Environmental Justice Siting

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 1 for the DAC map indicator of the project location.

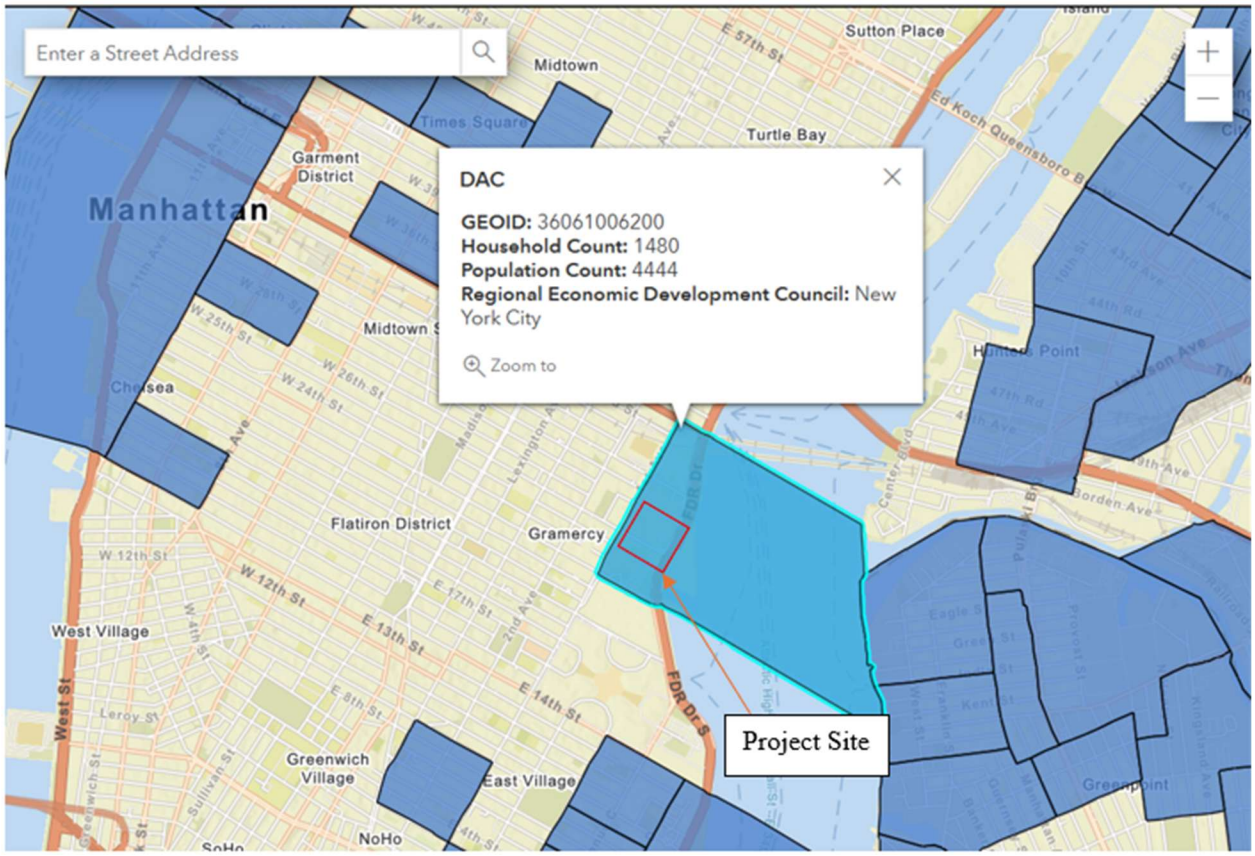


Figure 1: DAC Map and Corresponding Project Location.

In addition to the analysis of greenhouse gases (GHGs) and co-pollutants required under Section 7(3) of the Climate Leadership and Community Protection Act (CLCPA), the Environmental Justice Siting Law (EJSL; ECL 70-0118) requires consideration of any pollution the facility may emit, discharge, or cause within the DAC. This section (1) identifies the pollution the project may emit, discharge, or cause within the DAC; (2) identifies baseline data on existing burdens, including the DAC indicators used to designate the community; (3) evaluates whether the project could affect air quality, water quality, noise, odor, and any resulting health effects or other relevant DAC indicators; and (4) describes the project design measures that reduce or avoid any increase in burden.

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.

The facility has 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 involve 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 project will increase facility-wide NOx emissions from 2.46 to 10.84 tons per year. The air quality analysis indicated that the maximum modeled NO2 concentrations, when added to background concentrations, remain below the 1-hour and annual NAAQS, and that incremental PM2.5 concentrations remain below the applicable de minimis criteria. Therefore, the proposed project will not result in any disproportionate pollution burden for nearby Disadvantaged Communities, including with respect to the air quality and respiratory health indicators identified above. 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 facility's natural gas consumption will increase due to the operation of the CHP system, but this increase is offset by the electricity and steam production of the CHP system as well as a grid displacement credit due to the electricity generation of the CHP. This project results in a facility-wide net decrease in Greenhouse Gas emissions. While the GHG reductions associated with displaced grid electricity and purchased steam occur largely outside the DAC, the local co-pollutant impacts within the DAC have been evaluated directly through air dispersion modeling results. The results of air modeling for NO2 and PM2.5 are shown in Tables 1 and 2. The maximum predicted concentrations of NO2, when added to background concentrations, were found to meet the NAAQS 1-hour 98th percentile NO2 standard. Concentrations of PM2.5 will be below the applicable de minimis criteria. As shown in the tables, the total modeled NO2 concentrations for 1-hr and annual periods are below their corresponding NAAQS. In addition, the 24-hour and annual incremental PM2.5 impacts are 1.04 ug/m3 and 0.25 ug/m3, respectively. These resulting concentrations are below their corresponding de minimis impact criteria. Therefore, it is demonstrated that no potential significant adverse air quality impacts would result from the installation of the proposed CHP system.

Table 1: NO_2 Modeling Results

NO2 NAAQS

Averaging Period	Year	Source Group	Modeled Conc. w/ ARM2 (µg/m³)	Background Conc. [2] (µg/m³)	Total Ambient Conc. (µg/m³)	NAAQS (µg/m³)	Exceeds NAAQS?
1-Hour [1]	AVG	COGENS	57	110.64	167.93	188	No
		COGEN1	31	110.64	141.95	188	No
		COGEN2	31	110.64	141.51	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 (µg/m³)	Background Conc. [2] (µg/m³)	Total Ambient Conc. (µg/m³)	NAAQS (µg/m³)	Exceeds NAAQS?
Annual[1]	COGENS	2011	1.97	32.90	34.87	100	No
	COGENS	2012	1.93	32.90	34.83		No
	COGENS	2013	2.11	32.90	35.01		No
	COGENS	2014	1.64	32.90	34.54		No
	COGENS	2015	1.67	32.90	34.57		No
	COGENS	MAX	2.11	32.90	35.01		No
	ALL	2011	5.15	32.90	38.05	100	No
	ALL	2012	5.34	32.90	38.24		No
	ALL	2013	4.73	32.90	37.63		No
	ALL	2014	5.18	32.90	38.08		No
	ALL	2015	5.04	32.90	37.94		No
	ALL	MAX	5.34	32.90	38.24		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 2. $PM_{2.5}$ Modeling Results

Annual PM2.5 - CEQR

Averaging Period	Year	Source Group	Modeled Conc. ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Ambient Conc. ($\mu g/m^3$)	CEQR Standard ($\mu g/m^3$)	Exceeds CEQR?
Annual[1]	AVG	COGENS	0.25	-	0.25	0.3	No

[1] Represents H1H averaged over 5 years

24-hr PM2.5 CEQR

Averaging Period	Year	Source Group	Modeled Conc. ($\mu g/m^3$)	Background Conc.[2] ($\mu g/m^3$)	Total Ambient Conc. ($\mu g/m^3$)	CEQR Standard ($\mu g/m^3$)	Exceeds CEQR?
24-Hour[3]	AVG	COGENS	1.04	-	1.04	4.5	No

[3] 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
PM2.5	24-hour	***PS 19***	36-061-0128	New York	NY	22.5	98th percentile averaged over the 5 years
PM2.5	Annual	***PS 19***	36-061-0128	New York	NY	8.6	averaged over the 5 years

Background Concentrations ($\mu g/m^3$)					
2010	2011	2012	2013	2014	2015
25.5	24.7	20.5	25	19.7	22.7
9.43	9.42	8.5	8.34	7.69	8.09

Data Counts (days per year)[b]					
2010	2011	2012	2013	2014	2015
351	300	331	339	341	343
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 proposed project would not result in any new or increased discharge to surface water or groundwater. No in-water work is proposed. As such, there would be no disproportionate burden on nearby DACs due to water quality.

Natural gas combustion does not produce appreciable odors. The only potential odor source associated with the project is ammonia slip from the SCR system, which the manufacturer guarantees will not exceed 10 ppm @ 15% O2. The exhaust will be released through stacks approximately 180 feet above grade and 10 feet above the A-Building, and dispersion would reduce concentration at ground level and building receptors to levels below the ammonia odor threshold (approximately 5 ppm). As such, there would be no disproportionate burden on nearby DACs due to odor.

The noise study conducted found that the project would not result in any significant adverse noise impacts, with a maximum ambient sound level increase of 3 dBA at any receptor, below the 5 dBA significant impact threshold, presenting no adverse burden to the nearby DACs.

The air quality impacts of the project remain below the health-based NAAQS and the PM2.5 de minimis criteria, and the project would not result in noise, water quality, or odor impacts with the potential to affect health. Therefore, the project is not expected to worsen the air-related health indicators (e.g., asthma and COPD emergency department visits) or other relevant DAC indicators identified for Census Tract 36061006200.

Although the project results in an increase in facility-wide NOx emissions, the project design incorporates measures that minimize pollution impacts within the DAC, including a Selective Catalytic Reduction (SCR) and Oxidation Catalyst System on each engine for the reduction of NOx, CO, and VOC emissions; stacks extending approximately 200 feet above grade to promote dispersion; and a CHP enclosure to minimize noise. In addition, the CHP system improves the resilience of critical healthcare infrastructure serving the community and results in a facility-wide net decrease in GHG emissions.

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