



P. AIR QUALITY

This section presents an overview and results of the air quality assessment for the Proposed Project. The purpose of the air quality assessment is to demonstrate that the project satisfies applicable regulatory requirements and assesses whether it complies with the 1990 Clean Air Act Amendments (CAAA) and the U.S. Environmental Protection Agency (USEPA) policies and procedures.

The air quality assessment conducted for this project includes a qualitative analysis of criteria pollutants and a consideration of mobile (traffic) and stationary (HVAC) emission sources.

1. Existing Conditions

a) Background

As a result of the CAAA, regions are classified based on the severity of their air quality problems. Depending upon air quality data and ambient concentrations of pollutants, air quality control regions can be classified as one of three categories: attainment, non-attainment, or maintenance areas. Geographic areas that do not meet one or more of the federal air quality standards, known as National Ambient Air Quality Standards, or NAAQS, are considered "non-attainment" areas. "Attainment" areas meet all federal air quality standards. A "maintenance area" is an area that used to be non-attainment, but has demonstrated that the air quality has improved to attainment level. After 20 years of clean air quality, maintenance areas can be re-designated to attainment. Projects located in maintenance areas are required to evaluate their pollutant concentrations according to the NAAQS.

The Proposed Project is located in Dutchess County, New York, which is an attainment area for particulate matter, sulfur dioxide, lead, nitrogen dioxide, carbon monoxide and ozone.

b) Air Quality Standards

The USEPA has established the NAAQS to protect the public health. Table 3P-1 presents the NAAQS for carbon monoxide (CO), particulate matter (PM) and ozone (VOC and NO_x) for the study area.



Table 3P-1 National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour	None	None
	35 ppm (40 mg/m ³)	1-hour	None	None
Particulate Matter 2.5	12.0 µg/m ³	Annual	15.0 µg/m ³	Annual
	35.0 µg/m ³	24-hour	35.0 µg/m ³	24-hour
Particulate Matter 10	150.0 µg/m ³	24-hour	150.0 µg/m ³	24-hour
Ozone	0.075 ppm (147 µg/m ³)	8-hour	0.075 ppm (147 µg/m ³)	8-hour

The New York State Department of Environmental Conservation (NYSDEC) maintains an air quality monitoring system that collects concentrations of various pollutants within the State. This monitoring data was used to define the existing air quality levels, or background concentrations, within the Site and the surrounding area. Background concentrations are ambient pollution levels from other stationary, mobile, and area sources.

A review of the NYSDEC monitoring data indicates that the closest monitoring site to the Project Site that monitors CO is Loudonville, NY. The latest monitoring data that has been validated is for the year 2015. The 2015 maximum one-hour and eight-hour average CO concentrations at the Loudonville monitoring site is 1.0 parts per million (ppm) for each average. These values are consistent with the study area's CO attainment area status.

For PM_{2.5}, the closest monitoring site to the subject property that monitors PM_{2.5} is Newburgh, NY. The 24-hour PM_{2.5} NAAQS is based upon the average of the 98th percentile over the most recent three years. The 24-hour PM_{2.5} background value (the 98th percentile) over the most recent three years of data (2013-2015) was 17.1 micrograms per cubic meter (µg/m³). The annual PM_{2.5} background value was 6.9 µg/m³. Similarly, the 24-hour PM₁₀ background value, which is based on the Queen's College monitoring data, was 40 µg/m³. These values are significantly less than the 1-hour and 8-hour NAAQS. The background values are presented in Table 3P-1.



Table 3P-2 Air Quality Monitoring Concentrations*

Pollutant	Monitoring Location	Background Concentrations		NAAQS	
		Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	Loudonville (Region 4)	1.0 ppm	8-hour	9 ppm	8-hour
		1.0 ppm	1-hour	35 ppm	1-hour
Particulate Matter 2.5	Newburgh (Region 3)	6.9 µg/m ³	Annual	12.0 µg/m ³	Annual
		17.1 µg/m ³	24-hour	35.0 µg/m ³	24-hour
Particulate Matter 10	Queens College (Region 2)	40 µg/m ³	24-hour	150.0 µg/m ³	24-hour

* Represents 2015 NYSDEC Monitoring Data

The NYSDEC and the USEPA have established guidance that defines the air quality modeling and review criteria for analyses prepared pursuant to the CAAA. The CAAA requires that a development not:

- Cause any new violation of the NAAQS;
- Increase the frequency or severity of any existing violations; or
- Delay attainment of any NAAQS.

2. Future without the Proposed Project

Without the Proposed Action, air quality conditions in the region would remain as previously described. See the No Action Alternative described in Chapter 4 for more detailed information.

3. Potential Impacts as a Result of the Proposed Project

a) Potential Air Quality Impacts Due to Construction

Construction activities associated with grading and excavation on the Project Site could result in temporary air quality impacts. Air quality in the area is not expected to be substantially affected by project construction because of the temporary nature of the construction and the confined construction area. The construction schedule is expected to extend up to a 5 year period. Emissions from the operation of construction machinery would mostly contain particulate matter (PM).



Construction activities associated with the Proposed Project would be temporary and are not anticipated to impact general conformity or public health. Nevertheless, emission mitigation techniques would still be employed throughout construction of the project as discussed further below.

b) Potential Air Quality Impacts Due to Post Construction Activity

Mobile Sources

The Project Site is located in an attainment area for CO. Violation of the CO standard set by the NAAQS has become increasingly infrequent. This is due to a number of factors. Primarily, the vehicular emission rates of CO have decreased and would continue to decrease with the passage of time due to newer vehicles with better emission controls¹. Additionally, the CO background concentration in the region has remained constant over the past ten years². Vehicle trips generated by the Project are anticipated to be 585 new trips during the AM peak hour and 438 new trips during the PM peak hour.

Considering the three controlling factors for the determination of CO impact: project traffic, background concentration, and emission rates; it is not anticipated that the Project would cause significant CO impacts. The CO emission rates of vehicles would decrease over time, and the background CO concentration is much lower than the 1-hour and 8-hour NAAQS. Therefore, it is not expected that there would be any adverse impacts to the regional CO levels.

Stationary Sources

The Project would require boilers or other fuel burning sources. The specific equipment parameters, such as the number of units, size, and location, would be determined when building design progresses. All required permits from NYSDEC Division of Air Resources would be applied for as required. The expanded wastewater treatment plant would adhere to all Dutchess County Department of Behavioral and Community Health and NYSDEC regulations.

4. Proposed Mitigation

Long term impacts to air quality are not anticipated due to the Proposed Project, therefore, no long-term mitigation measures are required. Any stationary sources associated with the Project would comply with appropriate State and local regulations. Any required air permits would be obtained.

¹ "Transportation Air Quality Facts and Figures" *Vehicle Emissions*, Federal Highway Administration. January 2006. <https://www.fhwa.dot.gov/environment/air_quality/publications/fact_book/page15.cfm>

² New York Department of Environmental Conservation, *New York State Ambient Air Quality Reports*, Multiple Years.



Short term impacts to air quality due to construction are expected but would be temporary (during the approximate 5-year period) and would cease upon Project completion. Construction would be conducted in accordance with approved site plans and in accordance with all applicable federal, State and Town codes. It is anticipated that nearby properties would experience temporary fugitive dust and an elevation in vehicle emissions from construction vehicles throughout occasional periods during construction of the proposed Project. This is a temporary, unavoidable impact.

Specific mitigation measures for short term impacts during construction include prohibition of excessive construction equipment idling, outfitting all construction equipment and vehicles with appropriate features to limit exhaust fumes, wetting and stabilizing soils to suppress dust generation, and covering trucks carrying solid and other dry materials.

All existing and future carbon monoxide concentrations are expected to be below the NAAQS, and the Proposed Project conforms to the CAAA because:

- No violation of the NAAQS are expected to be created.
- No increase in the frequency or severity of any existing violations (none of which are related to this development) would be anticipated to occur.
- No delay in attainment of any NAAQS would be expected to result due to the implementation of the Proposed Action.