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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, usually 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.

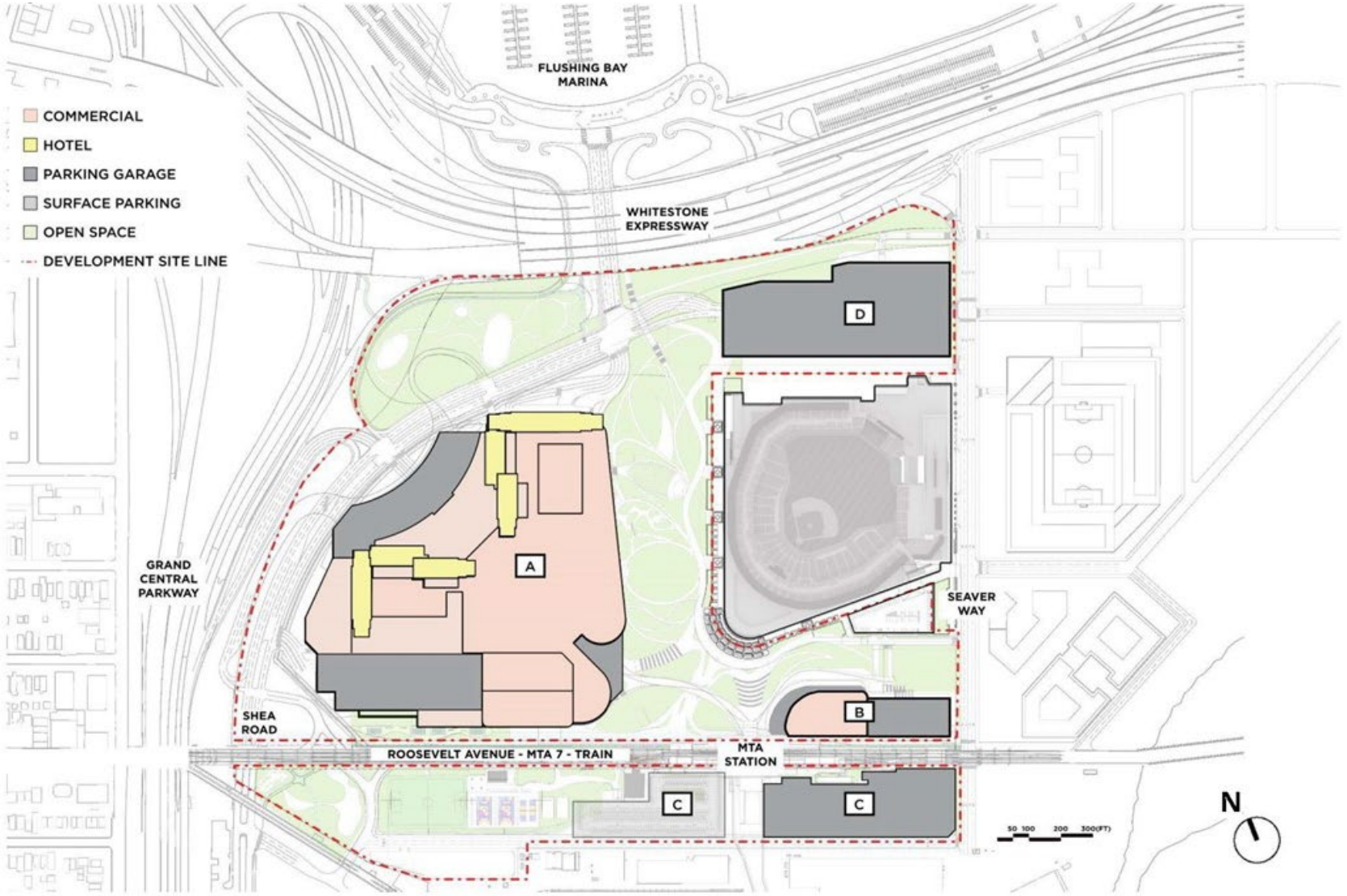
Introduction

Queens Future, LLC (the Applicant) proposes to redevelop approximately 78 acres of underutilized, asphalt surface parking areas owned by the City of New York (the Development Site) with a major mixed-use development (the Queens Future Project, or Proposed Project). The Development Site is located adjacent and accessory to Citi Field, west of Seaver Way. This section examines the potential for air quality impacts from the Proposed Project.

The Queens Future Project is anticipated to comprise up to 3.7 million square feet of new construction, with a music hall, hotel, gaming facility,[1] convention and meeting space, restaurant and retail space, and office and community facility space. The Proposed Project would also include public park space—at least 20 acres of the Development Site would be improved with landscaping and other amenities for public recreation—improved connections to the Mets-Willets Point NYCT No. 7 Train Subway Station, and other public realm improvements as well as structured parking facilities to accommodate up to 13,750 spaces. See **Table 1-2** and **Figure 1-1** and **1-4** in **Chapter 1, Project Description** and **Figure 15-1** below for the reasonable worst-case development scenario With-Action condition.

[1] The inclusion of a gaming facility is contingent upon receiving a gaming license from the New York State Gaming Commission.

Figure 15-1 Proposed Project Site Plan



Source: SHoP Architects
Note: Development Footprints for Illustrative Purposes Only

The air quality analysis was conducted under the *2021 CEQR Technical Manual* (*CEQR TM*) guidelines supported by the most current NYS DAR 10 and the U.S. Environmental Protection Agency (EPA) recommendations and regulations as applicable to the Proposed Project under CEQR. The air quality analysis includes an assessment of the potential impacts of emissions from mobile sources introduced by the Proposed Project, including the most active parking facility and the atypical source (Grand Central Parkway). The analysis also includes an assessment of the potential impacts of emissions from the stationary sources associated with the Proposed Project, including the heating, ventilation, and air conditioning (HVAC) and hot water systems of the With-Action development as well as from nearby industrial and manufacturing facilities and large and major sources in the area. The central utility plant introduced by the Proposed Project would use electric equipment for the HVAC and water heating purposes and would not have any local emissions.

Consistent with the *CEQR Technical Manual*, air quality analyses for a proposed project focus on these main areas of potential concern:

- Potential impacts from mobile source emissions introduced by a project;
- Emissions from a project's parking facilities;
- Emissions from atypical sources;
- Potential impacts from project's HVAC system; and
- Potential impacts on the proposed project from either manufacturing/processing facilities or large/major sources that are located near the project site.

Mobile Source Analysis: Since the publication of the Draft Environmental Impact Statement (DEIS), an additional analysis was undertaken of the Game Day Weekday scenario, which was noted in the DEIS as being required to be analyzed for the Final Environmental Impact Statement (FEIS). Additional revisions to the mobile source air quality analyses reflect changes in the transportation analyses. Where updates to the transportation analyses result in substantial changes in volumes and/or speeds, the mobile source air quality analyses have been updated accordingly. These changes are addressed in the analyses presented below and do not result in any changes to the conclusions of the air quality analyses.

Principal Conclusions

The air quality analysis addresses mobile sources, parking facilities, emissions from the project's HVAC and hot water systems, and from nearby industrial sources. As discussed below, no significant adverse air quality impacts are anticipated from the Proposed Project's mobile sources, parking facilities, stationary sources, or industrial source emissions.

Mobile Sources

The number of project generated trips would exceed the *CEQR Technical Manual* screening thresholds for carbon monoxide (CO) and particulate matter ($PM_{2.5}$) for all time periods considered in the traffic analysis including an alternative Saturday game start time. A mobile source screening assessment therefore indicated the need for additional analysis. Based on the screening results and in consultation with the NYC Department of Environmental Protection (NYCDEP), four intersections were selected for a microscale analysis. The selected intersections include three intersections at Shea Road that would be redesigned by the Proposed Project and the existing intersection of 114th Street and Roosevelt Avenue. The highest predicted 1 and 8-hour CO and 24-hour $PM_{2.5}$ concentrations

were below the respective National Ambient Air Quality Standards (NAAQS) and the City's *de minimis* value. The annual $PM_{2.5}$ concentrations were below the NAAQS. A grid analysis was conducted to determine the potential for mobile source impacts from the project under the annual $PM_{2.5}$ on a neighborhood scale. This analysis demonstrated compliance with the *de minimis* criterion. Since the CO and $PM_{2.5}$ mobile source impacts are below relevant criteria, no further analysis is required, and no significant adverse air quality impacts are anticipated from the Proposed Project's mobile sources.

Parking Facilities

The Proposed Project would introduce six parking facilities in Areas of Development A through D. These are five garages and one parking lot. The largest facilities are garages in Areas of Development A and D. The Area of Development D garage would be a 12-level, naturally ventilated parking facility. The garage in the Area of Development A would occupy the first two levels of the podium of the building. This garage would be mechanically ventilated, with exhaust via louvers at each parking level. The louvers would be located on the Shea Road side of the building on each side of the Porte Cochere. For the purpose of this analysis, it was conservatively assumed that all traffic to this garage enters and exits through the entrance on the first parking level located under the Porte Cochere. The air quality analyses evaluated the impacts from these two largest garages and found that with respect to both CO and $PM_{2.5}$, the results were below CEQR *de minimis* thresholds and NAAQS. Accordingly, no significant adverse air quality impacts are expected from the Project's parking facilities.

Stationary Sources

The Proposed Project sponsor will commit to install electric HVAC and hot water systems. Therefore, no local emissions and no adverse air quality impacts are anticipated from these systems.

Industrial Sources

No large or major facilities are located within 1,000 feet of the Development Site boundary. Therefore, no significant adverse air quality impacts are anticipated from such facilities.

Several commercial facilities/industrial sources were identified within a 400-foot radius from the Development Site boundary. Most of these facilities will be demolished before the Proposed Project opens in 2030. This demolition is part of Willets Point Phase 2, which plans to complete development in 2027. Three facilities will continue to operate until Phase 3 of the Willets Point development project is built in 2039. However, the Proposed Project's sensitive land uses within the Development Site are located further than 400 feet from these remaining industrial sources. As such, no significant adverse air quality impact on the Proposed Project is expected from industrial source emissions.

National Ambient Air Quality Standards

In accordance with the requirements of the Clean Air Act, as amended in 1990, the EPA has promulgated NAAQS (40 CFR part 50) for pollutants considered harmful to public health and the environment. The NAAQS are presented in **Table 15-1**.

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 elderly populations. Secondary standards set limits to protect public welfare, including protection against decreased visibility and protections against damage to animals, crops, vegetation, and buildings.

Table 15-1 National and New York Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	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 (NO_2)		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 (O_3)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	9.0 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
	PM_{10}	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 (SO_2)		primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	1 year	~~0.5 ppm~~10 ppb	annual mean, averaged over 3 years~~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 NO_2 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) O_3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O_3 standards.

4 The previous SO_2 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 non-attainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table Accessed ~~August~~ December 27~~19~~, 2024

The EPA Office of Air Quality Planning and Standards has established NAAQS for six principal pollutants, which are called "criteria" pollutants. These six pollutants are ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in aerodynamic diameter (PM_{10}) and less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and lead (Pb). Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air ($\mu g/m^3$).

These standards are reviewed periodically and may be revised. The State of New York has adopted similar standards as those set by the EPA.

Pollutants of Concern

Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the cardiovascular and respiratory effects of air 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. 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.

Regulatory Context

The 1990 Clean Air Act 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.

Queens County is designated as a severe 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 the larger New York-Northern New Jersey-Long Island, NY-NJ-CT non-attainment areas. The metro area was reclassified from serious to severe for 2008 8-hour ozone in November 2022, based on the failure to attain to the respective standard by July 2021.

Queens 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. On February 7, 2024, EPA strengthened the annual $PM_{2.5}$ standard, which became effective in April.[2] EPA generally designates areas for the new standard within two years after publication. Until the time when new designations are issued, designation for the previous 2012 annual $PM_{2.5}$ standard remains valid.

Queens County is in attainment for the 2012 $PM_{2.5}$ annual standard. Queens County is in attainment for all other criteria pollutants (PM_{10}, Pb, NO_2, and SO_2).

Impact Criteria

The predicted concentrations of pollutants of concern associated with a proposed project are compared with either the NAAQS for criteria air pollutants or ambient guideline concentrations for non-criteria pollutants. In general, if a project would cause the standards for any pollutant to be exceeded, it would likely result in a significant adverse air quality impact. In addition, the City's *de minimis* criteria are also used to determine the significance of impacts for CO and $PM_{2.5}$.

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 introduction of project-generated mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant adverse environmental impact. Significant increases of CO concentrations in New York City are defined as:

- An increase of 0.5 ppm or more in the maximum eight-hour average CO concentration at a location where the predicted No-Action eight-hour concentration is equal to or between 8.0 and 9.0 ppm; or
- An increase of more than half the difference between baseline (i.e., No-Action) concentrations and the eight-hour standard, when No-Action concentrations are below 8.0 ppm.

$PM_{2.5}$ 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 $\mu g/m^3$ 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 $\mu g/m^3$ at a discrete receptor location (elevated or ground level).

[2] https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm

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, the New York State Department of Environmental Conservation (NYSDEC) has established 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 ($\mu g/m^3$) for the one-hour, Short-Term Guideline Concentrations (SGC) and average Annual Guideline Concentrations (AGC) periods for various air toxic compounds.[3] The offsite concentration should not exceed the SGC at any time.

Background Concentrations

Background concentrations are ambient pollution levels associated with existing stationary, mobile, and other area emission sources, and not with the Proposed Project. All pollutant concentrations were collected at the Queens College monitoring station located at 65-30 Kissena Boulevard. These concentrations were estimated using the form of the NAAQS (see the "Form" column in **Figure 15-1** for more information).

Table 15-2 summarizes the background concentrations for each of the pollutants.

Potential CO and $PM_{2.5}$ impacts are also assessed on an incremental basis and compared with the respective CO or $PM_{2.5}$ *de minimis* criteria. Based on the background concentrations, the 8-hour CO *de minimis* is 3.9 ppm, 24-hour $PM_{2.5}$ *de minimis* is 8.7 $\mu g/m^3$.

Table 15-2 Background Concentrations

Pollutant	Averaging Time	Monitoring Location	Background Concentration
Carbon Monoxide	1-Hour	Queens College 2	1.7 ppm
	8-Hour	Queens College 2	1.2 ppm
Particulate Matter ($PM_{2.5}$)	24-Hour	Queens College 2	17.7 $\mu g/m^3$
	Annual	Queens College 2	6.8 $\mu g/m^3$

Source: EPA Monitor Values Report, Outdoor Air Quality Data, https://www.epa.gov/outdoor-air-quality-data/monitor-values-report

Methodology

Mobile Sources

Mobile Source Screening Analysis

A screening analysis of mobile source emissions of CO and PM in the study area was conducted pursuant to guidance in the *CEQR Technical Manual*. For a project's study area, as described in

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

Chapter 17, Sections 210 and 311 of the *CEQR Technical Manual*, the threshold for conducting an analysis of CO emissions corresponds to 170 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 (HDDVs) or its equivalent in vehicular $PM_{2.5}$ emissions as determined using the worksheet referenced on page 17-12 of the *2021 CEQR Technical Manual*.

The screening analysis for the Proposed Project was conducted for the scenarios considered in the traffic analysis:

- No Game Day (NGD) Weekday; AM, MD, and PM peak hours;
- NGD Weekend; Saturday PM peak hour;
- Game Day (GD) Weekday; PM peak hour; and
- GD Weekend; Saturday PM peak hour (4 PM or 7PM start game) and Sunday MD and PM peak hours
- Four signalized intersections with the highest incremental trips and levels of services (LOS) D or worse that did not pass the screening were selected for a detailed analysis. The first three intersections along Shea Road are located close to each other and were combined into one geometry. The fourth is an existing intersection at Roosevelt Avenue and 114 Street with the highest incremental trips and LOS F under almost all conditions listed above. The Saturday GD and NGD scenarios were the analyzed traffic scenarios as described below in the **Mobile Sources, Screening Analysis** section. Additionally, the weekday GD scenario was analyzed for the Shea Road intersections. As described in the **Screening Analysis** section below, Saturday GD and NGD scenarios and the weekday GD scenario for Shea Road were selected for analysis. Two alternative scenarios for the Saturday game start time were considered in the traffic analysis, start time around 7 PM and an alternative with the start around 4 PM. All these scenarios were selected for the detailed intersection modeling.[4][5]

Detailed Mobile Source Analysis

Vehicle Emissions

Vehicular CO and PM emission factors utilized in the dispersion modeling were computed using the EPA's Motor Vehicle Emission Simulator, MOVES3.1. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or compressed natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, engine soak time, and various other factors that influence emissions—such as an inspection maintenance program.

MOVES input files (i.e., fuel data, county-specific hourly temperature and relative humidity data, inspection/maintenance coverage, etc.) for Queens County were obtained from NYSDEC. Source type

[4] ~~Although the Saturday GD and NGD scenarios are representative and weekday results are not anticipated to be materially different from those of the Saturday analysis, additional analyses of the weekday will be conducted between the Draft and Final EIS.~~

[5] Additional analyses of the weekday traffic scenario were conducted as stated in the DEIS.~~As discussed in the DEIS, the weekday traffic scenario analysis was performed for the FEIS and is presented in the tables below.~~

age distribution data were obtained from NYSDEC and processed using the EPA's *Age Distribution Projection Tool for MOVES3*.[6]

Traffic Data

Traffic information from **Chapter 14, Transportation**, speeds developed for this analysis on the basis of delays calculated in the traffic models, SYNCRO for the intersections, and VISSIM for the highway and ramps were used to estimate emissions and to develop geometries for the dispersion modeling.

CO Emissions

CO emissions were estimated for the month of January, which is the highest month of the year for CO emissions. The highest peak hour was selected for analysis. MOVES3.1 runs for CO were conducted for GD weekday PM peak hour for Shea Road, GD Saturday PM peak hour for Shea Road and the Roosevelt Avenue intersections for both No-Action and With-Action conditions under the Game Day scenario under both game start times.

PM Emissions

Following the EPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Non-attainment and Maintenance Areas* (EPA PM Guidance),[7] particulate matter MOVES runs were conducted for January, and for the peak AM, midday, PM, and overnight time periods. Traffic volumes were based on information presented in **Chapter 14, Transportation**. Traffic inputs were developed for each hour of the day from the available traffic information for the peak hours and the ATR collected for the traffic study area. MOVES was run for the No-Action and With-Action conditions for the weekday and Saturday GD (both game start time alternative scenarios) profiles and Saturday NGD profile scenarios for each link used in the intersection models utilizing link-specific parameters and data.

Fugitive Dust

In addition to exhaust, tire, and brake-wear emissions obtained from MOVES, fugitive dust emissions were calculated and added to estimate total particulate matter emissions on each link. Fugitive dust emissions were estimated following EPA's Compilation of Air Emissions Factors (AP-42)[8] guidance for paved roads. Fugitive dust emissions were used in the short-term, 24-hour modeling of $PM_{2.5}$. Consistent with NYCDEP's conclusion that fugitive dust makes an insignificant contribution to emissions on the neighborhood scale, fugitive dust emissions were not used in the annual $PM_{2.5}$ modeling (i.e., neighborhood scale and grid analyses).

Nearby Source Contribution

Nearby sources of PM emission can be included in the model if they are not appropriately reflected in the background data or affected by the project, as described in the EPA's PM Guidance, section 8.2, Nearby Sources that Require Modeling.

In addition to the approach and departure links for the selected intersections, other roadway links were included in the intersection models. Since Grand Central Parkway main line links and ramps would be affected by the Proposed Project, the links in the line of sight from the modeled

[6] EPA. Age Distribution Projection Tool for MOVES3.xlsx <Tools to Develop or Convert MOVES Inputs | US EPA>

[7] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013C6A.pdf

[8] EPA. AP-42, chapter 13.2.1 Paved Roads. https://www.epa.gov/sites/production/files/2020-10/documents/13.2.1_paved_roads.pdf

intersections were included into the model for the Shea Road intersections and the 114th Street and Roosevelt Avenue intersection under both No-Action and With-Action condition.

Dispersion Model

The EPA AERMOD model (version 22112) was used in the analyses of CO, $PM_{2.5}$ at the selected intersections. The intersection links were modeled using the line source option in the model and following the EPA's PM Guidance. Initial vertical and horizontal dimensions and source release heights were determined based on the source types in the fleet as described in Appendix J.3 to the EPA PM Guidance. CO analysis used GD weekday PM peak hour and GD Saturday PM peak hour emission rates at each link. ~~, while~~ PM analysis ~~utilized~~ used NGD and GD Saturday 24 hourly emissions profile under both 4 PM and 7 PM start times, and a weekday GD emissions profile for the Shea Road rates.

Receptor Placement

Receptor selection followed the *CEQR Technical Manual* guidance in the Air Quality Chapter 17, Section 311.1. Sensitive receptors near the existing intersection were placed in the middle of existing sidewalks under No-Action and With-Action conditions at 1.8 meters above grade. For the assessment of short-term impacts, receptors were placed at the sidewalks around the intersection along the intersection approach links. For compliance with the annual neighborhood $PM_{2.5}$ criterion, receptors were placed at 15 meters away from the curb. The Shea Road intersection receptors were placed at the sidewalk that is planned along Shea Road under With-Action condition. The walkway along the parking lot at the same location as the future sidewalk is also present under the No-Action condition.

Grid Analysis

The annual $PM_{2.5}$ impacts from the Proposed Project were evaluated using a comprehensive procedure (grid analysis) described in the *CEQR Technical Manual (*Chapter 17, section 412.2) to determine the magnitude and extent of neighborhood scale annual $PM_{2.5}$ emissions from mobile sources. Both No-Action and With-Action conditions were evaluated for the receptor grid of a 1 square kilometer that included the four intersections that were selected for the mobile source analysis and all other links that were affected by the Proposed Project and included into the traffic analysis network—see **Figure 15-2**. Links that would have very few project-generated trips and that were not included into the traffic network would have insignificant impact on the analysis results. The annual increase in concentrations averaged over the grid area was compared to the CEQR *de minimis* threshold.

Analysis Year

The mobile sources analyses were performed for 2030, the analysis year for this EIS.

Meteorological Data

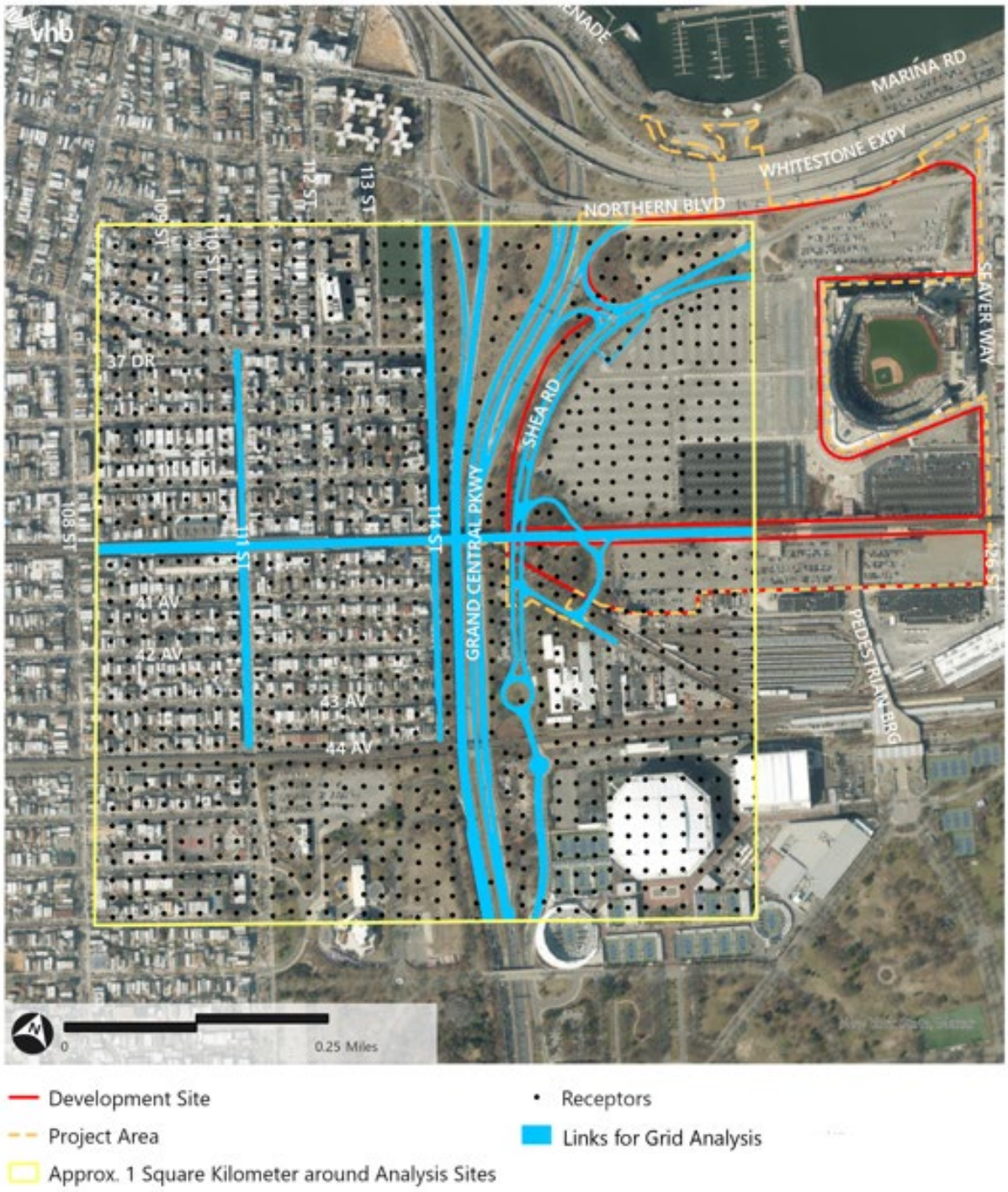
Dispersion analysis used the NYSDEC's latest available five years (2017-2021) of hourly meteorological observations from LaGuardia Airport National Weather Service station and upper air data obtained from the Brookhaven station, New York.

Parking Facilities

The parking analysis followed the *CEQR Technical Manual* air quality appendix guidelines to estimate vehicular emissions from within the facility and adjacent roadways.

The garage analysis used EPA's MOVES3.1 model to estimate emissions. Background concentrations for the pollutants of concern were the same as in the other analyses for the Proposed Project. Receptors at the sidewalk immediately adjacent to the Development Site and on the sidewalk opposite the Development Site (as applicable) were placed at pedestrian level heights. The total 1-hour and 8-hour CO pollutant concentrations were compared to the NAAQS and CO *de minimis* criteria, while the total 24-hour and annual $PM_{2.5}$ pollutant concentrations were compared to the CEQR *de minimis* criteria.

Figure 15-2 $PM_{2.5}$ Annual Grid Analysis



Atypical Source Analysis

Atypical source analysis under the *CEQR Technical Manual* applies to elevated outdoor spaces or windows located within 200 feet of an elevated highway at the similar elevation. The Proposed Project would have elevated outdoor public open space and other amenities available to visitors of the uses within Area of Development A. However, the elevated accessible open spaces would be located more than 200 feet from the Grand Central Parkway and much further from the Whitestone Expressway. Additionally, the proposed open spaces would be located approximately 30 feet above grade while the Grand Central Parkway is at grade level near the Development Site location. As such, no atypical source analysis is required.

Stationary Sources

HVAC Analysis

The Proposed Project would include a total of approximately 3.7 million gsf of mixed-use development. Although the size of such development would typically require a detailed dispersion analysis, the Applicant will commit to using electric heating and hot water systems. Therefore, no localized emissions from the HVAC or hot water systems are expected and no air quality analysis of local impacts is required.

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 SGCs and AGCs recommended in NYSDEC's DAR-1 AGC/SGC tables. If a proposed project fails the above screening analysis, or the screening analysis methodology is not applicable to the project, further refined analysis using EPA's AERSCREEN and/or AERMOD model is warranted to determine any potential for significant adverse impacts.

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 a State Facility Permit. Since no large or major sources were identified within a 1000-foot radius from the Development Site, no significant impacts on the Proposed Project is expected from such sources and no analysis is required.

Existing Conditions

Existing pollutant concentrations representative of the Project Area characterize the air quality conditions in the area. The background concentrations presented above in **Table 15-2** were collected at monitors that are representative of the Project Area. **Table 15-3** presents other criteria pollutant concentrations representative of the Project Area.

Lead concentrations are monitored at only one location in New York City, in the Bronx at IS 52 at 681 Kelly Street. All other pollutant concentrations were collected at the Queens College monitoring station, as were CO and $PM_{2.5}$ concentrations for **Table 15-2**.

Table 15-3 Existing Monitored Concentrations

Pollutant	Averaging Time	Concentration	NAAQS
Lead	3-month	0.0041 µg/m^3	0.15 µg/m^3
Nitrogen Dioxide (NO_2)	1-Hour	55 ppb	100 ppb
	Annual	14.6 ppb	53 ppb
Ozone	8-Hour	0.074 ppm	0.07 ppm
Particulate Matter (PM_{10})	24-Hour	32 µg/m^3	150 µg/m^3
Sulfur Dioxide	1-Hour	5 ppb	75 ppb

Source: Source: EPA Monitor Values Report, Outdoor Air Quality Data, https://www.epa.gov/outdoor-air-quality-data/monitor-values-report
ppm: parts per million; ppb: parts per billion

Concentrations of all pollutants except ozone are below their respective NAAQS. Ozone concentrations exceeded the 2015 8-hour standard, which corresponds with the non-attainment status of Queens County, where the project would be located.

Assessment

Mobile Sources

Screening Analysis

The screening analysis was conducted for the scenarios considered in the traffic analysis:

- NGD Weekday; AM, MD, and PM peak hours;
- NGD Weekend; Saturday PM peak hour;
- GD Weekday; PM peak hour; and
- GD Weekend; Saturday PM two alternative peak hours and Sunday MD and PM peak hours

Two types of intersections were considered in the traffic study—signalized and unsignalized intersections. Trip generation in the With-Action condition was conducted for 43 signalized or converted to signalized intersections affected by the Proposed Project and around 25 unsignalized intersections. CO CEQR screening analysis was conducted for both signalized and unsignalized intersections. The results of the CO screening analysis indicated that signalized intersections had

higher trip generation and therefore only signalized intersections were considered. The signalized intersections with the highest trip generation on the NGD and GD weekday and weekend peak periods are presented in **Table 15-4** through **Table 15-7**[9].

The intersections selected for detailed microscale analysis based on the mobile source screening described below are shown on **Figure 15-3.** The top three intersections are located close to each other along Shea Road and were therefore combined into one model. The additional intersection of Roosevelt Avenue and 114th Street was selected as the highest impacted existing intersection affected by Project generated traffic.

[9] Vehicle volumes and levels of service were updated based on traffic analyzed in the FEIS.

Figure 15-3 Intersections Selected for the Mobile Source Analysis

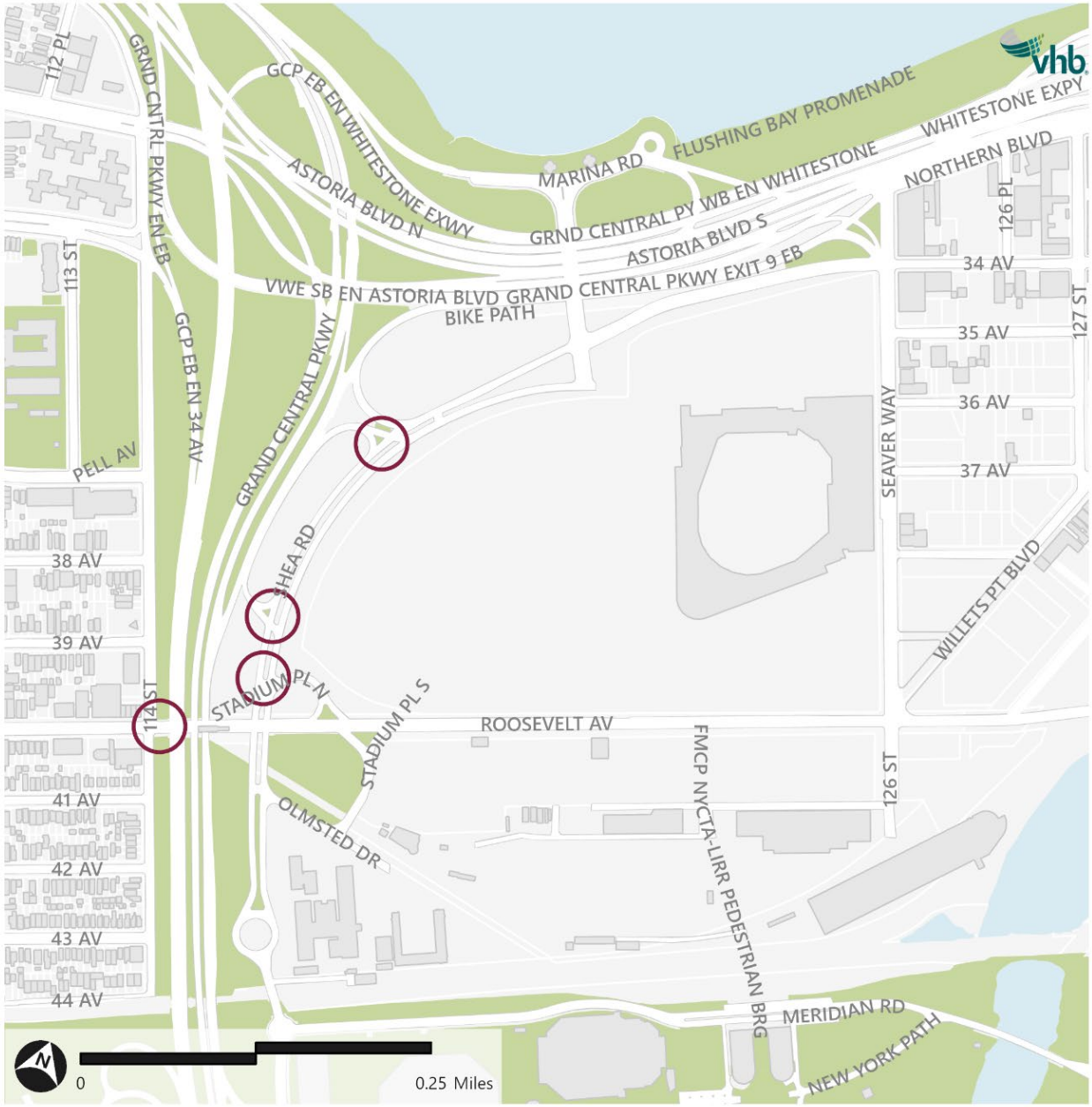


Table 15-4 NGD Weekday Signalized Intersections Trips Screening

	AM		MD		PM	
Intersection	Vehicle Volume	LOS	Vehicle Volume	LOS	Vehicle Volume	LOS
Shea Rd and GCP exit ramp	1240	DC	217055	D	2790	E
Shea Rd and Tower Parking Access	696	C	11875	CB	1898902	C
Stadium Pl N/Porte Cochere and Shea Rd	370	B	104233	B	138364	C
Roosevelt Av and 114 St	123	F	663	F	71840	DF

GCP=Grand Central Parkway

Table 15-5 NGD Weekend Signalized Intersections Trips Screening

	Sat PM	
Intersection	Vehicle Volume	LOS
Shea Rd and GCP exit ramp	**282432**	ED
Shea Rd and Tower Parking Access	**16204**	B
Stadium Pl N/Porte Cochere and Shea Rd	**158597**	AB
Roosevelt Av and 114 St	**650567**	F

Table 15-6 GD Weekday Signalized Intersections Trips Screening

	PM	
Intersection	Vehicle Volume	LOS
Shea Rd and GCP exit ramp	**2741**	F
Shea Rd and Tower Parking Access	**2473**	D
Stadium Pl N/Porte Cochere and Shea Rd	**1755**	E
Roosevelt Av and 114 St	**715**	F

Table 15-7 GD Weekend Signalized Intersections Trips Screening

	Sat 4 PM Start		Sat 7 PM Start		Sun MD		Sun PM	
Intersection	**Vehicle Volume**	**LOS**	**Vehicle Volume**	**LOS**	**Vehicle Volume**	**LOS**	**Vehicle Volume**	**LOS**
Shea Rd and GCP exit ramp	**2372**	C	**2773**	D	**1893**	D	**1980**	C~~D~~
Shea Rd and Tower Parking Access	**1303**	C	**2322**	C	**1788**	C	**1385**	C
Stadium Pl N/Porte Cochere and Shea Rd	**2247**	C	**1831**	E	**1050**	C	**1728**	B
Roosevelt Av and 114 St	**668**	F	**869~~682~~**	F	**566~~459~~**	F	**676~~518~~**	F

Since all intersections that failed the CO screening would also fail the $PM_{2.5}$ screening, both CO and $PM_{2.5}$ analyses were performed for each selected intersection as shown in **Tables 15-4** through **15-7**. Based on the incremental trips and LOS, and background traffic, Saturday GD PM peak hour scenario was selected for CO analysis. ~~and~~ NGD and GD Saturday scenarios were selected for $PM_{2.5}$ analysis for all four intersections. Additionally, weekday GD scenario was also analyzed for the Shea Road intersections for CO (PM peak hour) and for $PM_{2.5}$. Since incremental trips and the background traffic is different under the two alternative Saturday game start times, both alternative scenarios were analyzed.[~~10~~11]

Microscale Intersection Analysis

Microscale intersection analysis compares the future No-Action condition to the With-Action condition at the intersections selected for analysis. It is assumed that if no significant adverse impacts are identified at the selected intersections with the highest volumes and poor level of service, other intersections would not experience significant adverse air quality impacts.

In the No-Action condition, the Development Site would remain unchanged from existing conditions. The No-Action condition considers the effects of background growth and growth generated by known development projects (e.g., developments that are under construction, planned, or proposed by the 2030 build year; see **Table 14-43** in **Chapter 14, Transportation**).

In addition to the intersection approach and departure links, Grand Central Parkway mainline and ramps within the line of sight of the intersections were added to the intersection models to account for the background sources affected by the Proposed Project.

~~[10] Although the Saturday GD and NGD scenarios are representative and weekday results are not anticipated to be materially different from those of the Saturday analysis, additional analyses of the weekday will be conducted between the Draft and Final EIS.~~

[11] As discussed in the DEIS, the FEIS analysis included additional analyses of the weekday scenario for the Shea Road intersections, the results of which can be found in Tables 15-10 and 15-11 below.

CO Analysis

Emissions from vehicles at the intersections selected for analysis were estimated using EPA's MOVES3.1 mobile source emissions model and NYSDEC inputs for Queens County. The analysis was conducted for the two highest peak periods, weekday GD at PM peak hour and Saturday GD at PM peak hour under both ~~alternative~~ start time scenarios. It is anticipated that if no adverse impacts are identified during these highest peak hours, there would not be adverse impacts during the other hours. CO emissions were conservatively estimated using the month of January emissions. The other assumptions are described above in the **Methodology** section under **Detailed Mobile Source Analysis**.

The results of the AERMOD analysis are presented in **Table 15-8** ~~and~~ through ~~**Table 15-9**~~ **Table 15-9** for the highest CO concentrations under both Saturday GD start time~~alternative~~s and weekday GD scenarios.

Table 15-8 Highest 1-Hour and 8-Hour CO Concentrations (ppm) Saturday 7 PM Start

Intersection	1-Hour		8-Hour		
	No-Action	With Action	No-Action	With Action	Increment[1,2]
Shea Road Intersections	2.~~1~~2	2.6	1.~~4~~5	1.7	0.~~4~~4~~3~~3
114 St and Roosevelt Av	2.6	8.2	1.7	5.1	3.4
CO NAAQS/de minimis	35		9		3.9

Note
1. The incremental concentration is the difference between the 8-hour No-Action and With-Action concentrations. The increment is compared with the CEQR *de minimis*.
2. The first highest concentration is used for comparison with the CEQR *de minimis* threshold. The highest second highest concentration is used for comparison with the NAAQS.

Table 15-9 Highest 1-Hour and 8-Hour CO Concentrations (ppm) Saturday 4 PM Start

Intersection	1-Hour		8-Hour		
	No-Action	With Action	No-Action	With Action	Increment[1,2]
Shea Road Intersections	2.2	2.3	1.5	1.6	0.2
114 St and Roosevelt Av	2.8	3.9	1.7	2.6	1.0
CO NAAQS/de minimis	35		9		3.9

Note
1. The incremental concentration is the difference between the 8-hour No-Action and With-Action concentrations. The increment is compared with the CEQR *de minimis*.
2. The first highest concentration is used for comparison with the CEQR *de minimis* threshold. The highest second highest concentration is used for comparison with the NAAQS.

Table 15-10 Highest 1-Hour and 8-Hour CO Concentrations (ppm) Weekday

Intersection	1-Hour		8-Hour		
	No-Action	With Action	No-Action	With Action	Increment[1,2]
Shea Road Intersections	2.1	2.3	1.5	1.6	0.2
CO NAAQS/de minimis	**35**		**9**		**3.9**

Note
1. The incremental concentration is the difference between the 8-hour No-Action and With-Action concentrations. The increment is compared with the CEQR *de minimis*.
2. The first highest concentration is used for comparison with the CEQR *de minimis* threshold. The highest second highest concentration is used for comparison with the NAAQS.

As the results show, the highest modeled concentrations under the No-Action and With-Action conditions and both ~~alternative~~ start time scenarios at the selected intersections were below the 1 and 8-hour NAAQS. The 8-hour impacts of the With-Action condition over the No-Action were below the CEQR *de minimis* criterion for CO under both ~~alternative~~ start time scenarios. As such, the Proposed Project would not adversely impact CO levels near the affected intersections.

PM Analysis

The particulate matter analysis was conducted to estimate the 24-hour and annual $PM_{2.5}$ concentrations and to compare them with the CEQR *de minimis* thresholds. As described above, from among the five different scenarios—Weekday or Weekend (Saturday) for NGD; Weekday, Saturday, or Sunday for GD—three~~wo~~ scenarios were selected based on the screening analysis. ~~These t~~Two selected scenarios were Saturday for both GD and NGD for all selected intersections and one was weekday GD for Shea Road intersections. PM analysis also considered an alternative scenario with the different game start time on Saturday.

The 24-hour hourly traffic conditions were composed of blocks of time reflective of the AM, midday, and PM peak hour game conditions and, if applicable, evening hours and overnight periods. The game-related periods considered were before, during, and after the game, when game-related trips influenced the traffic conditions, The variation of volumes was based on the ATR collected for the traffic study area.

$PM_{2.5}$ concentrations were estimated for the 24-hour and annual periods under No-Action and With-Action conditions. ~~**Table 15-10**~~ **Table 15-11** presents the 8th Highest 24-hour results in comparison with the 24-hour *de minimis* criterion. ~~**Table 15-11**~~ **Table 15-12** presents the annual results.

~~Table 15-10~~Table 15-11 8th Highest 24-Hour $PM_{2.5}$ Concentrations (~~μ~~μg/m^3)

Intersection	Scenario	No-Action Impact[1]	No-Action Total[2]	With-Action Impact[1]	With-Action Total[2]	Increment[3]
Shea Road Intersections	NGD Saturday	~~3.7~~3.0	20.7	~~11~~10.~~8~~8. 6~~0~~	26.3~~4~~	~~7.1~~5.6~~3~~
	GD Saturday 7PM start	~~4.5~~3.6	21.3	~~12.8~~9.9	27.~~7~~6	~~8.3~~6.3
	GD Saturday 4 PM Start	~~6.4~~5.1	22.8	~~12.9~~10.1	27.8	~~6.4~~5.0
	GD Weekday	~~4.1~~3.3	21.0	~~11.9~~9.4	27.1	~~7.8~~6.1
114 St and Roosevelt Ave	NGD Saturday	~~5.9~~6.3~~4.~~ 7	22.~~2~~4	~~7.4~~9.~~5~~6. 9	~~23~~24.6	~~1.5~~3.~~2~~2.2
	GD Saturday 7PM Start	~~8.4~~6.~~9~~5. 3	23.0~~9~~	~~11.6~~13.~~3~~ 9.8	~~2~~6.0~~7~~.5	~~3.2~~6.~~4~~4.5
	GD Saturday 4 PM Start	~~9.6~~7.2	24.9	~~15.5~~11.4	29.1	~~5.9~~4.2
$PM_{2.5}$ NAAQS/*de minimis*			**35**		**35**	**8.7**

Notes:

1. The ~~first~~ eighth highest concentration (i.e., 98-percentile modeled $PM_{2.5}$ concentrations averaged over 5 years) for comparison with the CEQR *de minimis* threshold.
2. The 98-percentile modeled $PM_{2.5}$ concentrations averaged over 5 years are used to estimate total concentrations for comparison with the NAAQS. Total concentrations combine the background value from **Table 15-2** with the modeled concentration.
3. The incremental concentration is the difference between the 24-hour No-Action and With-Action impacts. The increment is compared with the CEQR *de minimis*.
4. All concentrations in this table reflect fugitive dust emissions adjusted for precipitation. However, the concentrations would not change significantly even without the adjustment for precipitation.

~~Table 15-11~~Table 15-12 Highest Annual $PM_{2.5}$ Concentrations (~~μ~~μg/m^3)

Intersection	Scenario	No-Action Impact[1]	No-Action Total[2]	With-Action Impact[1]	With-Action Total[2]	Increment
Shea Road Intersections	NGD Saturday	0.07	6.87	0.16	6.96	0.09
114 St and Roosevelt Ave	NGD Saturday	0.21	7.01	0.5	7.30	0.29
$PM_{2.5}$ NAAQS/*de minimis*			**9.0**		**9.0**	**0.1**

Notes:

[1] No-Action and With-Action impacts are the average levels over the modeled five years of meteorological observations corresponding to the highest annual impact.

[2] No-Action and With Action total results include background concentrations from **Table 15-2**.

The results presented in **~~Table 15-10~~ Table 15-11** show that the 24-hour $PM_{2.5}$ concentrations at the modeled intersections would be below the NAAQS and the City *de minimis* threshold for both No-Action and With-Action conditions under both ~~alternative~~ game start time scenarios. The results in **~~Table 15-11~~ Table 15-12** demonstrate that the total annual concentrations would be below the

NAAQS. A neighborhood scale analysis was performed to determine the annual $PM_{2.5}$ impacts from the mobile sources.

PM Annual Grid Analysis

The neighborhood scale annual $PM_{2.5}$ analysis was conducted using estimated annual concentrations over a 1-kilometer by 1-kilometer receptor grid that covered all four selected intersections. The sources included all links considered in the 24-hour analysis and any additional links that were affected by the Proposed Project and were part of the traffic network for the Proposed Project. Grand Central Parkway mainline links and ramps were incorporated within the entire grid area.

Annual $PM_{2.5}$ concentrations were estimated for the No-Action and With-Action conditions. ~~**Table 15-12**~~ **Table 15-13** presents the average annual results in comparison with the annual CEQR *de minimis* criterion.

~~**Table 15-12**~~**Table 15-13 Highest Annual $PM_{2.5}$ Concentrations (~~μ~~μg/m^3)**

Scenario	No-Action Impact[1]	With-Action Impact[1]	Increment
NGD Saturday	0.050	0.082	0.032
GD Saturday	0.058	0.108	0.051
$PM_{2.5}$ *de minimis*			0.1

Note:
[1] No-Action and With Action impacts are the average concentrations over the modeled five years of meteorological observations corresponding to the highest annual incremental impact.

As ~~**Table 15-12**~~ **Table 15-13** demonstrates, the annual $PM_{2.5}$ increment between the With-Action and No-Action is below the CEQR *de minimis* criterion.

The results presented in ~~**Table 15-10**~~ **Table 15-11** through ~~**Table 15-12**~~ **Table 15-13** show that the Proposed Project's 1- and 8-hour CO concentrations and the 24-hour and annual neighborhood $PM_{2.5}$ concentrations are below respective NAAQS for both No-Action and With-Action conditions. The increments between With-Action and No-Action conditions at the modeled intersections would be below corresponding CEQR *de minimis* thresholds. As such, no significant adverse air quality impacts are expected from the Proposed Project's mobile sources.

Parking Analysis

The parking analysis follows the *CEQR Technical Manual* air quality appendix guidelines in order to estimate vehicular emissions from within the facility and adjacent roadways.

There are six proposed parking facilities in Areas of Development A through D of the Proposed Project. **Table 1-3** in **Chapter 1, Project Description** lists the number of parking spaces in each of the five garages and one surface parking lot. The largest facilities, and therefore those which would result in the highest concentrations of emissions, are the Area of Development D garage, with 4,200 spaces, and the podium garage within Area of Development A, with 3,905 spaces. The Area of Development D garage would be naturally ventilated through the side openings at each floor and contain a solar canopy above the roof level. The podium garage within Area of Development A would occupy the two first levels of the building in Area of Development A. Both levels of the podium

garage would be mechanically ventilated with, as currently designed, six exhaust locations spread out along the Shea Road-facing frontage of the building on each side of the Porte Cochere. The exhausts would point in the direction of Shea Road. The main entrance to the podium garage within Area of Development A would be located under the Porte Cochere with access provided from Shea Road.

Three analyses were conducted to assess the potential for air quality impacts of vehicular emissions from the two largest parking facilities. One analysis estimated the potential for impacts from the naturally ventilated multilevel Area of Development D garage. The two other analyses are associated with the podium garage within Area of Development A; one analysis evaluated the potential for impacts at the Shea Road walkway near the parking egress and the other analysis evaluated the potential for impacts from the mechanical exhaust of the podium garage on the Shea Road walkway.

Area of Development D Garage Analysis

The Area of Development D garage would primarily be used by patrons of Citi Field or the future soccer stadium during GDs. Since Citi Field is larger than the soccer stadium and the other uses of this parking are much smaller, Citi Field GD is used to represent the worst in and out volumes. The highest ins and outs for this garage are presented in ~~**Table 15-13**~~**Table 15-14**. As the table demonstrates, the highest peak hour for that garage is 10 to 11 PM on Saturday when most fans leave after the game.

~~Table 15-13~~Table 15-14 Hourly In and Out Volumes for Area of Development D Garage, Game Day

	Weekday			Saturday			Sunday		
Time	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
12-1 AM	0	0	0	0	0	0	0	0	0
1-2 AM	0	0	0	0	0	0	0	0	0
2-3 AM	0	0	0	0	0	0	0	0	0
3-4 AM	0	0	0	0	0	0	0	0	0
4-5 AM	0	0	0	0	0	0	0	0	0
5-6 AM	0	0	0	0	0	0	0	0	0
6-7 AM	0	0	0	0	0	0	0	0	0
7-8 AM	0	0	0	0	0	0	0	0	0
8-9 AM	0	0	0	0	0	0	0	0	0
9-10 AM	0	0	0	0	0	0	0	0	0
10-11 AM	0	0	0	0	0	0	596	0	596
11 AM-12 PM	0	0	0	0	0	0	831	0	831
12-1 PM	0	0	0	165	0	165	831	0	831
1-2 PM	0	0	0	323	0	323	865	64	929
2-3 PM	0	0	0	404	0	404	277	0	277
3-4 PM	368	0	368	565	0	565	0	0	0
4-5 PM	552	0	552	646	0	646	0	346	346
5-6 PM	502	59	561	646	0	646	**9**	**1788**	**1797**
6-7 PM	552	0	552	614	54	668	0	1073	1073
7-8 PM	384	0	384	646	0	646	0	138	138
8-9 PM	0	0	0	0	0	0	0	0	0
9-10 PM	0	460	460	0	322	322	0	0	0
10-11 PM	**0**	**1839**	**1839**	**0**	**3633**	**3633**	0	0	0
11 PM-12 AM	0	0	0	0	0	0	0	0	0

The emissions of the public parking garage were analyzed using the *CEQR Technical Manual* parking analysis spreadsheet. The public parking facility would consist of eight floors and a roof level covered by a solar panel canopy. Contributions from all parking levels were accounted for in the analysis of CO and PM. A contribution of emissions from Seaver Way traffic for that hour was included in order to estimate the impacts on the sidewalk receptor on the far side of the street. The annual $PM_{2.5}$ analysis conservatively assumed that peak hourly emissions would occur during all hours of the year. The results presented in **~~Table 15-14~~ Table 15-15** show that concentrations from this garage would be below both the NAAQS and the City's *de minimis* criteria, and no significant adverse air quality impacts would be expected.

~~Table 15-14~~Table 15-15 Highest Concentrations from Area of Development D Garage

Garage	Receptor Location	CO (ppm)		$PM_{2.5}$ (~~µ~~µg/m^3)	
		1-Hour	8-Hour	24-Hour	Annual
Area of Development D	Near side	2.4	1.8	0.2	0.05
	Far side	2.5	1.7	0.5	0.1
NAAQS/Criteria		35	9/3.9	8.7	0.3

Podium Garage within Area of Development A

The podium garage would be used by the patrons of the entertainment uses within Area of Development A. This garage would be used on both GDs and on NGDs. ~~**Table 15-15**~~ **Table 15-16** and ~~**Table 15-16**~~ **Table 15-17** present the in and out volumes for both scenarios. As noted in the tables, the highest peak hour under the two scenarios is the 11 PM to midnight hour on Saturday NGD. This hour was used in the garage analyses.

The podium garage within Area of Development A would be mechanically ventilated; each of the two levels would be ventilated separately. Both levels would have ventilation ducts that would exhaust through the louvers located on the Shea Road side of the building as described above. The second-level louvers would be located above the first level at least 15 feet above grade and would not significantly affect the Shea Road walkway below. Louvers at the first level would be located at least 9 feet above grade. That elevation was conservatively used to assess impact on the Shea Road walkway below. In addition, although mechanical ventilation would maintain negative pressure to avoid exhaust through the entrance/exit opening of the garage, it was conservatively assumed that emissions generated inside the garage would partially escape through that opening in addition to being pushed out of the louvers by the ventilation fans.

~~Table 15-15~~Table 15-16 Hourly In and Out Volumes in Podium Garage within Area of Development A for the Game Day

	Weekday			Saturday			Sunday		
Time	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
12-1 AM	875	960	1835	1225	1320	2545	934	948	1882
1-2 AM	696	861	1557	974	1248	2222	741	888	1629
2-3 AM	474	669	1143	648	976	1624	496	693	1189
3-4 AM	353	622	975	482	821	1303	372	582	954
4-5 AM	410	843	1253	472	1103	1575	368	780	1148
5-6 AM	30	66	96	66	63	129	53	48	101
6-7 AM	85	95	180	74	74	148	61	59	120
7-8 AM	279	189	468	198	130	328	156	107	263
8-9 AM	487	337	824	385	244	629	304	198	502
9-10 AM	753	435	1188	615	391	1006	494	314	808
10-11 AM	738	461	1199	846	467	1313	685	372	1057
11 AM-12 PM	844	539	1383	991	607	1598	804	476	1280
12-1 PM	971	504	1675	1274	860	2134	1016	671	1687
1-2 PM	1152	950	2102	1286	965	2251	866	746	1612
2-3 PM	923	846	1769	1100	1014	2114	893	776	1669
3-4 PM	924	807	1731	1282	1167	2443	1020	893	1913
4-5 PM	975	971	1946	1363	1234	2597	1087	940	2027
5-6 PM	1254	1085	2339	1445	1148	2593	1134	870	2004
6-7 PM	1199	1076	2275	1491	1268	2759	1221	970	2191
7-8 PM	1496	1007	2503	1678	1241	2919	1374	952	2326
8-9 PM	1485	981	2466	1744	1254	2998	1404	952	2356
9-10 PM	1345	1001	2346	1538	1304	2842	1199	975	2174
10-11 PM	1253	1123	2376	1565	1432	2997	1216	1081	2297
11 PM-12 AM	**1268**	**1576**	**2844**	**1569**	**1888**	**3457**	**1242**	**1467**	**2709**

~~Table 15-16~~Table 15-17 Hourly In and Out Volumes in Podium Garage within Area of Development A for the No Game Day

	Weekday			Saturday			Sunday		
Time	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
12-1 AM	881	976	1857	1235	1345	2580	935	952	1887
1-2 AM	699	877	1576	980	1271	2251	742	891	1633
2-3 AM	476	679	1155	651	993	1644	497	695	1192
3-4 AM	354	632	986	484	836	1320	372	584	956
4-5 AM	411	856	1267	475	1124	1599	368	782	1150
5-6 AM	30	66	96	66	64	130	53	48	101
6-7 AM	87	96	183	74	75	149	61	59	120
7-8 AM	282	190	472	201	131	332	157	107	264
8-9 AM	433	341	774	391	247	638	305	198	503
9-10 AM	762	439	1201	622	396	1018	496	315	811
10-11 AM	746	467	1213	858	474	1332	688	373	1061
11 AM-12 PM	856	546	1402	1005	617	1622	809	477	1286
12-1 PM	986	718	1704	1292	877	2169	1022	675	1697
1-2 PM	1167	968	2135	1309	992	2301	1039	754	1793
2-3 PM	931	863	1794	1116	1040	2156	901	781	1682
3-4 PM	933	824	1977	1299	1188	2487	1026	902	1928
4-5 PM	988	989	1977	1385	1267	2652	1095	953	2048
5-6 PM	1267	1106	2373	1462	1174	2636	1142	876	2018
6-7 PM	1206	1098	2304	1510	1297	2807	1224	978	2202
7-8 PM	1507	1019	2526	1692	1265	2957	1379	956	2335
8-9 PM	1496	994	2490	1762	1277	3039	1410	958	2368
9-10 PM	1353	1014	2367	1554	1329	2883	1203	982	2185
10-11 PM	1262	1140	2402	1578	1459	3037	1218	1087	2305
11 PM-12 AM	**1274**	**1603**	**2877**	**1580**	**1925**	**3505**	**1243**	**1473**	**2716**

Two garage analyses were conducted, one at the entrance of the podium garage and one near the first level mechanical exhaust location. The analyses followed the *CEQR Technical Manual* guidance for the appropriate analysis. Results are presented in **~~Table 15-17~~Table 15-18**. As the results show, all concentrations generated by the garage traffic are below both the NAAQS and the City's *de minimis* criteria. Therefore, based on the results for both garages, no significant adverse air quality impacts are expected from the Project's parking facilities.

~~Table 15-17~~Table 15-18 Highest Concentrations from Area of Development A Garage

Garage	Receptor Location	CO (ppm)		$PM_{2.5}$ (μg/m^3)	
		1-Hour	8-Hour	24-Hour	Annual
Entrance	Garage entrance	2.8	2.0	2.2	0.2
Vent Exhaust	Garage exhaust	2.1	1.5	0.9	0.1
Criteria		**35**	**9/3.9**	**8.7**	**0.3**

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 Development Site was conducted to identify potential sources and determine if there are active permits associated with those sources.

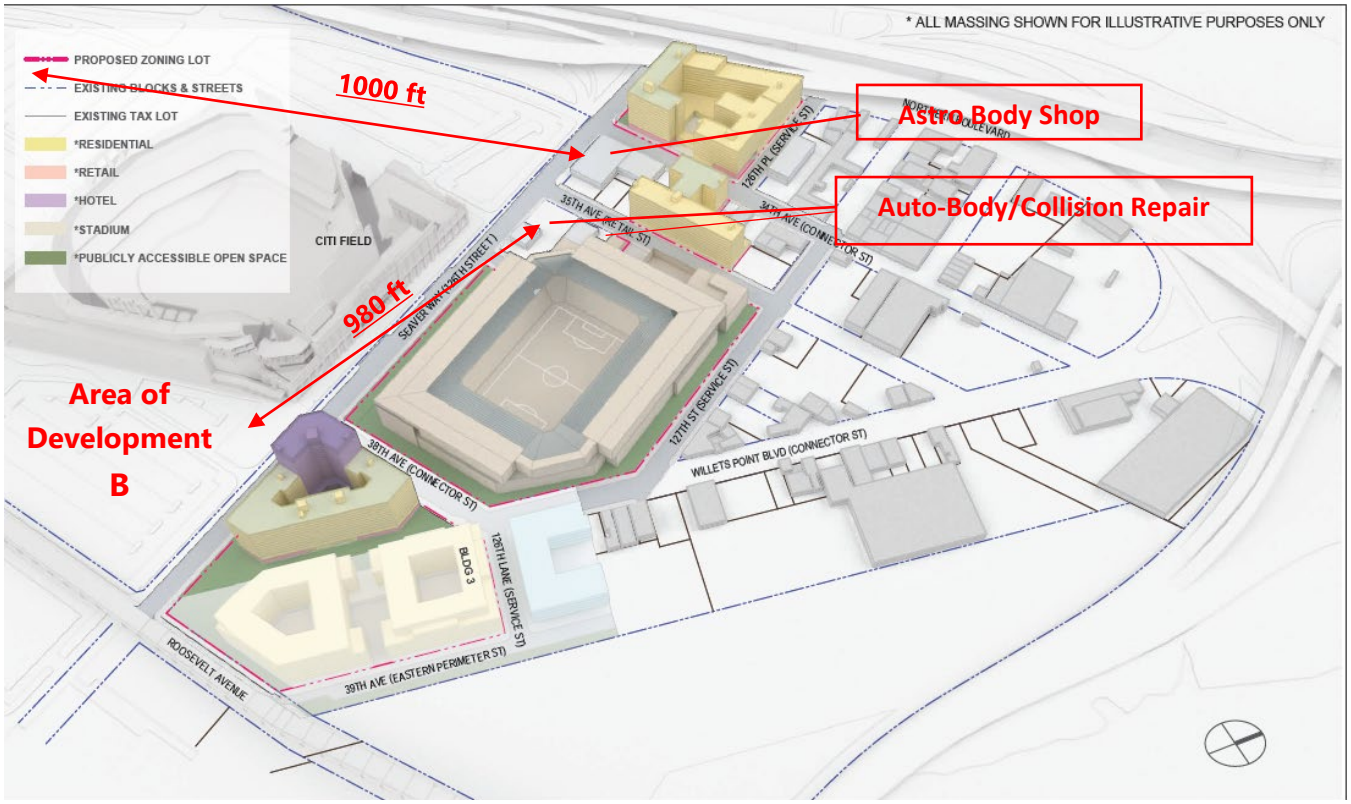
Land use maps and the NYCDEP's Clean Air Tracking System (DEP CATS) were reviewed to search for potential industrial operations. ~~**Table 15-18**~~ **Table 15-19** presents identified existing sources located within 400 feet of the Development Site boundary. Several of these sources will be demolished as part of construction of Willets Point Phase 2, which is projected to be completed in 2027, while a few industrial uses will remain in operation. These remaining industrial sources will operate temporarily, until demolished and redeveloped in Phase 3 of the Willets Point development, to be completed in 2039. Since the Proposed Project is expected to become operational in 2030, only sources that will continue to operate under the With-Action condition were considered.

~~Table 15-18~~Table 15-19 Existing Industrial Sources

Address	Name, Business type	Application ID	W/Action Status
126-02 Northern Blvd	Leonardo's Auto Repair Inc		Demolished in Willets Point Project Phase 2
126-12 Northern Blvd	Auto-Body/Collision Repair	PA038881/ 000885	Demolished in Willets Point Project Phase 2
126-16 Northern Blvd	Auto-Body/Collision Repair		Demolished in Willets Point Project Phase 2
126-11 34 Avenue	Express Auto Body Repair		Demolished in Willets Point Project Phase 2
34-09 126 Street	Astro Body Shop	PW002717/ 008718	Demolished in Willets Point Project Phase 3
126-10 35 Avenue	Auto-Body/Collision Repair		Demolished in Willets Point Project Phase 3
126-30 35 Avenue	Auto-Body/Collision Repair		Demolished in Willets Point Project Phase 3
37-11 126 Street	Auto-Body/Collision Repair	PB075401/ 041605/ 075603/005102	Demolished in Willets Point Project Phase 2

Figure 15-4 presents the proposed land uses under Willets Point Phase 2. Sensitive land uses in Area of Development A would include a mix of uses that include a hotel, gaming facility, concert venue, convention and meeting space, community facility, retail use, and restaurants. Area of Development B would include a food hall, community facility, administrative offices, and local retail (see **Chapter 1, Project Description** for details). There is a distance of more than 400 feet from the industrial uses that will remain in Phase 2 and be demolished in Phase 3 of the Willets Point development to the sensitive receptors of the Proposed Project, as shown on **Figure 15-4**. As such, no industrial source within 400 feet of the Proposed Project sensitive receptors was identified under the With-Action condition. Therefore, no industrial source analysis is warranted and no adverse significant air quality impacts on the Project from such sources is anticipated.

Figure 15-4 Willets Point Project Phase 2 Development



Source: Willets Point-Phase 2 Development. CEQR No. 23DME005Q. Final Second Supplemental Environmental Impact Statement for the Willets Point Phase 2 Development Project, published February 23, 2024