3.11.5 Construction Air Quality

3.11.5.1 Introduction

Construction of the Proposed Project, which is comprised of the proposed flood barrier system and interior drainage improvements, including the pump station in Reach 1, would require the use of both stationary source (nonroad) construction equipment and on-road (mobile source) vehicles, both of which have the potential to affect air quality. Nonroad construction equipment includes, for example, cranes, loaders, and excavators. On-road vehicles include, for example, construction delivery and dump trucks arriving to and departing from the construction site as well as dust generating on-site operations (i.e., transferring excavated materials into dump trucks, vehicle traveling on-site) and worker vehicle operations to and from the Project Area.

A quantitative analysis was performed to determine the potential for significant adverse impacts from these construction period sources of air emissions using the *City Environmental Quality Review (CEQR) Technical Manual* procedures.

3.11.5.2 Principal Conclusions

Measures would be taken to reduce pollutant emissions during construction of the Proposed Project in accordance with all applicable laws, regulations, and building codes. These include the use of ultra-low sulfur diesel (ULSD) fuel, dust suppression measures, idling restrictions, diesel equipment reduction, and use of best available technology (i.e., equipment meeting the U.S. Environmental Protection Agency's [USEPA] Tier 4 emission standard). With the implementation of these emission reduction measures, the dispersion modeling analysis of construction-related air emissions for both non-road and on-road sources determined that particulate matter ($PM_{2.5}$ and PM_{10}), annual average nitrogen dioxide (NO_2), and carbon monoxide (CO) concentrations would be below their corresponding *de minimis* thresholds or National Air Quality Ambient Standards (NAAQS), respectively. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources.

3.11.5.2.1 Criteria Pollutants

In accordance with the Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.), USEPA established primary and secondary NAAQS for six criteria air pollutants: CO, NO_2, ozone, $PM_{2.5,}$ PM_{10}, sulfur dioxide (SO_2), and lead. The primary standards represent levels that are requisite to protect 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 primary standards are generally either the same as the secondary standards or more restrictive. The NAAQS are presented in **Table 3.11.5-1**.

Carbon Monoxide

Carbon Monoxide (CO), a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In urban areas, approximately 80 to 90 percent of CO emissions are from motor vehicles. CO concentrations can diminish rapidly over relatively short distances; elevated concentrations are usually limited to locations near crowded intersections, heavily traveled and congested roadways, parking lots, and garages. Consequently, CO concentrations must be analyzed on a local (microscale) basis.

Table 3.11.5-1
National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary		Secondary	
	ppm	µg/m3	ppm	µg/m3
Carbon Monoxide (CO)				
8-Hour Average	9(1)	10,000	None	
1-Hour Average	35(1)	40,000		
Lead				
Rolling 3-Month Average	NA	0.15	NA	0.15
Nitrogen Dioxide (NO_2)				
1-Hour Average(2)	0.100	188	None	
Annual Average	0.053	100	0.053	100
Ozone (O_3)				
8-Hour Average(3)	0.070	140	0.070	140
Respirable Particulate Matter (PM_{10})				
24-Hour Average(7)	NA	150	NA	150
Fine Respirable Particulate Matter ($PM_{2.5}$)				
Annual Mean(4)	NA	9	NA	15
24-Hour Average(5)	NA	35	NA	35
Sulfur Dioxide (SO_2)				
1-Hour Average(6)	0.075	196	NA	NA
Maximum 3-Hour Average(1)	NA	NA	0.50	1,300

Notes: ppm – parts per million (unit of measure for gases only)
µg/m^3 – micrograms per cubic meter (unit of measure for gases and particles, including lead)
NA – not applicable
All annual periods refer to calendar year.
Standards are defined in ppm. Approximately equivalent concentrations in µg/m^3 are presented.
(1) Not to be exceeded more than once a year.
(2) 3-year average of the annual 98th percentile daily maximum 1-hr average concentration.
(3) 3-year average of the annual fourth highest daily maximum 8-hr average concentration.
(4) 3-year average of annual mean; USEPA has lowered the NAAQS from 12 µg/m^3, effective May 6, 2024.
(5) Not to be exceeded by the annual 98th percentile when averaged over 3 years.
(6) 3-year average of the annual 99th percentile daily maximum 1-hr average concentration.
(7) Not to be exceeded more than once a year on average over 3 years.
Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOCs), and Ozone

Nitrogen Oxides (NO_x) are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis. The contribution of any action or project to regional emissions of these pollutants would include any added stationary (i.e., fixed facilities, construction engines) or mobile source (i.e., motor vehicles) emissions.

In addition to being a precursor to the formation of ozone, NO_2 (one component of NO_x) is also a regulated pollutant. Since NO_2 is mostly formed from the transformation of NO in the atmosphere, it has mostly been of concern further downwind from large stationary sources. (NO_x emissions from fuel combustion consist of approximately 90 percent NO and 10 percent NO_2 at the source.)

Lead

Airborne lead emissions are principally associated with industrial sources. Lead in gasoline has been banned under the CAA and would not be emitted from any vehicles under the Proposed Project.

Respirable Particulate Matter—PM_{10} AND $PM_{2.5}$

Particulate Matter (PM) is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include: the condensed and reacted forms of naturally occurring VOCs; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption (accumulation of gases, liquids, or solutes on the surface of a solid or liquid) of other pollutants, often toxic, and some likely carcinogenic compounds.

PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$) and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}, which includes $PM_{2.5}$). $PM_{2.5}$ could reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. $PM_{2.5}$ is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from a source) or from precursor gases reacting in the atmosphere to form secondary PM.

Sulfur Dioxide

Sulfur Dioxide (SO_2) emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). SO_2 is also of concern as a precursor to $PM_{2.5}$ and is regulated as a $PM_{2.5}$ precursor under the New Source Review permitting program for large sources. Due to the federal restrictions on the sulfur content in diesel fuel for on-road and non-road vehicles, no significant quantities are emitted from vehicular sources.

3.11.5.2.2 Pollutants for Construction Analysis

In general, much of the heavy equipment used in construction is powered by diesel engines that have the potential to produce relatively high levels of nitrogen oxides (NO_x) and PM emissions. Fugitive dust generated by construction activities is also a source of PM emissions and gasoline engines produce relatively high levels of CO. Since USEPA mandates the use of ULSD[1] fuel for all highway and nonroad diesel engines and New York City Local Law 77 mandates the use of ULSD fuel for nonroad equipment used on City-sponsored construction, sulfur oxides (SO_x) emitted from construction activities would be negligible.[2] Therefore, the pollutants analyzed for the construction period were NO_2, the component of NO_x that is a regulated pollutant, along with PM_{10}, $PM_{2.5}$, and CO.

NO_2, CO, $PM_{2.5}$, and PM_{10} emissions from on-site construction equipment were evaluated. CO and PM_{10}/$PM_{2.5}$ emissions from on-road vehicles and PM_{10}/$PM_{2.5}$ emissions from fugitive-dust-generating activities were also evaluated.

3.11.5.2.3 NAAQS Attainment Status and State Implementation Plans

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by USEPA, the state is required to develop and implement a State Implementation Plan (SIP), which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA, followed by a plan for maintaining attainment status once the area is in attainment.

In 2002, USEPA re-designated New York City as in attainment for CO. Under the resulting maintenance plans, New York is committed to implementing site-specific control measures throughout the City to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period. The second CO maintenance plan for the region was approved by USEPA on May 30, 2014.

Manhattan had been designated as a moderate NAA for PM_{10}. USEPA clarified on July 29, 2015 that the designation only applied to the revoked annual standard.

The five New York City counties and Nassau, Suffolk, Rockland, Westchester, and Orange Counties had been designated as a $PM_{2.5}$ NAA (New York Portion of the New York–Northern New Jersey–Long Island, NY–NJ–CT NAA) since 2004 under the CAA due to exceedance of the 1997 annual average standard, and

[1] USEPA required a major reduction in the sulfur content of diesel fuel intended for use in locomotive, marine, and nonroad engines and equipment, including construction equipment. As of 2015, the diesel fuel produced by all large refiners, small refiners, and importers must be ULSD fuel, with sulfur levels in nonroad diesel fuel limited to a maximum of 15 parts per million.

[2] New York City Administrative Code § 24-163.3, adopted December 22, 2003, also known as Local Law 77, requires that any diesel-powered nonroad engine with a power output of 50 hp or greater shall be powered by ULSD, and utilize the Best Available Technology (BAT) for reducing the emission of pollutants, primarily PM and secondarily NO_x. This requirement applies to all City-owned nonroad diesel vehicles and engines and any privately owned diesel vehicles and engines used on construction of proposed actions funded by the City.

were also nonattainment with the 2006 24-hour $PM_{2.5}$ NAAQS since November 2009. The area was redesignated as in attainment for that standard effective April 18, 2014 and is now under a maintenance plan. USEPA lowered the annual average primary standard to 12 $\mu g/m^3$ effective March 2013. USEPA designated the area as in attainment for the 12 $\mu g/m^3$ NAAQS effective April 15, 2015.

USEPA has revised the $PM_{2.5}$ standard. $PM_{2.5}$ attainment designations under the new standard are expected to be effective by May 2026. For areas designated as non-attainment, $PM_{2.5}$ SIPs would be due by December 2027 and would be designed to meet the $PM_{2.5}$ standard by 2032, although this may be extended in some cases.

Effective June 15, 2004, USEPA designated Nassau, Rockland, Suffolk, Westchester, and the five New York City counties (NY portion of the New York–Northern New Jersey–Long Island, NY-NJ-CT, NAA) as a moderate non-attainment area for the 1997 8-hour average ozone standard. In March 2008, USEPA strengthened the 8-hour ozone standards, but certain requirements remain in areas that were either nonattainment or maintenance areas for the 1997 ozone standard (‘anti-backsliding’). USEPA designated the same NAA as a marginal NAA for the 2008 ozone NAAQS, effective July 20, 2012, with subsequent reclassifications to “moderate” and “serious” nonattainment since compliance with the NAAQS was not achieved by the required attainment dates. On November 29, 2021, the New York Department of Environmental Conservation (NYSDEC) presented a demonstration that the New York Metro Area (NYMA) did not meet the July 20, 2021 attainment deadline, and it therefore requested that USEPA reclassify the NYMA as “severe” nonattainment. USEPA reclassified the NYMA from “serious” to “severe” NAA, effective November 7, 2022, which imposed a new attainment deadline of July 20, 2027 (based on 2018–2020 monitored data). Separately, on April 30, 2018, USEPA designated the same area as a moderate NAA for the revised 2015 ozone standard.

New York City is currently in attainment of the annual-average NO_2 standard. USEPA has designated the entire state of New York as “unclassifiable/attainment” of the 1-hour NO_2 standard effective February 29, 2012.

USEPA has established a 1-hour SO_2 standard, replacing the former 24-hour and annual standards, effective August 23, 2010. USEPA has designated the entire State of New York as in attainment for this standard, with the exception of a portion of St. Lawrence County as “nonattainment.”

3.11.5.2.4 Determining the Significance of Air Quality Impacts

The State Environmental Quality Review Act (SEQRA) regulations and *CEQR Technical Manual* state that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected. 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 concentrations defined by the NAAQS (see **Table 3.11.5-1**) would be deemed to have a potential significant adverse impact.

CO *de minimis* Criteria

New York City has developed *de minimis* criteria to assess the significance of the increase in CO concentrations that would result from the impact of proposed projects or actions on mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant environmental impact. Significant increases of CO concentrations in New York City are defined as: (1) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No Action 8-hour concentration is equal to or between 8 and 9 ppm; or (2) an increase of more than half the difference between baseline (i.e., No Action) concentrations and the 8-hour standard, when No Action concentrations are below 8 ppm.

$PM_{2.5}$ *de minimis* Criteria

In addition, New York City uses *de minimis* criteria to determine the potential for significant adverse $PM_{2.5}$ impacts under CEQR are as follows:

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

Actions under CEQR predicted to increase $PM_{2.5}$ concentrations by more than the above *de minimis* criteria will be considered to have a potential significant adverse impact.

3.11.5.2.5 Methodology for Predicting Pollutant Concentrations

Analysis Period

Because the level of construction activities would vary over the construction period, a reasonable worst-case analysis period was selected based on the estimated monthly construction work schedule, equipment to be employed and their usage factors, and equipment emission rates. The periods of highest emissions nearest to sensitive receptor locations are expected to be the periods of greatest effects. Construction-related emissions were calculated throughout the duration of construction on a peak day and a rolling annual basis for $PM_{2.5}$. $PM_{2.5}$ was selected for determining the worst-case periods for all pollutants analyzed because the ratio of predicted $PM_{2.5}$ incremental concentrations is anticipated to be higher than for other pollutants, based on previous analyses of construction air emissions. Therefore, estimates of $PM_{2.5}$ emissions throughout construction were used to determine the reasonable worst-case scenario for all pollutants. Generally, emission patterns of PM_{10} and NO_2 would follow $PM_{2.5}$ emissions, since they are correlated with horsepower (hp) for diesel engines. CO emissions may have a somewhat different pattern but would also be anticipated to be highest during periods when the most activity would occur.

Based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$ and the proximity of the construction activities to sensitive uses in the area, July 2027 (activities are anticipated to occur simultaneously within Reaches 1, 2, 4, 5, and 6) and the 12-month period from November 2026 to October 2027 (activities are anticipated to occur simultaneously within Reaches 1, 2, 4, 5, and 6) were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. Dispersion of the relevant air pollutants from the Project Area during these periods was analyzed.

The potential for significant adverse effects was determined by comparing modeled NO_2, CO, and PM_{10} concentrations to the NAAQS, and modeled $PM_{2.5}$ and CO increments to applicable *de minimis* thresholds in the context of magnitude, duration, and locations and the size of the area affected by the air emissions sources. Other less intensive construction periods are discussed qualitatively, based on the reasonable worst-case analysis period results.

Nonroad Construction Equipment

Nonroad construction equipment includes equipment operating on-site, such as cranes, loaders, and excavators. Emission rates for NO_x, CO, PM_{10}, and $PM_{2.5}$ from nonroad construction equipment engines were developed using the NONROAD emission module included in the USEPA Motor Vehicle Emission Simulator (MOVES4) emission model. For the Proposed Project, the emission factor calculations took into account any emissions reduction measures that would be required, as described below, under "Emissions Reduction Measures."

On-Road Vehicles

On-road vehicles include construction worker vehicles and construction trucks arriving to and from the construction sites, as well as operating on-site. Since emissions from nonroad construction equipment and on-road vehicles may contribute to concentration increments concurrently, both nonroad construction equipment and on-road vehicles were modeled together to address all local Proposed Project-related construction emissions.

Vehicular engine emission factors were computed using the USEPA Motor Vehicle Emission Simulator MOVES4 emission model. The inputs and use of MOVES incorporate the most current resource available from NYSDEC.[3]

[3] NYSDEC, Redesignation Request and Maintenance Plan for the 1997 Annual and 2006 24-Hour $PM_{2.5}$ NAAQS Appendix D – New York State On-Road Motor Vehicle Emission Budget MOVES Technical Support Documentation, June 2013.

Fugitive Dust Generating Activities

In addition to engine emissions, fugitive dust emissions are generated from operations (e.g., transferring excavated materials into dump trucks), vehicle travel on-site, and excavated soil stockpiles. Fugitive dust emissions from operations were calculated using USEPA procedures provided in AP-42 Table 13.2.3-1.[4] Road dust emissions from vehicle travel on-site were calculated using equations from USEPA's AP-42, Section 13.2.1 for paved roads, and dust emissions from stockpiles were calculated using equations from USEPA's AP-42, Section 13.2.4.

As discussed below under "Emissions Reduction Measures," the construction of the Proposed Project is required to follow the New York City Department of Environmental Protection (DEP) *Construction Dust Rules* regarding construction-related dust emissions.[5] Therefore, a 50 percent reduction in particulate emissions from fugitive dust was assumed in the calculations to account for required dust control measures that would be employed during construction, such as wet suppression.

Emissions Reduction Measures

There are a number of federal, state and City laws aimed at reducing pollutant emissions during construction that include the following:

- *Dust Control.* To minimize fugitive dust emissions from construction activities, a fugitive dust control plan including a robust watering program would be implemented. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the project site; and water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with a chemical suppressing agent, or covered. All measures required by the DEP's *Construction Dust Rules* regulating construction-related dust emissions would be implemented.
- *Idling Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time would be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or are otherwise required for the proper operation of the engine.

Construction of the Proposed Project is subject to New York City Local Law 77, which requires the use of ULSD fuel and BAT for equipment at the time of construction.

- *Clean Fuel*. ULSD fuel would be used exclusively for all diesel engines throughout the Project Area.
- *Best Available Technologies*. All diesel-powered non-road construction equipment would meet the USEPA's Tier 4 emissions standards. In addition, controlled truck fleets (i.e., truck fleets under long-term contract with the Proposed Project) including but not limited to concrete mixing and pumping trucks would utilize BAT technology for reducing diesel particulate matter (DPM) emissions. Diesel particulate filters (DPFs) have been identified as being the tailpipe technology currently proven to

[4] USEPA Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: *Stationary Point and Area Sources*, Chapter 13: Miscellaneous Sources.

[5] http://www.nyc.gov/html/dep/html/air/construction_dust_debris.shtml

have the highest reduction capability. Construction contracts would specify the Tier 4 emission standard requirement and that DPFs be installed either by the original equipment manufacturer or retrofitted. Retrofitted DPFs must be verified by USEPA or the California Air Resources Board. Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.

The analysis accounted for the above emissions reduction measures that would be implemented during construction of the Proposed Project.

Dispersion Model

Potential impacts from the Proposed Project’s nonroad construction equipment, on-road vehicles, and fugitive dust generating activities were evaluated using the USEPA/AMS AERMOD model, a refined dispersion model. AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain and includes updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and handling of terrain interactions.

Source Simulation

For short-term model scenarios (predicting concentration averages for periods of 24 hours or less), nonroad construction sources, such as idling trucks, which would likely remain at a single location on a given day, were simulated as point sources in the model. Other nonroad construction sources, such as excavators or loaders, which would move around the site on any given day, as well as on-road vehicles, were simulated as area sources in the model. For short-term averaging periods of 8 hours or less, it was assumed that all engines would be active simultaneously. For the annual analysis, because all sources are anticipated to move around the site throughout the year, these sources were simulated as area sources in the model.

Meteorological Data

The meteorological data set consists of five consecutive years of meteorological data: surface data collected at LaGuardia Airport (2017–2021), and concurrent upper air data collected at Brookhaven, New York. The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevation over the five-year period. These data sets were processed using the USEPA AERMET program to develop data in a format which can be readily processed by the AERMOD model. The land uses around the site where meteorological surface data is available was classified using categories defined in digital United States Geological Survey (USGS) maps to determine surface parameters used by the AERMET program.

Receptor Locations

Discrete receptors were placed at publicly accessible locations, at residential and other sensitive uses at both ground-level and elevated locations (e.g., residential windows and balconies), at publicly accessible open spaces, including Battery Park, and at any adjacent sidewalk locations. In addition, based on the results of the concentrations predicted at these discrete receptor locations, a ground-level receptor grid was placed to predict the annual average $PM_{2.5}$ concentration increments on a neighborhood scale., . This receptor grid extending 1 kilometer was placed centering on the discrete receptor location with the maximum modeled ground-level concentration. The annual increase in concentration on a neighborhood scale was represented by the average over an area of approximately 1 square kilometer for this neighborhood-scale analysis.

3.11.5.2.6 Existing Conditions

Table 3.11.5-2 shows the existing background levels that are based on concentrations monitored at the nearest NYSDEC ambient air monitoring stations. Data from 2017 to 2019 are proposed for use because of the uncertainties in the representativeness of background concentrations in 2020 and 2021 due to effects of COVID-19, consistent with New York City Department of Environmental Protection (DEP) guidance. To estimate the maximum expected total pollutant concentrations, the modeled impacts from the emission sources were added to an ambient background value that accounts for existing pollutant concentrations from other sources. As shown in **Table 3.11.5-2**, the recently monitored levels did not exceed the NAAQS.

Table 3.11.5-2
Maximum Background Pollutant Concentrations

Pollutant	Average Period	Location	Concentration	NAAQS
$PM_{2.5}$	**24-hour**	**JHS 45**	**18.3 μg/m^3**	**35 μg/m^3**
	Annual	**JHS 45**	**7.6 μg/m^3**	**9 μg/m^3**
PM_{10}	**24-hour**	**IS 52**	**36 μg/m^3**	**150 μg/m^3**
NO_2	**Annual**	**IS 52**	**32.8 μg/m^3**	**100 μg/m^3**
CO	1-hour	CCNY	2.52 ppm	35 ppm
	8-hour	CCNY	1.2 ppm	9 ppm
Source: New York State Air Quality Report Ambient Air Monitoring System, NYSDEC, 2017–2019.				

3.11.5.2.7 No Action Conditions

In the No Action condition, it is assumed that there would be no flood barrier system installed in the Project Area and air quality is anticipated to be similar to that described for existing conditions. While there are three projects within the Study Area that are expected to be completed by 2030 as discussed in Chapter 3.1, "Land Use, Zoning, and Public Policy,s" no significant changes in land use are anticipated in the area surrounding the Project Area. Since air quality regulations mandated by the Clean Air Act are expected to maintain or improve air quality in the region, it can be expected that air quality conditions in the future without the Proposed Project will be similar to or better than those that presently exist.

3.11.5.2.8 Proposed Action Conditions

Maximum predicted concentrations during the representative worst-case construction periods for the Proposed Project are presented in **Table 3.11.5-3**. To estimate the maximum total pollutant concentrations, the modeled concentrations from the Proposed Project were added to a background value that accounts for existing pollutant concentrations from other nearby sources. As shown in **Table 3.11.5-3**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS. In addition, the maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable *CEQR*

Technical Manual de minimis thresholds in the 24-hour and annual averaging periods**.** Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst-case periods; therefore, the resulting concentrations from the non-peak periods are expected to be less than the concentrations presented in **Table 3.11.5-3**. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources**.**

Table 3.11.5-3
Maximum Pollutant Concentrations – Proposed Project

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	De minimis	NAAQS
NO_2	Annual	μg/m³	38.0	32.8	70.8	-	100
CO	1-hour	ppm	7.1	2.52	9.6	-	35
	8-hour	ppm	2.8	1.2	4.0	-	9
PM_{10}	24-hour	μg/m³	6.0	36	42.0	-	150
$PM_{2.5}$	24-hour	μg/m³	5.5	18.3	23.8	8.4[2]	35
	Annual—Local	μg/m³	0.298	7.6	7.9	0.3	9
	Annual—Neighborhood	μg/m³	0.02	7.6	7.6	0.1	

Notes: N/A—Not Applicable
[1] The background levels are based on the most representative concentrations monitored at NYSDEC ambient air monitoring stations (see Table 16-4).
[2] $PM_{2.5}$ *de minimis* criterion—24-hour average, not to exceed more than half the difference between the background concentration and the 24-hour standard of 35 μg/m³.

3.11.5.2.9 Construction Air Quality Analysis Conclusion

Measures would be taken to reduce pollutant emissions during construction of the Proposed Project in accordance with all applicable laws, regulations, and building codes. These include the use of ULSD fuel, dust suppression measures, idling restrictions, diesel equipment reduction, and use of best available technology (i.e., equipment meeting the USEPA's Tier 4 emission standard). With the implementation of these emission reduction measures, the dispersion modeling analysis of construction-related air emissions for both non-road and on-road sources determined that $PM_{2.5}$, PM_{10}, annual average NO_2, and CO concentrations would be below their corresponding *de minimis* thresholds or NAAQS, respectively. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources**.**