A. INTRODUCTION AND SUMMARY OF FINDINGS

This Chapter analyzes the potential of the Proposed Project to result in a significant adverse air quality impact. In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the National Ambient Air Quality Standards (NAAQS), thresholds defined by the U.S. Environmental Protection Agency (EPA), has the potential to result in a significant adverse impact.

A.1. SUMMARY OF FINDINGS

The buildings of the Proposed Project would not be located in close proximity to existing receptor locations. An air quality screening analysis was conducted and determined that there would be no potential for significant adverse air quality impacts from the stationary sources at each of the buildings. Similarly, the project-generated traffic did not result in an exceedance of the screening procedures developed by New York State Department of Transportation (NYSDOT). Therefore, the Proposed Project would not result in a significant adverse air quality impact.

B. EXISTING CONDITIONS

As required by the Clean Air Act (CAA), primary and secondary NAAQS have been established[1] for six major air pollutants: CO, NO_2, ozone, respirable PM (both $PM_{2.5}$ and PM_{10}), SO_2, and lead. The primary standards represent levels that are requisite to protect the public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The most recent concentrations of criteria pollutants at NYSDEC air quality monitoring stations nearest to the Proposed Project and their comparison to the NAAQS are presented in **Table 13-1**.

EPA lowered the NAAQS for the annual $PM_{2.5}$ primary standard from the previous level of 12 micrograms per cubic meter ($\mu g/m^3$) to 9 $\mu g/m^3$, effective May 6, 2024. The current annual secondary standard (15 $\mu g/m^3$), 24-hr primary and secondary standard (35 $\mu g/m^3$), and the PM_{10} 24-hour average primary and secondary standard (150 $\mu g/m^3$) were retained.

For most pollutants, the concentrations presented are averaged over three years, to account for anomalies between years. As shown, the recently monitored levels for all pollutants well below the NAAQS. However, historical concentrations of ozone within the region have exceeded the NAAQS. Consequently, the EPA classified Nassau, Rockland, Suffolk, Westchester, and the five New York City counties as a "serious" non-attainment area ("NAA"), effective September 23,

[1] EPA. *National Ambient Air Quality Standards*. 40 CFR part 50.

2019 (NY portion of the New York–Northern New Jersey–Long Island, NY-NJ-CT, NAA). This imposed a new deadline for the State to develop an implementation plan to achieve ambient concentrations of ozone that fall below the public health thresholds of the NAAQS.

Table 13-1
Representative Monitored Ambient Air Quality Data

Pollutant	Location	Units	Averaging period	Concentration	NAAQS
CO	New York Botanical Garden (NYBG), Bronx	ppm	1-hour	2.00(1)	9
			8-hour	1.7(1)	35
SO_2	NYBG, Bronx	µg/m^3	1-hour	9.62(2)	196
PM_{10}	I.S. 52, Bronx	µg/m^3	24-hour	44	150
$PM_{2.5}$	Newburgh	µg/m^3	Annual	6.2(3)	9
			24-hour	17.8(3)	35
NO_2	NYBG, Bronx	µg/m^3	Annual	24.6	100
			1-hour	91.6(4)	188
Lead	Wallkill	µg/m^3	3-month	0.0066(5)	0.15
Ozone	Mt Nimham	ppm	8-hour	0.062(6)	0.070

Notes:
Values represent the most recent monitored concentrations of all criteria pollutants at NYSDEC air quality monitoring stations nearest to the Project Site.
(1) The CO concentration for short-term average is the second highest from the most recent year with available data.
(2) The 1-hour value is based on a 3-year average (2020–2022) of the 99th percentile of daily maximum 1-hour average concentrations. EPA replaced the 24-hr and the annual standards with the 1-hour standard.
(3) Annual value is based on a 3-year average (2020–2022) of annual concentrations. The 24-hour value is based on the 3-year average of the 98th percentile of 24-hour average concentrations.
(4) The 1-hour value is based on a 3-year average (2020–2022) of the 98th percentile of daily maximum 1-hour average concentrations.
(5) Based on the highest quarterly average concentration measured in 2022.
(6) Based on the 3-year average (2020–2022) of the fourth highest daily maximum 8-hour average concentrations.
Source: New York State Air Quality Report Ambient Air Monitoring System, NYSDEC, 2022.

C. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project (the "No Action" condition), the Project Site would remain in its current form. Traffic around the Project Site would not be expected to significantly increase between existing and No Action conditions. Additionally, emissions would be expected to be approximately the same under the No Action condition.

D. FUTURE WITH THE PROPOSED PROJECT

D.1. STATIONARY SOURCE ANALYSIS

D.1.a. Stationary Source Screening

A screening analysis was performed to assess potential air quality impacts associated with emissions from heat and hot water systems for each of the buildings of the Proposed Project. The methodology described in New York City's *2021 CEQR Technical Manual* was used for the analysis, and considered impacts on sensitive uses (i.e., existing residences and proposed developments). The screening procedures utilize representative dispersion modeling within a

developed environment where elevated building receptors would be located nearby the proposed sources. Consequently, the results of the screening procedures would conservatively assess the potential for air quality impacts at nearby locations.

The methodology determines the threshold of development size below which the action would not have a significant adverse impact. The screening procedures utilize information regarding the type of fuel to be used, the maximum development size, and the heat and hot water systems' exhaust stack height, to evaluate whether a significant adverse impact may occur. Based on the distance from the development site to the nearest building of similar or greater height, if the maximum size of a proposed building is greater than the threshold size shown in the *CEQR Technical Manual*, there is the potential for significant air quality impacts, and a refined dispersion modeling analysis would be required. Otherwise, the source passes the screening analysis, and no further analysis is required.

Since the HVAC Systems of the Proposed Project have not yet been finally designed, each building was evaluated with the nearest existing or proposed building of a similar or greater height analyzed as a potential receptor. It was conservatively assumed that natural gas would be used for the buildings' HVAC systems, and that the exhaust stack(s) would be located three feet above roof height (the default assumption in the *CEQR Technical Manual*). Therefore, Figure App 17-2 of the *CEQR Technical Manual* was used.

The four-story villa buildings and the four-story apartment building would be taller than any of the existing buildings within 400 feet (the maximum screening distance). Therefore, the analysis conservatively analyzed the potential for air quality impacts at a distance of 400 feet from the combined size of these buildings—approximately 308,945 gsf. Based on Figure App 17-2 of the *CEQR Technical Manual*, there would be no potential for air quality impacts at distances greater than approximately 110 feet. Therefore, the combination of the villa and apartment buildings would not result in a significant adverse air quality impact.

The two-story flats were conservatively analyzed as a combined total of approximately 55,650 gsf. The nearest existing building of similar or greater height would be a residence located to the east of the flats. Each of the seven flat buildings would be located greater than 400 feet from the edge of the Project Site between the residence and the closest flat building. Therefore, the analysis conservatively analyzed the potential for air quality impacts at a distance of 400 feet. Based on Figure App 17-2 of the *CEQR Technical Manual*, there would be no potential for air quality impacts at distances greater than approximately 40 feet. Therefore, the flat buildings would not result in a significant adverse air quality impact.

Similarly, the two-story townhouse buildings, the clubhouse building, and the townhouse amenity building were conservatively analyzed as a combined total of approximately 406,688 gsf. The nearest existing building of similar or greater height would be a residence located to the southeast of the buildings. Each of the buildings would be located greater than 400 feet from the edge of the Project Site between the residence and the closest building (the clubhouse building).

Therefore, the analysis conservatively analyzed the potential for air quality impacts at a distance of 400 feet. Based on Figure App 17-2 of the *CEQR Technical Manual*, there would be no potential for air quality impacts at distances greater than approximately 140 feet. Therefore, the combination of the townhouse buildings, clubhouse building, and townhouse amenity building would not result in a significant adverse air quality impact.

Lastly, the potential for each building to impact another proposed building was considered. The proposed buildings would be separated by at least 50 feet. Based on Figure App 17-2 of the *CEQR Technical Manual*, any building with a size less than approximately 80,000 gsf would not have the potential to result in a significant air quality impact. All buildings except for the main apartment building, are less than 80,000 gsf. The apartment building was therefore considered separately.

The nearest building of similar or greater height to the apartment building would be a villa building, approximately 80 feet north of the apartment building. Therefore, the screening analysis of the apartment building assessed the potential for impacts at a distance of 80 feet from a 100,785 gsf residential building. Based on Figure App 17-2 of the *CEQR Technical Manual*, there would be no potential for air quality impacts at distances greater than approximately 60 feet. Therefore, the apartment building would not result in a significant adverse air quality impact.

Based on the screening analysis presented above, the HVAC systems for the Proposed Project, in the worst-case natural-gas fired condition, would not result in a significant adverse air quality impact.

D.2. MOBILE SOURCE ANALYSIS

D.2.a. Carbon Monoxide (CO) Screening

The area roadway intersections analyzed in Chapter 12, "Traffic and Transportation," were reviewed based on NYSDOT's *Transportation Environmental Manual (TEM)* criteria for determining locations that may warrant a CO microscale air quality analysis. The screening analysis examined the Level of Service (LOS) and projected volume increases by intersection approach. As described below, the results of the screening analysis show that none of the intersections affected by the Proposed Project would require a detailed microscale air quality analysis indicating that traffic associated with the Proposed Project would not have a significant adverse air quality impact.

D.2.a.i LOS Screening Analysis

Results of the traffic capacity analysis performed for the 2026 Build year condition (i.e., with the Proposed Project), for the AM, PM, and Saturday Midday peak hours were reviewed at each of the Traffic Study Area intersections to determine the potential need for a microscale air quality analysis. The LOS screening criteria were first applied to identify those intersections with approach LOS D or worse. Based on the review of the nine intersections analyzed, the following two intersections were projected to operate at a LOS D or worse on approaches for the peak traffic periods:

- Barger Street and U.S. Route 6
- East Main Street and U.S. Route 6

D.2.a.ii Capture Criteria Screening Analysis

Further screening on the intersections identified in the LOS Screening Analysis was conducted using the Capture Criteria, outlined above. This screening indicated that one or more of the listed Capture Criteria would be met at one of the above five intersections (East Main Street and U.S. Route 6). Therefore, a volume threshold screening analysis was performed based on the screening procedures described in NYSDOT's *TEM.*

D.2.a.iii Volume Threshold Screening

The results of the volume threshold screening analysis performed for each approach at the East Main Street and U.S. Route 6 intersection found that no approach would exceed the applicable threshold and, as such, the Proposed Project would not be anticipated to result in a significant adverse impact to CO concentrations.

D.2.b. Particulate Matter (PM) Screening

As discussed in Chapter 12, "Traffic and Transportation," it is expected that up to five delivery or service vehicles per day, including small USPS, UPS, and FedEx trucks, would arrive at the Project Site. Parcel delivery services would primarily utilize existing routes and anticipated to use U.S. Route 9 or I-684 for regional access, and U.S. Route 6 to Hill Boulevard to East Main Street for access to the Project Site. Consequently, the Proposed Project would not generate or divert substantial volumes of diesel vehicle traffic as compared with the No Build Alternative (i.e., No Action alternative). Therefore, based on NYSDOT and USEPA guidance, a PM microscale analysis is not required.

E. MITIGATION MEASURES

As the Proposed Project would not result in any significant adverse air quality impacts, no mitigation measures would be warranted. ✷