Seaside Park and Community Arts Center
Chapter 10: Air Quality

A. INTRODUCTION

This chapter examines the potential for air quality impacts from the proposed project. Ambient air quality is affected by numerous sources and activities that introduce air pollutants into the atmosphere. The analyses described in the sections that follow were performed utilizing the general procedures recommended in the *City Environmental Quality Review (CEQR) Technical Manual*.

The proposed project involves the development of approximately 2.41-acres of publicly accessible open space, which would include a seasonal amphitheater for concerts and other events. The proposed project also includes the landmark (Former) Childs Restaurant Building, which would be restored and altered to provide the stage area for the open-air concert venue, and renovated for adaptive reuse as a restaurant and banquet facility. Under the reasonable worst-case development scenario (RWCDS) the future With-Action conditions, compared to No-Action conditions, would result in a decrease of 223,000 square feet (sf) (approximately 223 DUs) of residential, 33,978 sf of local retail, the addition of 1.14 acres of publicly accessible open space, and the addition of an approximately 5,100-seat amphitheater (6,000 attendees are assumed for conservative analysis purposes).

Air quality impacts can be either direct or indirect. Direct impacts stem from emissions generated by stationary sources, such as emissions from fuel burned on-site for heating, ventilation, and air conditioning (HVAC) systems. Indirect effects include emissions from motor vehicles (mobile sources) generated by the proposed actions.

Given the nature of this project, a screening analysis was performed to evaluate the possibility of potential impacts of both stationary and mobile sources. As described below; the air quality analysis focuses on the effects of motor vehicle emissions at the most critical intersections. As such the analysis includes the potential for changes in vehicular travel associated with the proposed project to result in mobile source (vehicular related) air quality impacts.

B. PRINCIPAL CONCLUSIONS

A screening analysis following the CEQR *Technical Manual* guidelines was performed for stationary and mobile sources. The results indicated that there is no potential for stationary source impacts from the (Former) Childs Restaurant Building HVAC system.

Of the 28 intersections evaluated (refer to Chapter 9, “Transportation”) for the pre- and post-event weekday and Saturday peak hour, 14 resulted in traffic increments over the *CEQR* screening threshold criteria of 170 or more project-generated vehicles for CO evaluation. The five intersections with the highest peak hour volumes and traffic increments were selected for detailed microscale CO modeling analysis. The result of this analysis indicated that all intersections analyzed would not exceed the 8-hour standard. The maximum estimated concentration of 3.12 parts per million (ppm) with the proposed project is below the National Ambient Air Quality (NAAQS) of 9 ppm. Also, the New York City Department of Environmental Protection (NYCDEP) CO *de minimis* criteria would not be exceeded, since

the maximum increment from the proposed project (0.42 ppm) would not have the potential to cause CO impacts that are considered to be significant (2.97 ppm).

All intersections were below the screening criteria for $PM_{2.5}$ analysis (more than 23 project generated heavy duty trucks (HDDV) or its equivalent in light duty vehicle emissions). As such there is no potential for exceeding the $PM_{2.5}$ NAAQS, and NYCDEP *de minimis* criteria for significant impacts.

The result of this analysis is that the stationary and mobile source impacts of the proposed project would not significantly impact local air quality levels.

C. POLLUTANTS OF CONCERN

Criteria Pollutants

The following air pollutants, known as criteria pollutants, have been identified by the U.S. Environmental Protection Agency (EPA) as being of concern nationwide: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead. National Ambient Air Quality Standards (NAAQS) are concentrations set for each of the criteria pollutants specified by the EPA that have been developed to protect human health and welfare. New York has adopted the NAAQS as state ambient air quality standards. These standards, together with their health-related averaging periods, are presented in TABLE 10-1.

TABLE 10-1
Applicable National and State Ambient Air Quality Standards

Pollutant	Averaging Period	National and NY State Standards	
		Primary	Secondary
Ozone (O_3)	8 Hour [3]	0.075 ppm (147 µg/m^3)	Same as Primary Standard
Carbon Monoxide [1]	8 Hour	9 ppm (10 mg/m^3)	
	1 Hour	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1 Hour Average [2]	0.10 ppm (188 µg/m^3)	—
Sulfur Dioxide (SO2)[5]	1 Hour [6]	0.075 ppm (196 µg/m^3)	—
	Maximum 3-hour average		0.5 ppm (1,300 µg/m3)
Suspended Particulate Matter (PM_{10})	24 Hour	150 µg/m^3	Same as Primary Standard
Suspended Fine Particulate Matter ($PM_{2.5}$)	24 Hour [4]	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	15 mg/m^3
Lead	Rolling 3-Month Average[7]	0.15 µg/m^3	Same as Primary Standard

Source: www.epa.gov/air/criteria.html

Notes:

(1) Not to be exceeded more than once a year.
(2) 3-year average of the annual 98th percentile daily maximum 1-hour average concentration. Effective April 12, 2010.
(3) 3-year average of the annual fourth highest daily maximum 8-hour average concentration.
(4) Not to be exceeded by the annual 98th percentile when averaged over 3 years.
(5) EPA revoked the 24-hour and annual primary standards, replacing them with a 1-hour average standard, effective August 23, 2010. However these standards remain in effect until one year after an area is designated for the 2010 standard.
(6) 3-year average of the annual 99th percentile daily maximum 1-hour average concentration.
(7) Federal standard for lead has not officially been adopted by NYS

ppm – parts per million
µg/m^3 – micrograms per cubic meter
NA – not applicable
All annual periods refer to calendar year.

Toxic Air Pollutants

In addition to criteria pollutants, small quantities of a wide range of the non-criteria air pollutants, known as toxic air pollutants, which are emitted from nearby industrial and commercial facilities, are also of concern. These pollutants can be grouped into two categories: carcinogenic and non-carcinogenic air pollutants. These include hundreds of pollutants, ranging from high to low toxicity. While no federal standards have been promulgated for toxic air pollutants, the EPA and NYSDEC have issued guidelines that establish acceptable ambient levels for these pollutants based on human exposure criteria. The procedures to estimate inhalation exposure concentration, hazard index, and cancer risk of toxic pollutants are outlined in the EPA Human Health Risk Assessment Protocol (HHRAP) (EPA 520-R-05-006).

D. EXISTING MONITORED AIR QUALITY CONDITIONS

Monitored concentrations of SO_2, NO_2, CO, ozone, lead, PM_{10}, and $PM_{2.5}$ for the study area are shown in Table 10-2. These values are the most recent monitored data that have been made available by New York State Department of Environmental Conservation (NYSDEC). There were no monitored violations of NAAQS at these monitoring sites, with the exception of O3 which is above the revised 8-hour NAAQS. While the values in Table 10-2 are a reflection of the existing conditions, for modeling purposes the CO analysis utilized the background values which were developed following DEP guidance.

TABLE 10-2

Representative Monitored Ambient Air Quality Data (2011)

Pollutants	Location	Units	Period	Concentration	Exceeds Federal Standard?	
					Primary	Secondary
CO	Queen college 2, Queens	ppm	8-hour	1.4	N	-
			1-hour	1.9	N	-
SO2	Queen college 2, Queens	µg/m3	Annual	6.91	N	-
			24-hour	39.40	N	-
			3-hour	77.50	-	N
Respirable particulates (PM_{10})	Division Street, Manhattan	µg/m3	24-hour	46 (1)	N	N
Respirable particulates ($PM_{2.5}$)	Division Street, Manhattan	µg/m3	Annual	11.7	N	N
			24-hour	26.8	N	N
NO2	Queen college 2, Queens	µg/m3	Annual	40.64	N	N
			One hour	125.96		
Lead	J.H.S. 126, Brooklyn	µg/m3	3-month	0.014 (2)	N	-
Ozone (O3)	Susan Wagner, Staten Island	ppm	1-hour	0.104 (3)	-	-
		ppm	8-hour	0.087 (4)	N	N

Notes: 1 The annual PM10 standard was revoked, effective December 18, 2006. 2 The data is for 2009. 3. 1-hour ozone NAAQS has been replaced with the 8-hour standard; however, the maximum monitored concentration is provided for informational purposes. 4 The concentration does exceed the revised standard of 0.075 ppm, effective May 2008. **Source**: NYSDEC, 2011 New York State Ambient Air Quality Data.

E. POLLUTANTS FOR ANALYSIS – SCREENING CRITERIA

Ambient air quality is affected by air pollutants produced by both motor vehicles and fixed sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of carbon monoxide (CO) are predominantly influenced by mobile source emissions. Particulate matter (PM), volatile organic compounds (VOCs), and nitrogen oxides (nitric oxide, NO, and nitrogen dioxide, NO_2, collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide (SO_2) are associated mainly with stationary sources, and sources utilizing non-road diesel such as diesel trains, marine engines, and non-road vehicles (e.g., construction engines). On-road diesel vehicles currently contribute very little to SO_2 emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs.

Stationary Sources

According to the *CEQR Technical Manual*, the potential for stationary source air quality impacts exists when actions create new stationary sources of pollutants that can affect surrounding uses (such as emission stacks for industrial plants, or exhaust from boiler stack(s) used for heating/hot water, ventilation, or air conditioning (HVAC) systems of a building); or when they locate new sensitive uses (schools, hospitals, residences) near such stationary sources. Impacts from boiler emissions are a function of fuel type, stack height, minimum distance from the source to the nearest receptor (building), and floor area (square footage) of development resulting from the project. If a screening analysis shows that the nearest existing buildings to the proposed development that are of similar or greater height would not be impacted by the new HVAC systems, then all other buildings in the vicinity would also not be impacted.

As described above, the proposed project would include an approximately 5,100-seat seasonal amphitheater, and the restoration and adaptive reuse of the (Former) Childs Restaurant Building into an approximately 60,000 sf indoor entertainment, banquet, and restaurant facility with rooftop outdoor seating. The proposed amphitheater, which would be an open-air venue with a removable tensile roof cover, would not have any HVAC systems. The renovated (Former) Childs Restaurant Building would have new HVAC equipment. With the proposed action, the (Former) Childs Restaurant Building would be substantially the same as in the No-Action condition, including no change in terms of the commercial square footage, and the relative heights of the building. However, given the possibility of different stack locations, a screening analysis was performed to assess air quality impacts associated with emissions from the HVAC system of the (Former) Childs Restaurant Building in the future with the proposed project.

The (Former) Childs Restaurant Building has a height of approximately 37 feet to the roof-line, and approximately 47.6 feet to the top of parapet. In the With-Action condition, the building would have a rooftop HVAC boiler and stack, located within the mechanical equipment enclosure at the northwestern quadrant of the building. The mechanical equipment would be surrounded by a 10-foot high screen. The boiler itself would rise approximately five feet above the roof height, whereas the boiler stack would rise to the top of the parapet level, and would be located at a distance of approximately 78 feet from the northern building line. The boiler would utilize natural gas.

The closest building to the (Former) Childs Restaurant Building is the immediately adjacent 3-story Medicaid office building at 3050 West 21st Street, which has a height of approximately 36 feet to the roof line. However, as this building would be located approximately 10 feet below the height of the boiler emissions stack at the (Former) Childs Restaurant Building, it would not be affected by any boiler emissions from the proposed project.

The next closest building of similar or greater height to the (Former) Childs Restaurant Building is the 6-story (63-feet high) residential building at 3040 West 22nd Street, which is located approximately 230 feet to the west of the (Former) Childs Restaurant Building. To determine if emissions from the (Former) Childs Restaurant Building would result in an adverse impact to this residential building, the preliminary HVAC screening analysis was carried out using *CEQR Technical Manual* methodologies. As the (Former) Childs Restaurant Building would use natural gas for HVAC operations, Figure 17-7 from the *CEQR Technical Manual*'s Air Quality Appendix was used. The screening analysis indicated that the HVAC emissions from the (Former) Childs Restaurant Building would not cause an impact to the residential building at 3040 West 22nd Street. Therefore, no stationary source air quality impacts on surrounding buildings are projected as a result of the proposed action, and no further analysis is warranted.

In addition, the (Former) Childs Restaurant Building does not have any operable windows on the northern or western facades, and would therefore not be affected by any boiler emissions from the existing adjacent Medicaid office building at 3050 West 21st Street.

Industrial Source Screening

In addition to criteria pollutants, small quantities of a wide range of the non-criteria air pollutants, known as toxic air pollutants, which are emitted from nearby industrial and commercial facilities, are also of concern. These pollutants can be grouped into two categories: carcinogenic air pollutants, and non-carcinogenic air pollutants. These include hundreds of pollutants, ranging from high to low toxicity. While no federal standards have been promulgated for toxic air pollutants, the EPA and NYSDEC have issued guidelines that establish acceptable ambient levels for these pollutants based on human exposure criteria. The procedures to estimate inhalation exposure concentration, hazard index, and cancer risk of toxic pollutants are outlined in the EPA Human Health Risk Assessment Protocol (HHRAP) (EPA 520-R-05-006). The potential impact from existing sources of air toxics in the study area on the proposed uses was examined.

The *CEQR Technical Manual* indicates that an industrial source analysis may be warranted for projects that would result in new uses within 400 feet of manufacturing or processing facilities, or near a large emission source. A land use survey was conducted within a 400-foot radius of the development site, to identify potential air toxics emission sources. The land use survey did not identify any industrial/ manufacturing uses with exhaust stacks within 400 feet of the development site. Therefore, there would be no potential for significant adverse air quality impacts associated with industrial source emissions.

Mobile Sources

Based on the nature of this project, which includes considerable potential for increases in vehicle trips during events, and absence of new large building construction over the No-Action scenario; the analysis focused on the potential effect of mobile sources, evaluating the possible increments on localized CO and $PM_{2.5}$ levels.

According to the *CEQR Technical Manual* screening threshold criteria for this area of the City, if 170 or more project-generated vehicles pass through a signalized intersection within the project area of concern in any given peak period, there is a potential for mobile source air quality impacts for CO and a detailed analysis is required. For $PM_{2.5}$, the threshold for potential impacts is 23 heavy duty diesel truck (HDDV) or its equivalent in light duty vehicles (LDGT1), for principal and minor arterials, or expressways and limited access roads; which are the type of roads affected by this project .

The travel demand forecast and vehicle trip assignments conducted for the proposed action indicates that the number of project-generated vehicles would be above CEQR screening threshold values during the Pre and Post event for weekday and Saturday peak period(s) at the following intersections for CO:

TABLE 10-3
Intersections above the CEQR threshold screening for CO (170 project generated vehicles)

Site	Location
1	Shore PKWY NB off Ramp at Cropsey Ave
2	Shore PKWY SB off Ramp at Cropsey Ave
3	Shore PKWY SB off Ramp at Shell Rd
4	Neptune Ave & West 20th Street
5	Neptune Ave & West 19th Street
6	Neptune Ave & Cropsey Ave/West 17th Street
7	Neptune Ave & Stillwell Ave
8	Neptune Ave & West 8th St/Shell Road
9	Mermaid Ave & 17th Street
10	Surf Ave & West 21st Street
11	Surf Ave & West 20th Street
12	Surf Ave & West 19th Street
13	Surf Ave & West 17th Street
14	Surf Ave & West 8th Street

Therefore, an analysis of the peak hour volumes and increments over No-Action volumes was performed to identify the four most critical intersections for CO analysis. The five intersections with the highest volumes and increments were selected for detailed microscale CO modeling analysis. These are intersections 1, 2, 5, 6 and 8.

The intersection with the highest peak hour increments over No-Action volumes was used to determine if a $PM_{2.5}$ modeling analysis was required using the *CEQR Technical Manual Calculator* procedures. The project generated vehicles are all light duty passenger cars (no truck generated traffic) during the time periods evaluated.

The intersection at Site 6 (Neptune Ave & Cropsey Ave/West 17th Street), has the highest light duty vehicles increment (501 vehicles) for the weekday post concert time period. Using the *CEQR Technical Manual Calculator*; Site 6 resulted in 22 HDDV or its equivalent in LDGT1 (light duty vehicles), which is below the 23 HDDV screening criteria. All other intersections evaluated have a lower number of project generated vehicles.

As such, all intersections passed the screening criteria for $PM_{2.5}$, and no detailed particulate matter analysis is required.

The parking analysis (described in Chapter 9) examined the available capacity of seven off-street parking lots in the proximity of the project site in addition to on-street parking availability within a ½-mile radius of the project site. Its findings determined that the project generated parking demand would be accommodated by the off- and on-street parking capacity in the study area. Therefore, it is not expected that the proposed project would result in any significant parking impacts. As such a mobile source parking analysis was not warranted.

F. ANALYSIS OF MOBILE SOURCES

CO levels were estimated for existing conditions (2012) and for future (2016) conditions with and without the proposed project at intersections 1, 2, 5, 6 and 8.

Total estimated concentrations are to be compared to corresponding NAAQS to determine whether estimated impacts should be considered to be potentially significant. Also, the City requires, for the evaluation of potential CO and $PM_{2.5}$ impacts, the use of their interim guidance criteria to determine the potential for significant CO and $PM_{2.5}$ impacts.

Determining the Significance of Air Quality Impacts

Any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see Table 10-1) would be deemed to have a potential significant adverse impact. In addition, to maintain concentrations lower than the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas, threshold levels have been defined for certain pollutants. Any action predicted to increase the concentrations of these pollutants above the thresholds would be deemed to have a potential significant adverse impact, even in cases where violations of the NAAQS are not predicted.

De Minimis Criteria Regarding CO Impacts

NYCDEP has developed *de minimis* criteria to assess the significance of the incremental increase in CO concentrations that would result from proposed projects or actions, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant environmental impact. Significant increases of CO concentrations in New York City are defined as: (1) an increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No Build 8-hour concentration is equal to or between 8 and 9 ppm; or (2) an increase of more than half the difference between baseline (i.e., No-Action) concentrations and the 8-hour standard, when No-Action concentrations are below 8.0 ppm.

De Minimis Criteria Regarding $PM_{2.5}$ Impacts

NYCDEP has developed de minimis criteria to assess the significance of the adverse $PM_{2.5}$ impacts for projects, as set forth in the CEQR Technical Manual. The criteria described below reflect the recent revision in June 2013.

- Predicted increase of more than half the difference between the background concentration and the 24-hour standard; or

- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 μg/m 3 at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the

average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or

- Predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 µg/m 3 at a discrete or ground-level receptor location.

For projects undergoing SEQRA review NYSDEC has published a policy to provide interim direction for evaluating $PM_{2.5}$ impacts. This policy would apply only to facilities applying for permits or major permit modifications under SEQRA that emit 15 tons of PM_{10} or more annually. The policy states that such a project will be deemed to have a potentially significant adverse impact if the project's maximum impacts are predicted to increase $PM_{2.5}$ concentrations by more than 0.3 $\mu g/m^3$ averaged annually or more than half the difference between the background concentration and the 24-hour NAAQS on a 24-hour basis.

Carbon Monoxide (CO) Analysis Parameters

Receptors

The locations at which pollutant concentrations are estimated are known as "receptors." Following guidelines established by the EPA, receptors were located where the maximum concentration is likely to occur and where the general public is likely to have access. For this analysis, receptors were distributed along sidewalks near the five intersections selected for analysis.

Traffic Data

Traffic data for the air quality analysis were derived from traffic counts and other information developed as part of the traffic analysis, using CEQR guidelines. The time periods analyzed were pre- and post-event for weekdays and Saturdays. The pre-event analysis period is 6:30 to 7:30 PM for weekdays and 5:30 to 6:30 PM for Saturdays. The post-event analysis period is 10 to 11 PM for weekdays, and 9 to 10 PM for Saturdays. The details of the traffic forecasting process and assumptions are described in Chapter 9, "Transportation".

Vehicle Classification Data

Vehicle classification data required to determine composite emission factors were based on estimates for the following categories: light-duty gasoline vehicles (LDGVs), sport utility vehicles (SUVs), medallion taxis, light-duty trucks, heavy-duty trucks, and buses.

Vehicular Emissions

CO emission factors were estimated using the EPA's Motor Vehicle Emission Simulator MOVES2010B (EPA420-B-12-002b) June 2012. MOVES replaced EPA's previous MOBILE6, and NMIM models; and includes the effects of the recent changes to the CAFÉ standards and vehicle turnover.

Dispersion Analysis

Mobile source dispersion models are the basic analytical tools used to estimate pollutant concentrations from the emissions generated by motor vehicles as expected under given conditions of traffic, roadway geometry, and meteorology. CAL3QHC Version 2 is a line-source dispersion model that predicts pollutant concentrations near congested intersections and heavily traveled roadways. CAL3QHC input

variables include free flow and calculated idle emission factors, roadway geometries, traffic volumes, site characteristics, background pollutant concentrations, signal timing, and meteorological conditions. CAL3QHC predicts inert pollutant concentrations, averaged over a one-hour period near roadways. This model was used to predict concentrations at the intersections.

CAL3QHC predicts peak one-hour pollutant concentrations using assumed meteorology and peak-period traffic conditions. Different emission rates occur when vehicles are stopped (idling), accelerating, decelerating, and moving at different average speeds. CAL3QHC simplifies these different emission rates into the following two components:

- Emissions when vehicles are stopped (idling) during the red phase of a signalized intersection.
- Emissions when vehicles are in motion during the green phase of a signalized intersection.

The analyses followed the EPA's Intersection Modeling Guidelines (EPA-454/R-92-005) for CO modeling methodology and receptor placement. All major roadway segments (links) within approximately 1,000 feet from each analysis site (i.e., congested intersection) were considered.

Background Concentration

An 8-hour CO background concentration of 2.0 ppm, which was obtained from NYSDEC Air Quality Monitor at Queens College site, was added to modeled concentrations to account for the effects of other emission sources in the area.

Persistence Factor

Peak 8-hour mobile source CO concentrations were obtained by using a persistence factor of 0.70, as provided in the *CEQR Technical Manual*, to the maximum predicted one-hour values. This persistence factor takes account of the fact that over eight hours (as distinct from a single hour) vehicle volumes will fluctuate downward from the peak, vehicle speeds may vary, and meteorological conditions including wind speeds and wind direction will change to some degree as compared to the conservative assumptions used for the single maximizing hour.

G. MOBILE SOURCE ANALYSIS RESULTS

A summary of the results of the mobile source air quality modeling analysis for the Existing (2012) and Future (2016) without and with the proposed action is provided in Table 10-4 and Table 10-5, respectively. The values shown are the maximum CO concentrations estimated near analysis locations.

TABLE 10-4
Existing (2012) 8-Hour CO Levels

Analysis Site	8-hour CO Level (ppm)
Shore PKWY NB off Ramp at Cropsey Ave[1]	3.05
Shore PKWY SB off Ramp at Cropsey Ave[1]	3.05
Neptune Ave & West 19th Street[2]	3.05
Neptune Ave & Cropsey Ave/West 17th Street[2]	3.05
Neptune Ave & West 8th St/Shell Road	2.35

Notes: All values are the maximum estimated concentrations under all time periods considered and include an 8-hour background concentration of 2.0 ppm.
The reported levels are the highest of the four time periods analyzed.
Persistence Factor =0.70
NAAQS: CO = 9 ppm
[1] These two intersections were analyzed as one modeling site, as such the highest CO value is reported
[2] These two intersections were analyzed as one modeling site, as such the highest CO value is reported

TABLE 10-5
Future (2016) 8-Hour CO Levels With and Without the Proposed Action

Analysis Site	8-hour CO No-Action Level (ppm)	8-hour CO With-Action Level (ppm)	8-hour CO Increment (ppm)
Shore PKWY NB off Ramp at Cropsey Ave[1]	3.05	3.05	0.21
Shore PKWY SB off Ramp at Cropsey Ave[1]	3.05	3.05	0.21
Neptune Ave & West 19th Street[2]	3.05	3.12	0.42
Neptune Ave & Cropsey Ave/West 17th Street[2]	3.05	3.12	0.42
Neptune Ave & West 8th St/Shell Road	2.35	2.35	0.07

Note: All values are the maximum estimated concentrations under all time periods considered and include an 8-hour background concentration of 2.0 ppm.
The reported levels are the highest of the four time periods analyzed.
The reported increment is the largest difference between Action and No-action for any of the four time periods.
Persistence Factor =0.70
NAAQS: CO = 9 ppm
[1] These two intersections were analyzed as one modeling site, as such the highest CO value is reported
[2] These two intersections were analyzed as one modeling site, as such the highest CO value is reported

The results of this analysis are summarized as follows:

- CO levels would not exceed the 8-hour standard. The maximum estimated concentration of 3.12 ppm with the proposed project is below the NAAQS of 9 ppm.
- The NYCDEP CO *de minimis* criteria would not be exceeded, indicating that the increments due to the Proposed Project (0.42 ppm) would not have the potential to cause CO impacts (increments) that are considered to be significant (2.97 ppm).