. This law establishes emission limits and annual reporting requirements for large buildings exceeding 25,000 square feet. Bellevue Hospital is considered a "covered building" under Local Law 97, meaning it must comply with the law.

Based on the Energy Model in Appendix E, the annual energy consumption for the proposed project With-Action (with Cogen) and with No-Action (No Cogen) was calculated. The energy model was run using received electrical interval data for both the emergency department service and the H

building service. Additionally, thermal data from HHC was utilized in the modeling process. to evaluate the project's impact on the preexisting thermal loads of the hospital. The thermal data was only for a subset of the year. Based on this data, forecasts for changes in the facility's thermal load as a result of the project were developed to determine how much usable heat from the CHP system would be consumed by the hospital. The rest of the heat would be unused. These assumptions are shown in Table 8.

Table 8: Assumptions Used in Cogen Energy Model

	MMBTU/hr	MMBTU/yr
Total heat recovery available	11.37	94,689
Constant DHW	1.202	10,010
Summer (JJAS) (rejected 2.776MMBTU/hr)	7.392	20,520
Fall/Spring (MAMSO) (rejected 1.388MMBTU/hr)	8.78	30,467
Winter (NDJF) (rejected 0 MMBTU/hr)	10.17	28,226
Total hours 8328		89,223
432 hours for maintenance		

Energy model calculations were run based on 15-minute demand windows. The model makes a calculation every 15 minutes based on the electric interval data received from HHC and the thermal load profiles that were developed. The calculation sequence is as follows:

a) Determine whether the engines are available to run. This allows for the off periods for maintenance.

b) Assign the appropriate 15-minute kW generated, fuel usage and thermal available

c) Adjust thermal available by table above and account for electrical cost to reject heat

d) Apply parasitic loads to total kW output to determine Net power available

e) For energy balance, add net kWh generated (in BTU), used thermal (in BTU) and divide by fuel used (in BTU) to determine 15-minute efficiency

f) This process is repeated four times per hour or 35,040 times for the year

Pages 3-7 of the Energy Model in Appendix E provide a further narrative for how these values were quantified. Electricity consumption was quantified utilizing the described energy model. The

reduction of steam use from the No-Action Scenario was also quantified using the energy model. Utilizing CO_2e conversion factors determined in the text of Local Law 97, total annual GHG emissions for each project scenario were calculated based on total energy consumption. Excluding the small fraction of energy that's consumed by the facility's on-site emergency generators, which is equivalent for both scenarios, all the energy and heat for the hospital in the No-Action Scenario is currently supplied by Con Edison. This energy supply is supplemented by the Cogen in the With-Action scenario offsetting a portion of energy supplied by Con Edison. Natural gas consumption calculations were initially determined using the input capacity of the engines assuming they will run 8760 hours per year and multiplying this by manufacturer-provided emission factors. These values were then refined using a load estimate of 95% continuous operation, bringing the annual hours of operation down to 8,328. Anticipated electricity consumption was calculated using the available waste heat per hour, multiplied by the number of available operating hours, and assumed efficiency decreases in the summer and fall/spring due to dropping heat loads in the hospital. Steam consumption quantified in the energy model (in lbs) was converted to mmBTU using the standard conversion of 1 lb of steam = 1,194 BTU. Modeled electricity usage (in kWh) and modeled steam reduction and natural gas usage (in kBTU) were multiplied by Local Law 97 GHG emission factors to calculate annual GHG emissions for each source. Annual emissions for each source were then added together to arrive at the total GHG emissions (see Table 9).

In the With-Action (Cogen) Scenario, if the hospital uses 3964 kW of generation from the proposed engines, then a 3964 kW load will be taken off or displaced from the load on the grid. At maximum load GHG emissions are significantly higher for a ConEd turbine versus the proposed Cogen engine. In the With-Action Scenario, the annual consumption of electricity from the grid would reduce from 182,080,602 kBTU of energy in the No-Action Scenario to 71,042,296 kBTU of energy in the With Action Scenario, for a total reduction in grid electricity usage of 61%.

Table 9:Total Annual GHG Emissions With-Action and No-Action

Usage	Local Law 97 GHG Factors 2024-2029 [1]	GHG Emissions With Action (Cogen)		GHG Emissions No Action (No Cogen)		Net Change in CO_2e [7]
	CO_2 Equivalent	Energy Usage	CO_2e Release	Energy Usage	CO_2e Release	
	Tons/KBTU	KBTU/Year	TPY	KBTU/Year	TPY	TPY
Electricity Purchased from Con Ed [2]	0.000084689 [3]	71,042,296	6,017	182,080,602	15,420	-9,404
Electricity Avoided	0.000084689 [3]	-111,038,306	-9,404	0	0	-
Steam Purchased from Con Ed [4]	0.00004493	194,201,712	8,725	283,100,982	12,720	-3,994
Steam Avoided	0.00004493	-88,899,270	-3,994	0	0	-
Total Energy Consumption from Nine (9) Emergency Generators [5]	0.00007421	3,080,568	229	3,080,568	229	0
Natural Gas Consumption with Cogen [6]	0.00005311	297,649,382	15,808	0	0	15,808
Total			30,779		28,369	**2,410**
					Percent Inc. in GHG:	**8.50%**

1. GHG Emission Factors from NYC Local Law 97 were utilized
2. Electricity consumption calculated from ConEd electric bills
3. LL97 emission factor = 0.000288962 tons CO2e/kWh * (1 kWh / 3.412 kBTU) = .0000846899 tons CO2e/kBTU
4. Steam consumption calculated from ConEd steam bills
5. Steam avoided calculated based on steam saved from Energy Model (see appendix E)
5. Energy consumption calculated from total annual fuel usage of all 9 generators; no change in gen usage in With Action Scenario
6. Theorized potential emissions of the Cogens based on manufacturer's fuel rate specifications and assumption that the CHP will run for 8,328 hours/year.
7. Negative values indicate a decrease in CO2e emissions, positive values indicate an increase in CO2e emissions.

In the With-Action Scenario, the annual consumption of electricity from the grid would reduce from 182,080,602 kBTU of energy in the No-Action Scenario to 71,042,296 kBTU of energy in the With-Action Scenario, for a total reduction in grid electricity of 61%. The With-Action Scenario would also consist of an 88,899,270 kBTU reduction in steam consumption from ConEd (see Table 9).

To reduce emissions of and from the CHP engines, the design includes the installation of a Selective Catalytic Reduction (SCR) and Oxidation Catalyst (OXICAT) urea system. This is the Best Available Control Technology (BACT) for reciprocating natural gas engines as regulated by EPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) for reducing NOx, CO, and Non-Methane & Non-Ethane Hydrocarbon (NMNEHC) emissions.

Table 10: Anticipated Percent Reductions in NOx, CO, and NMHNEHC

	Pre-Catalyst Emissions (g/bhp-hr)	Post-Catalyst Emissions (g/bhp-hr)	Percent Reduction (%)
NOx	1.18	0.1	91.5
CO	1.66	0.6	63.9
NMNEHC	0.42	0.1	76.2

The total gas, diesel and steam consumption was calculated from data in the energy model (see Appendix G). To further clarify the energy usage values and where they came from, the "Electricity Purchased from ConEd" value in the No-Action scenario was calculated through the facility's ConEd electrical consumption totals during the year 2023 (see Appendix G). The "Electricity Purchased from ConEd" in the With-Action scenario was calculated by subtracting the facility's total 2023 ConEd consumption from the modeled energy production that the Cogens can offset (See Appendix E for energy model calculations). The "Steam Purchased from ConEd" in the No-Action Scenario was calculated through the facility's ConEd steam consumption totals during the year 2023 (See Appendix G). The "Steam Purchased from ConEd" in the With-Action Scenario was calculated by subtracting the facility's total 2023 ConEd consumption from the modeled steam production the Cogens can offset (See Appendix E). The "Total Energy Consumption from Nine (9) Emergency Generators" for both the With-Action and the No-Action scenarios was calculated through the facility's 2023 fuel consumption totals for their generators. This value does not change from scenario to scenario, as the emergency generators are not being rewired to power other portions of the hospital as a result of the addition of the Cogens, and as such was assumed to remain constant. The "Natural Gas Consumption with Cogen," category under the No-Action scenario assumes the Cogen is not installed and is not contributing to the emissions. Under the With-Action scenario, the consumption values were calculated using the fuel rate from manufacturer's specifications in the facility-wide emissions inventory calculations and assuming the Cogen will operate for 8,328 hours per year. The Natural Gas consumption was calculated using the input capacity of the Cogens assuming

they will run 8,760 hours per year and multiplying this by manufacturer-provided emission factors. The values were then refined using a load estimate of 95% continuous operation, bringing the annual hours of operation down to 8,328. Comparing this value to the Natural Gas consumption values in the Energy Model (see Appendix E), the Energy Model takes into account service intervals in a conservative estimate of 432 hours as well as 63 hours per year of unplanned outages. This leads to a total of 8,265 hours per year of continuous operation according to the Energy Model.

By then comparing the total tons of CO_2e released per year for the With-Action and the No-Action scenarios, a net change in CO_2e emissions was calculated. Ultimately, the proposed Cogen installation resulted in a net increase of approximately 2,410 tons of CO_2e, for a roughly 8.50% increase in facility-wide emissions. The only other emission sources at the facility are the nine (9) emergency generators which were considered in this analysis. Calculations for the annual CO_2e for these engines are shown in Appendix G.

Chapter 18 of the CEQR Technical Manual lists the following considerations for evaluating whether the project is consistent with the city's GHG reduction goals:

- Pursue transit-oriented development;
- Generate clean, renewable power through replacement of inefficient power plants with state-of-the-art technology and expanding the use of clean distributed generation.
- Construct new resource- and energy-efficient buildings (including the use of sustainable construction materials and practices) and improve the efficiency of existing buildings.
- Encourage sustainable transportation through improving public transit, improving the efficiency of private vehicles, and decreasing the carbon intensity of fuels.

As shown in Table 9, with the installation of the proposed CHP system, the facility's total GHG emissions will increase to 30,779 tons CO_2e/year. New York City has set emission limits by property type for the years 2024-2029. For hospitals (Building Code Classification I-2), the

building emissions intensity limit designated by the NYC Department of Buildings is 0.02381 tons CO2e/sf. Bellevue Hospital's gross square footage is approximately 2,124,441 sq. ft., giving the facility an emissions intensity limit of 50,583 tons CO2e/year. In the With-Action Scenario, the facility reaches 60.8% of the 2024-2029 limits. In the No-Action Scenario, the facility reaches 56.1% of the 2024-2029 limits.

Emission limits for 2030-2034 (0.01193 tons CO2e/sf) are reduced even further to 25,345 tons CO2e/year. In the With-Action Scenario, the facility reaches 121.4% of the 2030-2034 limits. In the No-Action Scenario, the facility reaches 111.9% of the 2030-2034 limits. In the future, the facility needs to seek more activities they can apply to reduce GHG emissions, so that they can comply with LL97 rule in that outyear (2030-2034), additional measures will be required for LL97 compliance beginning in 2030.

Table 11: LL97 Emission Limits for Health Care in Future 10 Years

	LL97 Annual Emission Limit 2024-2029 (tCO2e/sf)	LL97 Annual Emission Limit 2030-2034 (tCO2e/sf)
Health Care	0.02381	0.01193

By generating their own power from the CHP system, the facility energy efficiency increases by reducing reliance on the less efficient electricity and heat supplied by Con Edison. The proposed CHP system would be fitted with state-of-the-art SCR/Oxidation Catalyst technologies with the aim of minimizing emissions as much as possible. The goal of this project is to make the entire facility energy efficient by producing electricity on site and using waste thermal energy to heat the property.

The proposed project does not impact either public transit or private vehicle use, and therefore those considerations are not relevant to this analysis.

2.7 NOISE ANALYSIS

According to the CEQR Technical Manual, a noise analysis is appropriate if an action would

generate any mobile or stationary sources of noise or would introduce a new noise- sensitive use in an area with high ambient noise levels. The proposed project would not generate or reroute vehicular traffic, so an analysis of mobile sources of noise is not warranted. The mechanical systems for the proposed project have been designed to meet all applicable noise regulations. The Cogen engines will be in a sound-attenuating enclosure and equipped with silencers to avoid producing noise levels that would result in significant increases in ambient noise levels.

The proposed Cogen system would not constitute noise-sensitive uses. An acoustical study was performed at the outset of this project and design considerations were taken based on the recommendations of this study. The results and recommendations of this study are present in Appendix I. The mechanical equipment introduced by the proposed action would not result in any significant adverse noise impacts.

2.8 PUBLIC HEALTH

Since the Air Quality study found compliance with National Ambient Air Quality Standards (NAAQS), air quality will not be significantly impacted by this project. The project will also not impact hazardous materials or noise, so further analysis on public health impacts is not required.

2.9 ENVIRONMENTAL JUSTICE SITING

The NYSDEC's online Disadvantaged Communities Assessment Tool (DACAT) was used to determine whether the project was within or near a Disadvantaged Community (DAC). The project is located within Census Tract 36061006200, and is designated as a DAC by the New York State Climate Justice Working Group (CJWG). See Figure 8 for the DAC map indicator of the project location.

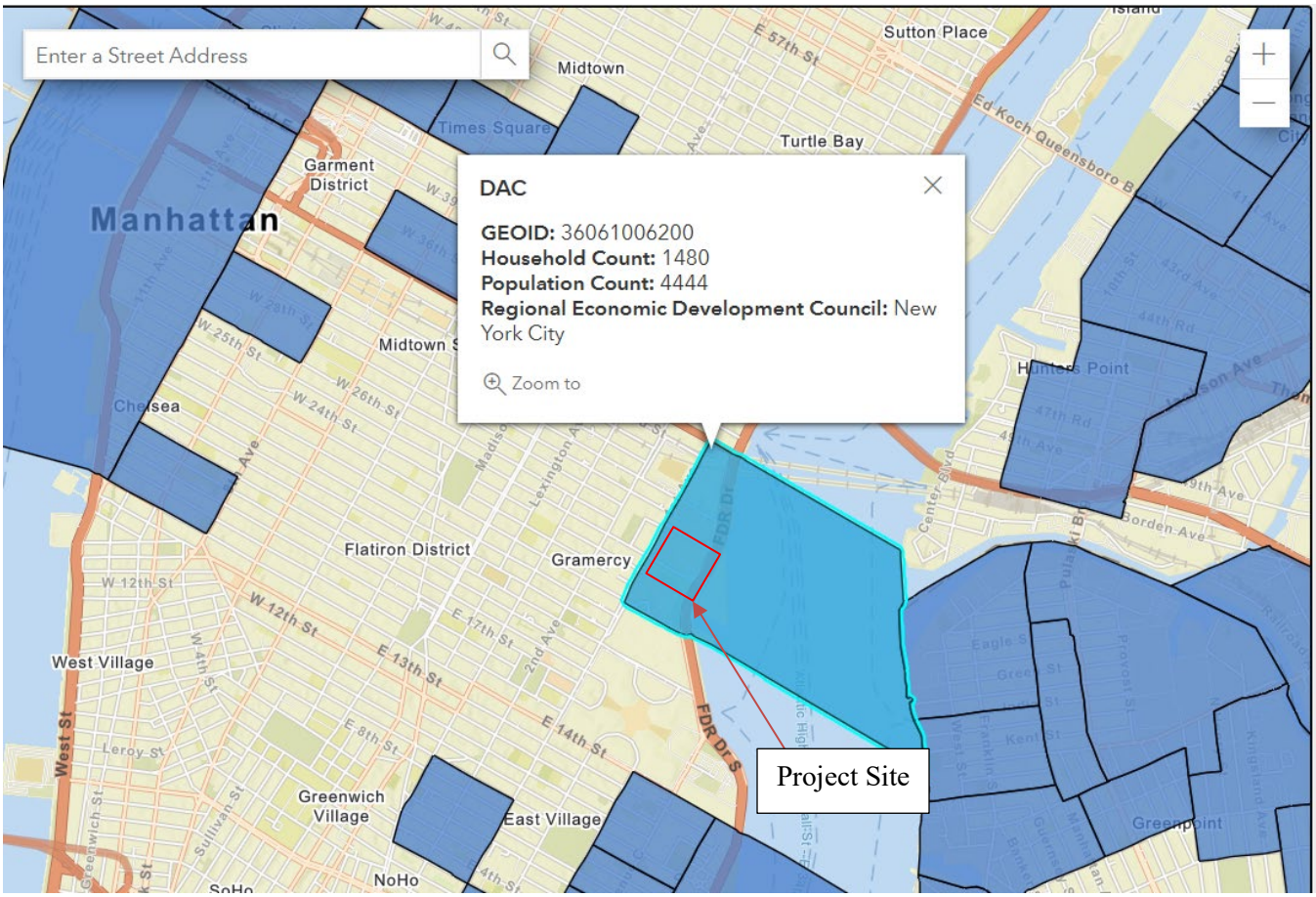

Figure 8: DAC Map and Corresponding Project Location.

The project would not involve any change in zoning or land use, or have a negative impact on the residential, commercial, or other facilities in the area. The effects of the project on zoning or land use would not result in any disproportionate burden to nearby DACs.

Regarding the potential effects of hazardous materials as a result of the proposed project, the facility was determined to have five (5) 15,000-gallon underground storage tanks on site. The project is for a natural gas fired CHP system, and no portions of the project involved manipulating, altering, or tying into any of the preexisting storage tanks. As such, there would be no disproportionate burden on nearby DACs due to hazardous materials.

The energy analysis portion of the project indicates that the CHP system will increase the Hospital's onsite natural gas consumption, improve the resilience of their energy system and ensure that critical healthcare infrastructure stays operating in the event of an emergency outage. The increased resilience of the energy system to deal with emergency outages would

not result in a disproportionate pollution burden to DACs.

The proposed project would not result in an increase in ambient NO2 concentrations that exceed NAAQS standards or NYCDEP CEQR standards. It would not result in a disproportionate pollution burden for the nearby DACs, and thus not have an impact on the DAC. The proposed project indicated that exceedances in PM2.5 concentrations were observed near some air intakes at the Hospital. Filters capable of effectively capturing particles within the PM2.5 range will be installed at all identified air intakes around the facility. Due to the Hospital's measures to remain in compliance with all applicable air quality standards, no potential burdens on DACs were identified.

The increase in on-site generation of heat and electricity as a result of this project would not create a potential burden on DACs.

The noise study conducted found that the project would not result in any significant adverse noise impacts, presenting no adverse burden to the nearby DACs.

In conclusion, the proposed project would not result in adverse impacts or contribute to a disproportionate pollution, noise, or disturbance burden on any DAC.

APPENDICES

APPENDIX A: SITE PLAN SHOWING STACK ROUTING AND BUILDING LABELS

APPENDIX B: WATERFRONT REVITALIZATION PROGRAM CONSISTENCY ASSESSMENT FORM

APPENDIX C: OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION LETTER OF NO ADVERSE IMPACT

APPENDIX D: NYC LANDMARKS PRESERVATION COMMISSION NOTICE OF WITHDRAWAL

APPENDIX E: ENERGY MODEL

APPENDIX F: AIR QUALITY DISPERSION MODEL RESULTS

APPENDIX G: CO2 EQUIVALENT AND GHG CALCULATIONS

Usage	Local Law 97 GHG Factors 2024-2029 [1]	GHG Emissions With Action (Cogen)		GHG Emissions No Action (No Cogen)		Net Change in CO_2e [7]
	CO_2 Equivalent	Energy Usage	CO_2e Release	Energy Usage	CO_2e Release	
	Tons/KBTU	KBTU/Year	TPY	KBTU/Year	TPY	TPY
Electricity Purchased from Con Ed [2]	0.000084689 [3]	71,042,296	6,017	182,080,602	15,420	-9,404
Electricity Avoided	0.000084689 [3]	-111,038,306	-9,404	0	0	-
Steam Purchased from Con Ed [4]	0.00004493	194,201,712	8,725	283,100,982	12,720	-3,994
Steam Avoided	0.00004493	-88,899,270	-3,994	0	0	-
Total Energy Consumption from Nine (9) Emergency Generators [5]	0.00007421	3,080,568	229	3,080,568	229	0
Natural Gas Consumption with Cogen [6]	0.00005311	297,649,382	15,808	0	0	15,808
Total			30,779		28,369	**2,410**
					Percent Inc. in GHG:	**8.50%**

1. GHG Emission Factors from NYC Local Law 97 were utilized
2. Electricity consumption calculated from ConEd electric bills
3. LL97 emission factor = 0.000288962 tons CO2e/kWh * (1 kWh / 3.412 kBTU) = .0000846899 tons CO2e/kBTU
4. Steam consumption calculated from ConEd steam bills
5. Steam avoided calculated based on steam saved from Energy Model (see appendix E)
5. Energy consumption calculated from total annual fuel usage of all 9 generators; no change in gen usage in With Action Scenario
6. Theorized potential emissions of the Cogens based on manufacturer's fuel rate specifications and assumption that the CHP will run for 8,328 hours/year.
7. Negative values indicate a decrease in CO2e emissions, positive values indicate an increase in CO2e emissions.

Month-Year	Electricity Consumption from ConEd		Steam Consumption from ConEd (Mlbs)		Diesel Consumption from Generators (gallons)	
	kWh	kBTU	Mlbs	kBTU	Gallons	kBTU
Jan-23	3,745,600	12,779,987	25,451	30,388,494	489	68949
Feb-23	3,815,200	13,017,462	23,662	28,252,428	463	65283
Mar-23	3,641,600	12,425,139	23,487	28,043,478	511	72051
Apr-23	3,716,000	12,678,992	12,017	14,348,298	301	42441
May-23	4,294,400	14,652,493	14,248	17,012,112	487	68667
Jun-23	4,960,800	16,926,250	19,052	22,748,088	277	39057
Jul-23	5,352,800	18,263,754	16,916	20,197,704	6,138	865458
Aug-23	5,918,400	20,193,581	17,712	21,148,128	110	15510
Sep-23	5,533,600	18,880,643	18,491	22,078,254	404	56964
Oct-23	4,393,291	14,989,909	21,986	26,251,284	598	84318
Nov-23	3,849,544	13,134,644	17,247	20,592,918	145	20445
Dec-23	4,143,537	14,137,748	26,834	32,039,796	11,925	1681425
Totals	53,364,772	182,080,602	237,103	283,100,982	21,848	3,080,568

9 Emergency Generators Diesel fuel usage (gal/yr)[1]	Diesel fuel Heating Value BTU/gal	Energy Consumption (kBTU/year)	Local Law 97 GHG Factors 2024-2029 (tons CO2e/kBTU)	Annual GHG Emissions (Tons CO2e)
21,848	141,000	3,080,568	0.00007421	228.6

1. Calculated from Bellevue Hospital's 2023 total Diesel usage

APPENDIX H: ACOUSTIC STUDY

APPENDIX I: BELLEVUE HOSPITAL DEP PERMITS

APPENDIX J: PARKING SPACE CLARIFICATION LETTER

APPENDIX K: BELLEVUE AIR QUALITY CLARIFICATION LETTER

APPENDIX L: BELLEVUE HOSPITAL PM FILTER AFFIDAVIT

APPENDIX M: FACILITY-WIDE EMISSIONS INVENTORY