



10

Air Quality

Ambient air quality, or the quality of the surrounding air, may be affected by air pollutants produced by motor vehicles, referred to as "mobile sources"; by fixed facilities, referred to as "stationary sources"; or by a combination of both. Under CEQR, an air quality assessment determines both a proposed project's effects on ambient air quality as well as the effects of ambient air quality on the project.

Introduction

The Proposed Development would contain approximately 2,992,161 gsf of mixed-use development, including a hotel, office, and public space. The building would be approximately 1,646 feet tall contain approximately 2,992,161 gross square feet (gsf) (2,246,515 zsf) of mixed-use development space, including a hotel, office, and public space (the Proposed Project). The Development Site would contain approximately 2,108,820 gsf¹ of office space; an approximately 452,950-gsf, 500-room hotel; public space; and retail space on the cellar, ground, and second floors of the proposed building. The Proposed Project would also include significant public realm improvements, as well as subway and mass transit improvements to enhance circulation and reduce congestion at Grand Central Terminal (GCT, or the Terminal) and the Grand Central – 42nd Street subway station.

¹ Development may also occur under an All Office Scenario. Under this scenario, the overall building square footage and building massing would be the same as under the Proposed Project but would be comprised of approximately 2,561,770 gsf of office space, retail, and no hotel.

Potential air quality impacts of the Proposed Action include potential impacts from the project-generated traffic and from the Proposed Project's heating, ventilation and air conditioning (HVAC) systems. Consistent with the *CEQR Technical Manual*, the air quality analysis also includes potential impacts on the Proposed Project from nearby light industrial sources and "large" and "major" sources (i.e., facilities with State and Title V air permits). The *CEQR Technical Manual* requires analysis of impacts of elevated, atypical roadway mobile sources of air pollutions, such as a highway or a bridge if a project places sensitive land use, operable windows or balconies, within 200 feet of it.

The key issues addressed in the air quality analysis are the potential for:

- › Emissions from the project-generated vehicular travel to significantly impact air quality near affected intersections;
- › Emissions from the HVAC systems of the Proposed Project to significantly impact existing and proposed land uses;
- › Emissions from the traffic ~~from of~~ an atypical roadway source to affect ~~public open space; the Proposed Project;~~
- › Emissions from the large/major sources to impact the Proposed Project;
- › Emissions from light industrial and manufacturing facilities to impact the Proposed Project.

The Proposed Project would not introduce any parking, and therefore, an assessment of emissions from such a facility is not warranted.

Principal Conclusions

The air quality analysis, as summarized below, found that the Proposed Actions would not cause significant adverse air quality impacts on the surrounding sensitive receptors nor would nearby emission sources significantly impact the Proposed Project.

The number of incremental trips generated by the Proposed Project would be lower than the screening thresholds for carbon monoxide (CO) and particulate matter (PM) (both PM_{2.5} and PM₁₀) identified in the *CEQR Technical Manual*. Therefore, traffic emissions from the Proposed Project would not result in a significant adverse impact on air quality.

The elevated Park Avenue Viaduct would be located within a few feet from the proposed public open space that would surround the proposed building. However, emissions from mobile sources on the Park Avenue Viaduct would be small and would not have a potential to adversely affect air quality.

The proposed building would use steam for its HVAC and hot water needs. This commitment would be included into an (E) ~~designation, Restrictive Declaration, or other mechanism~~ Designation (E-648) for the Proposed Project. With this commitment, the Proposed Project would not incur any local air quality impacts. There are no large sources within a 1,000-foot radius of the Development Site that would impact the Proposed Project.

There is one light industrial source within a 400-foot radius of the Proposed Project. This source would not emit carcinogenic air pollutants. The analysis of non-carcinogenic non-criteria pollutants resulted in concentrations below guideline levels and demonstrated the

hazard index below significance thresholds. Therefore, no adverse air quality impacts on the Proposed Project are expected from the nearby industrial sources.

Air Quality Standards

In accordance with the requirements of the Clean Air Act (CAA), as amended 1990, the U.S. Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The NAAQS are presented in **Table 10-1**.

Table 10-1 National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Level	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/m ³ ⁽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 concentration, averaged over 3 years
Particulate Matter (PM_{2.5})	Primary	1 year	12.0 µg/m ³	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
	Primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
Particulate Matter (PM₁₀)	Primary and secondary	24 hours	150 µg/m ³	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

Notes:

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 additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current 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 a USEPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: EPA NAAQS Table, <https://www.epa.gov/criteria-air-pollutants/naaqs-table>, accessed January 2021

The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of sensitive populations such as sick, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for six principal pollutants, which are called "criteria" pollutants. These six pollutants are ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns in diameter (PM₁₀) and less than 2.5 microns in diameter (PM_{2.5}), and lead (Pb). These standards are reviewed from time to time and may be revised. The State of New York has adopted similar standards as those set by the EPA, with the exception of sulfur dioxide, particulates, fluorides, and hydrogen sulfide.

In addition to criteria pollutants, there are other pollutants, air toxics, not included by the EPA in the list of principal pollutants. Non-criteria pollutants are emitted by a wide range of man-made and naturally occurring sources. These pollutants are sometimes referred to as hazardous air pollutants (HAP) and when emitted from mobile sources, as Mobile Source Air Toxics (MSATs). No federal ambient air quality standards have been promulgated for toxic air pollutants. However, EPA and New York State Department of Environmental Conservation (NYSDEC) have issued guidelines that establish acceptable ambient levels for these pollutants based on human exposure.

Regulatory Context

The 1990 CAA with Amendments resulted in states being divided into attainment and non-attainment areas, with classifications based upon the severity of their air quality problems. Air quality control regions are classified and divided into one of four categories: attainment, unclassified, maintenance or non-attainment depending upon air quality data and ambient concentrations of pollutants. Attainment areas are regions where ambient concentrations of a pollutant are below the respective NAAQS; non-attainment areas are those where concentrations exceed the NAAQS. Maintenance areas are former non-attainment that achieved attainment. An unclassified area is a region where data are insufficient to make a determination and is generally considered as an attainment area for administrative purposes. A single area can be in attainment of the standards for some pollutants while being in non-attainment for others.

New York County is designated as a serious non-attainment area for the 2008 8-hour ozone standard and a moderate non-attainment area for the 2015 8-hour ozone standard. Both designations are part of a larger New York-Northern New Jersey-Long Island, NY-NJ-CT non-attainment areas. New York County has been a PM₁₀ non-attainment area since 1994. The county has been designated as a maintenance area for CO as of May 20, 2002 and for the 2006 PM_{2.5} standard as of April 18, 2014. New York County is in attainment for all other criteria pollutants (Pb, NO₂, and SO₂).

Pollutants of Concern

Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the respiratory effects of the pollutants and their potential toxic effects, as described below.

Carbon monoxide (CO) is a colorless and odorless gas that is a product of incomplete combustion. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been

shown to aggravate the symptoms of cardiovascular disease. It can cause headaches, nausea, and at sustained high concentration levels, can lead to coma and death.

Particulate matter is made up of small solid particles and liquid droplets. PM₁₀ refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and PM_{2.5} refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particulates smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

Nitrogen oxides (NO_x), the most significant of which are nitric oxide (NO) and nitrogen dioxide (NO₂), can occur when combustion temperatures are extremely high (such as in engines) and atmosphere nitrogen gas combines with oxygen gas. NO is relatively harmless to humans but quickly converts to NO₂. Nitrogen dioxide has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen oxides, along with VOCs, are also precursors to ozone formation.

Sulfur Dioxide (SO₂) emissions are the main components of the “oxides of sulfur,” a group of highly reactive gases from fossil fuel combustion at power plants, other industrial facilities, industrial processes, and burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. High concentrations of SO₂ will lead to formation of other sulfur oxides. By reducing the SO₂ emissions, other forms of sulfur oxides are also expected to decrease. When oxides of sulfur react with other compounds in the atmosphere, small particles that can affect the lungs can be formed. This can lead to respiratory disease and aggravate existing heart disease.

Non-criteria pollutants may be of concern in addition to the criteria pollutants discussed above. Non-criteria pollutants are emitted by a wide range of man-made and naturally occurring sources. These pollutants are sometimes referred to as hazardous air pollutants (HAP) and when emitted from mobile sources, as Mobile Source Air Toxics (MSATs). Emissions of non-criteria pollutants from industrial sources are regulated by the United States Environmental Protection Agency (EPA).

Federal ambient air quality standards do not exist for non-criteria pollutants; however, NYSDEC has issued standards for certain non-criteria compounds, including beryllium, gaseous fluorides, and hydrogen sulfide. NYSDEC has also developed guidance document DAR-1 (August 2016), which contains a compilation of annual and short term (1-hour) guideline concentration thresholds for these compounds. The NYSDEC’s DAR-1 guidance thresholds represent ambient levels that are considered safe for public exposure. EPA has also developed guidelines for assessing exposure to non-criteria pollutants. These exposure guidelines are used in health risk assessments to determine the potential effects to the public.

Impact Criteria

The State Environmental Quality Review Act (SEQRA) regulations and *2020 CEQR Technical Manual* indicate 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.² The predicted concentrations of pollutants of concern associated with a proposed project are compared with the NAAQS for criteria air pollutants or ambient guideline concentrations for non-criteria pollutants. Generally, if project-related concentrations are higher than the NAAQS, there's a potential for significant adverse air quality impacts from the project. In addition, the City's *de minimis* criteria are also used to determine significance of impacts for CO and PM_{2.5}.

PM_{2.5} De Minimis Criteria

New York City uses *de minimis* criteria to determine a project's potential to result in a significant adverse PM_{2.5} impact under CEQR. The *de minimis* criteria 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 which are predicted to be 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 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/m³ at a discrete receptor location (elevated or ground level).

Non-Criteria Pollutant Thresholds

Non-criteria, or toxic, air pollutants include a multitude of pollutants of variable toxicity. No federal ambient air quality standards have been promulgated for toxic air pollutants. However, NYSDEC has issued guideline non-criteria pollutant ambient air concentrations and acceptable risk management range to determine the potential effects to the public.

The NYSDEC DAR-1 guidance document presents guideline concentrations in micrograms per cubic meter (µg/m³) for the one-hour (short-term guideline concentration, SGC) and annual average (annual guideline concentration, AGC) periods for various air toxic compounds³.

The potential cancer risk associated with each carcinogenic air toxic, as well as the total cancer risk of the releases of all the carcinogenic toxic pollutants combined, can be estimated from the predicted concentrations of the carcinogenic pollutants. If the total incremental cancer risk of all the carcinogenic toxic pollutants combined is less than one-in-one million, the residual risk is deemed acceptable.

In order to evaluate residual risk of non-carcinogenic toxic air emissions, hazard index is calculated based on annual exposure limits. If the combined ratio of pollutant concentration

² CEQR Technical Manual, Chapter 1, section 222, November 2020; and State Environmental Quality Review Regulations, 6 NYCRR §617.7

³ NYSDEC DAR-1 - http://www.dec.ny.gov/docs/air_pdf/dar1.pdf.

divided by its annual exposure threshold for each of the toxic pollutants is found to be less than 2.0, according to DAR-1, the residual risk is deemed acceptable.

Background Concentrations

Background concentrations are ambient pollution levels associated with existing stationary, mobile, and other area emission sources, but not with the proposed development. NYSDEC maintains an air quality monitoring network and produces annual air quality reports that include monitoring data for NO₂, PM₁₀, PM_{2.5}, and SO₂. The latest three full years of monitoring data (2017 to 2019) from the representative monitoring stations were used to develop background concentrations for all pollutants (see **Table 10-2**). CO and PM background concentrations were obtained from monitoring stations in Manhattan: CO was collected at the City College of New York, 160 Convent Avenue; PM₁₀ was collected at the Yung Wing Elementary School, 40 Division Street; and PM_{2.5} was collected from the station at PS19, 185 First Avenue. 1-hour and annual NO₂ and 1-hour SO₂ background concentrations were developed from monitoring data collected from the Queens College monitoring station at 65-30 Kissena Boulevard. These concentrations were estimated using the form of the NAAQS (see **Table 10-1**, column Form for information).

Table 10-2 Background Concentrations

Pollutant	Averaging Time	Monitoring Location	Background Concentration
Carbon Monoxide	1-Hour	160 Convent Ave	2.5 ppm
	8-Hour		1.2 ppm
Nitrogen Dioxide	1-Hour	Queens College	104.0 µg/m ³
	Annual		27.1 µg/m ³
Particulate Matter (PM ₁₀)	24-Hour	Division St	39 µg/m ³
Particulate Matter (PM _{2.5})	24-Hour	PS 19	23.3 µg/m ³
	Annual		9.4 µg/m ³
Sulfur Dioxide	1-Hour	Queens College	14.6 µg/m ³

Source: VHB, Inc. November 2020

Analyses Approach

Mobile Sources

Mobile Source Screening Analysis

A screening analysis of mobile source emissions of CO and PM on ambient pollutant levels in the study area was conducted per *2020 CEQR Technical Manual* guidance. For the project's study area, as described in Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*, the threshold for conducting an analysis of CO emissions corresponds to 140 project-generated vehicles at a given intersection in the peak hour. The need for conducting an analysis of PM emissions is based on road type and the number of project-generated peak hour heavy-duty diesel vehicles (or its equivalency in vehicular PM_{2.5} emissions) as

determined using the worksheet provided on page 17-12 of the *CEQR Technical Manual* (Autos are assumed to be LDGT1 and trucks, such as vans and box trucks were conservatively assumed to be HDDV3 in the worksheet).

The mobile source screening analysis at the intersections affected by the Proposed Project was conducted within the network considered by the traffic analysis.

Atypical Source of Vehicular Pollutants

The elevated Park Avenue Viaduct would be located within a few feet of the proposed outdoor public open space that would surround the proposed building. The west elevation of the proposed building would be one floor above the viaduct. *CEQR Technical Manual* guidance requires the analysis of potential impacts of mobile source emissions from an atypical (e.g., not at-grade) roadway with a total of more than two lanes within 200 feet of proposed receptors. However, the elevated Park Avenue Viaduct only has one moving lane, which would be separated from the public open space by a private service (parking/ramp) lane along the frontage of the proposed building. Based on *CEQR Technical Manual* guidance, since the elevated Park Avenue Viaduct does not contain more than two moving lanes, emissions from this atypical roadway do not have the potential for significant adverse air quality impacts.

Stationary Sources

HVAC Analysis

The Proposed Project would use steam for the heating and ventilation and hot water of the building and therefore would not use fossil fuels for HVAC or hot water systems. As such, no local air quality impacts from the HVAC systems are anticipated.

The text for the (E) ~~designation, Restrictive Declaration, or other mechanism~~ Designation (E-648) would be as follows:

Block 1280, Lot 30 – Proposed Development Site

Any new commercial and/or hotel development on the above-referenced property must utilize only steam for heating and hot water systems to avoid any potential significant adverse air quality impact.

Industrial Source Analysis

As described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical Manual*, an air quality assessment is required to evaluate the potential impacts of air toxics emissions from ventilation exhaust systems of manufacturing or processing facilities within a 400-foot radius of a project site when a project would result in new sensitive uses (particularly residences, schools, hospitals, or parks). If any sources are identified, a screening analysis is performed based on Table 17-3 in Chapter 17 of the *CEQR Technical Manual*. The screening table provides the maximum 1-hour, 8-hour, 24-hour and annual average modeled values based on a generic emission rate of 1 gram per second of a pollutant from a 20-foot tall point source for the distances between 30 feet and 400 feet from the receptor of same height. Potential impacts predicted from the industrial source of concern based on the

screen table are compared with the short-term and annual guideline concentrations recommended in NYSDEC's DAR-1 AGC/SGC tables and with the carcinogenic and non-carcinogenic health risk thresholds from the same NYCDEC guidance.

Large or Major Source Analysis

As described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical Manual*, an air quality assessment is required to evaluate the potential impacts of emissions from a "large" or "major" emission source within a 1,000-foot radius of a project site. "Major" sources are identified as those sources located at Title V facilities that require Prevention of Significant Deterioration permits. "Large" sources are identified as sources located at facilities that require an Air State Facility (ASF) permit. A detailed analysis is usually performed for such sources, if any are identified, to determine any potential for significant adverse air quality impact on a proposed project.

Review of available information identified one large source, a Generator Plant at 330 Madison Avenue with ASF permits located within a 1,000-foot radius of the Development Site. The Generator Plant ASF permit states that this plant participates in the Coordinated Demand Reduction Program and will be used in demand response mode. According to the annual monitoring report to NYSDEC, this generator was used for less than a 100 hours per year in the past five years (2014-2018) and for less than 30 hours annually in the past four years. The EPA guidance⁴ on treatment of intermittent sources allows for sources with infrequent and unpredictable hours of operation to be excluded from compliance demonstration. Based on this guidance and the Generator Plant's purpose and historical usage, it was excluded from the large source analysis. As such, no air quality impacts from emissions from "large" or "major" sources on the Proposed Project are anticipated.

Existing Conditions

Existing conditions in the area are characterized by the monitored concentrations representative of the project area. The same monitoring stations used to develop background concentrations were used to represent the existing conditions in the project area for the same pollutants. Concentrations for other pollutants were collected at the available monitoring locations in the City. Carbon monoxide and ozone concentrations were obtained from the City College of New York at 160 Convent Avenue. Lead concentrations are monitored only at one location in New York City, in the Bronx at IS 52 at 681 Kelly Street. Existing concentrations are presented in **Table 10-3** the form comparable to the NAAQS and in the same units as the standards. Concentrations of NO₂ and SO₂ are the same as in **Table 10-2** only in different units.

⁴ EPA, OAQPS, Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ NAAQS, March 2011, https://www.epa.gov/sites/production/files/2015-07/documents/appwno2_2.pdf

Table 10-3 Existing Monitored Concentrations (2017-2019)

Pollutant	Averaging Time	Concentration	NAAQS
Carbon Monoxide	1-Hour	2.5 ppm	35 ppm
	8-Hour	1.2 ppm	9 ppm
Lead	3-month	0.004 µg/m ³	0.15 µg/m ³
Nitrogen Dioxide	1-Hour	55 ppb	100 ppb
	Annual	14.6 ppb	53 ppb
Ozone	8-Hour	0.071 ppm	0.07 ppm
Particulate Matter (PM₁₀)	24-Hour	39 µg/m ³	150 µg/m ³
Particulate Matter (PM_{2.5})	24-Hour	23.3 µg/m ³	35 µg/m ³
	Annual	9.4 µg/m ³	12 µg/m ³
Sulfur Dioxide	1-Hour	5.3 ppb	75 ppb

ppm – parts per million; ppb – parts per billion

Concentrations of all pollutants except ozone were below their respective NAAQS. Ozone concentrations slightly exceeded the 2015 8-hour standard which corresponds with the non-attainment status of the New York County where the project is proposed.

Assessment

Mobile Source Analysis

No-Action Condition

Without the Proposed Actions, the Development Site would be redeveloped with a new commercial building that would rise 69 stories and approximately 1,118 feet tall. The development would consist of an approximately 1,883,743 gsf building, containing 1,682,336 gsf of office space, approximately 18,300 of retail, and an approximately 5,896-sf enclosed publicly accessible space and 10,220 gsf of MTA circulation space on the ground floor. In the No-Action condition, there would be no more than 58 trips generated at any intersection. The truck trips generated by the No-Action condition will be either van trips or box truck trips, trucks considered to be class 3 in the FHWA classification. No more than 26 of such trucks within a peak hour will be generated on any link (see [Chapter 9, Transportation](#)).

With-Action Condition

Traffic analysis estimated that no more than ~~94~~⁹³ trips would be generated by the Proposed Project (see [Chapter 9, Transportation](#)) at any intersection in any of the analyzed time periods, AM and PM peak hours or at midday. The projected trips (maximum of 93 in a peak hour) are lower than the CEQR CO threshold of 140 trips for Midtown Manhattan between 30th and 61st Streets. The traffic analysis projected no more than 9 truck trips within an hour under the With-Action condition. These trips, similarly to No-Action condition, are forecasted to be class 3 truck trips, made by vans or box trucks.

Assuming that the passenger cars are LDT1 and the trucks are HDDV3, the total number of equivalent trucks were lower than the CEQR threshold at the collector roads (Manhattan streets) or minor arterials (Manhattan avenues).

As such, the Proposed Actions would not have a potential for significant adverse air quality impacts from mobile sources.

Industrial Source Analysis

To assess potential air quality impacts on the Proposed Project from existing industrial sources that emit toxic air contaminants, an investigation of existing land uses within a 400-foot radius of the project block was conducted to identify potential sources and determine if there are active permits associated with those sources.

As a first step, land use maps were reviewed to identify surrounding land uses that could have New York City Department of Environmental Protection (NYCDEP) issued industrial permits (i.e., sites classified as Industrial/Manufacturing, Transportation/Utility, or Public Facilities/Institutions). **Table 10-4** lists these potential land uses.

Table 10-4 Industrial Sources within 400 Feet of the Project Block

Address	Block	Lot	Lot Owner Name ¹	DEP CATS
666 3rd Avenue	1297	33	National Blue Print Co.	PA034682

¹ Source: NYCDEP's Clean Air Tracking System (NYCDEP CATS). <https://a826-web01.nyc.gov/DEP.BoilerInformationExt/>

Permit PA34682 is for the National Blue Print company division, the full service reprographics company. *CEQR Technical Manual* industrial screening analysis was conducted to assess potential air quality impacts from ammonia emissions of this facility on the Proposed Project. The results of this analysis are presented in **Table 10-5**. Results indicate that contaminant concentrations would be below their respective short-term and annual guideline levels.

Table 10-5 Results of industrial Source Analysis

Chemical Name	CAS	Total Short-term Concentration (µg/m3)	SGC (µg/m3)	Total Annual Concentration (µg/m3)	AGC (µg/m3)
Ammonia	07664-41-7	62.29	2,400	0.74	100

Source: VHB, Inc. February 2020

Health risk is characterized using excess cancer risks per one million people for carcinogenic compounds and as hazard index for non-carcinogens. Ammonia used by National Blue Print is not a carcinogen and therefore, cancer risk from it was not accessed. The non-cancer health risk was estimated using procedures from the NYSDEC DAR-1 based on the annual concentration and AGC level. The results of the hazard index assessment are presented in **Table 10-6**.

Table 10-6 Hazard Index Assessment

Chemical Name	CAS	DAR-1 classification	Hazard Quotient
Ammonia	07664-41-7	Low toxicity	0.00737
Hazard Index			0.00737

Source: VHB, Inc. February 2020

The results of the analysis indicate the hazard index is much smaller than the threshold of 2 for non-carcinogenic pollutants. As a result, no adverse air quality impacts are anticipated, and no elevated health risks are expected from the industrial sources.