III. EXISTING CONDITIONS, IMPACTS AND MITIGATION

M. Air Quality

M. Air Quality

Existing air quality conditions in the vicinity of the Project site and potential air quality impacts from the proposed Costco, including traffic, operations (building HVAC systems), and construction related air quality impacts were assessed and summarized in the following sections.

The air quality analysis conducted for the Project evaluated the potential ambient air quality impacts of the Project against the applicable standards for those pollutants for which a National Ambient Air Quality Standard (NAAQS) exists. Currently, the United States Environmental Protection Agency (U.S. EPA) and the New York State Department of Environmental Conservation (NYSDEC) enforce ambient air quality standards for the following seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), ozone (O_3) (which is controlled through limiting of nitrogen oxides (NO_x) and volatile organic carbon (VOC) emissions), and lead (Pb).

For the Costco Project, increases in emissions are associated with the increased vehicular traffic projected with the proposed Project. Emissions of CO, NO_x, VOC, and Pb are associated with mobile emission sources; whereas emissions of SO_2 and PM_{10} are associated primarily with stationary sources. Emissions of $PM_{2.5}$ are associated with both stationary and mobile sources. There are no major stationary sources emitting significant quantities of pollutants planned for this Project, thus vehicular emissions of CO, NO_x, VOC, Pb, and $PM_{2.5}$ were of primary concern.

? What about the heavy metals during construction Dust mitigation measures?

Carbon monoxide emissions from vehicles are associated with incomplete fuel combustion. Impacts from vehicles generally are localized and can cause elevated concentrations within a relatively short distance from heavily traveled traffic light signals and intersections. Consequently, it is appropriate to focus on CO emissions from motor vehicles on a localized or microscale basis.

Nitrogen oxides combine with hydrocarbons to produce ozone and other compounds in the atmosphere that can cause potential health effects including eye and lung irritation. Nitrogen oxides, generally nitric oxide (NO), are formed from high temperature fuel combustion and within a short time after release are converted to NO_2 in the atmosphere. Further complex reactions occur with VOC in the atmosphere to produce ozone. Since these reactions occur several hours after the initial NO_x release, the pollutant effects occur some distance downwind from the release. Thus, NO_2 impacts are normally studied within the context of a large-scale analysis (i.e., mesoscale analyses).

Emissions of VOC occur from many processes including stationary fuel combustion sources and process sources (e.g., dry cleaning, painting, and coating), as well as mobile sources. VOC emissions contribute to the formation of smog and when reacted with other chemicals (such as NO_x) in the atmosphere ultimately produce ozone and other photochemical oxidants. As discussed previously for nitrogen oxides, studies of VOC emissions usually entail evaluations of large areas accounting for many emission sources including vehicles (i.e., a mesoscale analysis).

There also exists the potential of fugitive VOC emissions as a result of gasoline fumes escaping during the dispensing process at the proposed Costco fueling station. The NYSDEC regulates gasoline vapor dispensing releases at gasoline stations through 6NYCRR Part 230. Gasoline dispensing sites in Westchester County are required to implement Stage II vapor recovery devices, which include special nozzles, hoses, adapters, and vapor piping designed to capture the gasoline vapors that are displaced from vehicle fuel tanks during refueling and return them to the bulk storage tanks. Thus, it is expected that only an insignificant amount of VOC emissions will occur at the proposed gas station due to the 6NYCRR Part 230 regulation requirements.

Up until the 1970s, lead emissions were associated with vehicular fuel combustion. At that time Federal clean air legislation prompted the conversion of lead-based gasoline to lead-free fuels, which began a systematic phase-out of the sale of leaded gasoline. Emissions of lead from motor vehicles have decreased significantly as a result of lead being phased out as an additive in motor vehicle fuels. The Federal Highway Administration (FHWA) has advised that microscale lead analyses for highway projects are not needed or warranted. Lead emissions from highways have been virtually eliminated as a result of the regulation and legislation prohibiting the manufacture, sale, or introduction into commerce of any engine requiring leaded gasoline since model year 1992, sale of only unleaded gasoline, and the requirement for reformulated gasoline to contain no heavy metals (such as lead).

In 1997, U.S. EPA established annual and 24-hour NAAQS for $PM_{2.5}$ for the first time. In 2006, U.S. EPA revised the 24-hour NAAQS for $PM_{2.5}$. $PM_{2.5}$ can be emitted as a primary pollutant directly from stationary and mobile sources and can be formed in the ambient air through secondary formation. Secondary $PM_{2.5}$ formation is a long-term process taking hours and days and is due to multiple gases (e.g., oxygen, water vapor, and SO_2) chemically reacting in the atmosphere. Because secondary $PM_{2.5}$ formation is a large-scale phenomenon, it would be studied within the context of a large-scale analysis (i.e., mesoscale analyses).

Primary $PM_{2.5}$ emissions from gasoline powered vehicles are negligible due to the low ash content of gasoline. Most of the $PM_{2.5}$ emissions from vehicle traffic are due to diesel powered vehicles. However, the proposed Project will have limited diesel vehicle traffic (mainly local deliveries). Furthermore, the U.S. EPA enacted regulations to control the emissions from diesel trucks that reduced the particulate matter emissions by 90 percent in 2007. Therefore, the Project will have negligible $PM_{2.5}$ impacts on the surrounding area due to the Project vehicular traffic.

1. Existing Conditions

The proposed Project site is located in Westchester County, NYSDEC Region 3, New York-New Jersey-Connecticut Air Quality Control Region (AQCR). The NYSDEC Bureau of Air Surveillance operates various air quality monitors for SO_2, PM_{10}, $PM_{2.5}$, NO_2, CO, O_3, and Pb. Presently, the following U.S. EPA classifications exist for the criteria pollutants at or near the Project site:

- SO_2 – better than national standards;
- PM_{10} – attainment;
- $PM_{2.5}$ – non-attainment;
- NO_2 – cannot be classified/better than national standards;
- CO – attainment;
- O_3 – moderate non-attainment; and
- Pb – not designated.

Locations of monitoring stations for NYSDEC's Region 3 and Region 2 (New York City) and for Connecticut were reviewed and sites were selected as representative of the Project area. Table III.M.1 presents the maximum annual and second highest short-term concentrations recorded during the latest available three years (2008-2010) at the selected stations for the specific criteria pollutants. In accordance with U.S. EPA and NYSDEC policy, second highest monitored concentrations, as opposed to maximum concentrations, are presented in Table III.M.1 for pollutants with short-term standards, since one exceedance of the standard is allowed per year. Also presented are the 3-year average 98th percentile 24-hour $PM_{2.5}$ and 1-hour NO_2 concentrations and the 3-year average 99th percentile 1-hour SO_2 concentrations consistent with the structure of those NAAQS standards.

The following text provides pollutant-specific discussions of these data, including ambient air concentrations with respect to the air quality standards.

<u>Sulfur Dioxide (SO_2)</u>
The closest, representative monitor for SO_2 is located at the NYSDEC Field Headquarters in Mt. Ninham, NY, approximately 13 miles northeast of the Project site. Data collected from 2008-2010 show the maximum 3-year average 99th percentile 1-hour average SO_2 concentration at 19 percent of the NAAQS, while data collected in the years 2008 through 2009 show the maximum annual concentration at 4 percent of the NAAQS.

<u>Inhalable Particulates (PM_{10})</u>
The nearest representative PM_{10} monitor to the site is located at the Norwalk Heath Department, approximately 25 miles southeast of the Project site. Data from 2008 show the maximum 24-hour PM_{10} level at 25 percent of the NAAQS.

<u>Fine Particulates ($PM_{2.5}$)</u>

Located in Newburgh, Orange County, New York is the closest $PM_{2.5}$ monitor to the proposed Project site. It is located approximately 17 miles northwest of the Project site. The monitor is located in a rural area mostly surrounded by residential areas comparable to the area surrounding the Project site. The maximum monitored 24-hour $PM_{2.5}$ concentration during the 2008-2010 time period was 70 percent of the 24-hour $PM_{2.5}$ NAAQS and the maximum monitored annual $PM_{2.5}$ concentration was 67 percent of the NAAQS.

Carbon Monoxide (CO)

The closest, representative monitor for CO is located at the New York Botanical Gardens at 200th Street and Southern Boulevard in Bronx County, approximately 30 miles south of the Project site. The New York Botanical Gardens site most likely provides conservative estimates of the background at the Project site because it is located in an urban area while the Project site is located in a rural/suburban area. Ambient CO concentrations are monitored for comparison against a one-hour and an eight-hour standard. Data collected in 2009 show the maximum 1-hour and 8-hour CO levels at 8% and 22% of the NAAQS, respectively.

Nitrogen Dioxide (NO_2)

Ambient NO_2 concentrations were also recorded at the New York Botanical Gardens site located in Bronx County. Data from 2008 show the maximum annual NO_2 level at 43 percent of the NAAQS and the maximum 1-hour value at 35% of the NAAQS.

Ozone (O_3)

Westchester County is part of a moderate ozone non-attainment area that encompasses most of the New York City metropolitan area. The closest representative ozone monitor is also located at the White Plains monitor in Westchester County. The maximum ozone level recorded at this site ranged from 147 to 161 ug/m^3 over the past three years. It is difficult to infer pollution trends from ozone data since the occurrence of this pollutant depends not only on a source of the precursor pollutants (NO_x and VOC), but also the driving mechanism (sunlight) that accelerates ozone formation. Relative consistency in regional NO_x and VOC concentrations may result in different resultant ozone concentrations depending on the particular meteorological pattern that was established during the May 1 through September 30 ozone season. In addition, long range transport of ozone and ozone precursors from upwind power plants in the Ohio Valley and Midwest may contribute to an increased background concentration in the Northeast.

Table III.M.1
Existing Background Concentrations of Criteria Pollutants

Pollutant	Averaging Period	NAAQS[a] (µg/m³)	Monitored Background Concentration[b,c] (µg/m³)			Monitor Location
			2008	2009	2010	
SO_2	1-Hour[d]	197	43	42	26	Mt. Ninham NYSDEC Field Headquarters Putnam Co., New York (ID 36-079-0005) (13 miles northeast of Project)
	3-Hour	1,300	34	**39**	NA	
	24-Hour	365	18	**21**	NA	
	Annual	80	**3**	**3**	NA	
PM_{10}	24-Hour	150	**37**	36	29	Norwalk Health Department, Fairfield Co., Connecticut (ID 90-013-3005) (25 miles southeast of Project)
$PM_{2.5}$	24-Hour[d]	35	26	21	27	Newburgh Orange Co., New York (ID 36-071-0002) (17 miles northwest of Project)
	Annual	15	**10**	8	8	
NO_2	1-Hour[d]	188	64	66	70	200th Street and Southern Blvd, Bronx Co., New York (ID 36-005-0133) (30 miles south of Project)
	Annual	100	**43**	41	NA	
CO	1-Hour	40,000	2,415	**3,220**	NA	200th Street and Southern Blvd, Bronx Co., New York (ID 36-005-0133) (30 miles south of Project)
	8-Hour	10,000	1,840	**2,185**	NA	
O_3	8-Hour	147	**161**	147	147	White Plains Westchester Co., New York (ID 36-119-2004) (17 miles south of Project)

[a]National Ambient Air Quality Standards.
[b]Highest-second highest short-term (1-, 3-, 8-, and 24-hour) and maximum annual average concentrations presented.
[c]Monitored background concentrations obtained from the U.S. EPA AIRData website (http://www.epa.gov/air/data/).
[d]The 98th percentile 24-hour $PM_{2.5}$ and 1-hour NO_2 values presented consistent with structure of those standards. The 3-year average 98th percentile $PM_{2.5}$ value is **24.4** ug/m³ and the three year average 1-hour NO_2 value is **66.7** ug/m³. The 3-year average 99th percentile SO2 value is **37** ug/m³.

Bold font identifies the greatest value over the 3-year period.
NA indicates that quality assured data from NYSDEC has not yet been reported for that pollutant and averaging period.

Lead (Pb)

With the phase-out of leaded motor vehicle fuels in the 1980s, the issue of ambient lead has remained only at locations proximate to certain industries (i.e., lead smelters). The closest representative NYSDEC monitor for lead is located at JHS126 (approximately 40 miles south of the project site in Kings, County, NY). This monitor is located in an urban population center and has recent, validated NYSDEC data. There is no annual standard for lead; the not-to-exceed ambient air quality standard for lead is 1.5 ug/m^3 on a quarterly basis. At the JHS126 site from 2008-2010, the maximum quarterly values recorded were only 10% of the ambient lead standard.

2. Potential Impacts

TRC performed an Air Quality Impact Study (Appendix F) for the proposed Project. The following text provides a description and summary of the analyses and methodology.

a. Microscale Analysis Methodology and Results

Microscale traffic air quality analyses are used by regulatory agencies to determine the air quality impact of proposed projects for comparison to the state and federal ambient air quality standards. For a traffic air quality study, information is needed regarding the street locations and geometry, traffic volumes, intersection traffic signal parameters, local meteorological conditions, and the location of receptors (areas where impacts will be calculated). To simplify the process, the NYSDOT has developed screening procedures to assist applicants in determining if a refined air quality modeling analysis is necessary for CO, the primary pollutant of concern from vehicular related emissions. According to the NYSDOT's Environmental Procedures Manual (EPM) (NYSDOT, 2001), a refined air quality modeling analysis is only required if the project characteristics do not meet certain criteria. These criteria provide a three-step screening procedure to determine if a refined air quality modeling analysis is required. These three steps are:

1. Level of Service (LOS) Screening

Intersections impacted by the project are generally excluded from air quality modeling when they have a LOS of A, B, or C. The LOS levels are as defined by the Highway Capacity Manual. Other factors such as the proximity to sensitive receptors (e.g., schools, hospitals, etc.) are also taken into consideration with intersections with a LOS of A, B, or C. If no LOS information is available, the intersection is deemed to have a LOS of D or worse.

2. Capture Criteria Screening

Intersections with a LOS of D, E, or F are then screened using the following five criteria:

a. Is there a 10 percent or more increase in traffic volume on affected roadways?
b. Is there a 10 percent or more reduction in the source-receptor distance?
c. Is there a 10 percent or more increase in vehicle emissions due to changes in posted speeds, operating conditions (i.e., number of hot/cold starts), vehicle types, etc.?

d. Is there any increase in the number of queued lanes (i.e., stoplight intersections)?
e. Is there a 20 percent reduction in speed where the average speed is already at 30 miles per hour or less?

If none of these criteria are met by the intersections with a LOS of D, E, or F, then no air quality modeling is required. However, if one or more of these criteria is met, then a volume threshold screening is necessary.

3. Volume Threshold Screening

The volume threshold screening analysis uses emission factors determined by project area-specific vehicle speed, thermal states, and emission control strategies to determine the volume threshold level. A wind speed of 1 meter per second and an atmospheric stability of E (slightly stable) are conservatively assumed in the development of the emission factors. Tables 3a through 3c in the NYSDOT EPM (NYSDOT, 2001) provide the volume thresholds based on the emission factors determined for each type of intersection. The volume thresholds establish traffic volumes below which a potential violation of the CO NAAQS is extremely unlikely. Therefore, as long as the project has peak hour traffic volumes that are less than the volume thresholds, a refined air quality modeling analysis is not necessary.

If an intersection fails these three criteria, then a refined air quality modeling analysis is required. Each of the intersections potentially affected by the proposed Project were analyzed for the 2013 Build Year using this three-step screening procedure. The following section details the microscale screening analysis for CO emissions conducted for the Project.

Microscale Screening Analysis Results

Sixteen intersections and three peak conditions were examined for the Costco Project. Note that, although not required by the NYSDOT's EPM (NYSDOT, 2001), all intersections controlled by stop signs were included in the microscale analysis. Thus, a total of 48 scenarios were screened to determine if a refined air quality analysis was required. The sixteen intersections studied were:

1. NYS Route 35/U.S. Route 202 and Lexington Avenue
2. NYS Route 35/U.S. Route 202 and Bear Mountain Extension
3. NYS Route 35/U.S. Route 202 and Pine Grove Court
4. Bear Mountain Extension and Stony Street
5. Stony Street and Old Crompond Road
6. NYS Route 35/U.S. Route 202 and Stony Street/BJ's-Staples Plaza Driveway
7. NYS Route 35/U.S. Route 202 and Old Crompond Road
8. NYS Route 35/U.S. Route 202 and Mohansic Avenue
9. NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramp
10. NYS Route 35/U.S. Route 202 and Taconic State Parkway NB On/Off Ramp

11. NYS Route 35/U.S. Route 202 and Strang Boulevard
12. NYS Route 35/U.S. Route 202 and NYS Route 132
13. NYS Route 35/U.S. Route 202 and Springhurst Street/Yorktown High School Driveway
14. NYS Route 35/U.S. Route 202 and Granite Springs Road/MESMS Driveway
15. NYS Route 35/U.S. Route 202 and Baldwin Road
16. NYS Route 35/U.S. Route 202 and NYS Route 118 and Commerce Street

Traffic data were estimated at each of the intersections for three peak time periods: weekday morning hour (AM), weekday afternoon/evening hour (PM) and Saturday. More information on the study intersections and inputs used to develop the traffic data is provided in the Traffic Impact Study (John Collins Engineers, 2011) in Appendix E of this DEIS.

LOS Screening Results

According to the 2013 traffic analysis, which was conducted using the HCS+ Version 5.3 Traffic Analysis Software, eight of the study intersections had a LOS of D or worse for the 2013 build condition. Table III.M.2 presents the 2013 build scenario LOS for each intersection for the Peak AM, Peak PM, and Peak Saturday time periods. As the table shows, there are eight intersections that were determined to have a LOS of C or better. Therefore, no further screening or refined analyses were necessary for these intersections, as the proposed Project will not threaten the 1-hour and 8-hour CO NAAQS at these locations for the 2013 Build Year. The eight intersections determined to have a LOS of D or worse were further analyzed using the capture criteria screening.

Capture Criteria Screening Results

The capture criteria screening has five criteria that must be met to avoid proceeding to the volume threshold screening or potentially conducting a refined air quality modeling analysis. If one of the criteria is not met, than a volume threshold screening analysis is necessary. Only those 2013 peak hour intersections that failed the LOS screening were examined using the capture criteria. The 2013 no build (Project is not constructed) traffic volumes were compared to the 2013 build traffic volumes to determine if there was a volume increase in traffic of more than 10%. As shown in Table III.M.3, three of the intersections with a LOS of D or worse for the build condition have traffic volumes increases of more than 10% when comparing 2013 no build and build traffic volumes. Thus, volume threshold screening analyses were necessary for these three intersections listed in Table III.M.3. Note that no further capture criteria screening analyses were conducted (e.g., is there more than a 10% decrease in source-receptor distance?) for these intersections since these studied intersections failed the first capture criterion (i.e., is there a 10% or more increase in traffic volumes?).

The additional five intersections that failed the LOS screening analysis (i.e., Intersections 1, 2, 7, 14, and 16) but passed the traffic volume capture criteria screening were further assessed for the other four capture criterion. For all five intersections there are no changes in the road width or distance to the nearest receptor locations; there will be no increase in vehicle emissions as posted speeds, operating conditions, and the vehicle mix are assumed to remain the same; no new queue lanes are being added; and the posted speed limits will not be changed. Therefore, no further screening analyses were required for these five intersections, as the proposed Project will not threaten the 1-hour and 8-hour CO NAAQS at these locations for the 2013 Build Year.

Table III.M.2
LOS Summary for Intersections

Intersection ID	Intersection	Estimated Time of Completion Year (2013)		
		Peak AM	Peak PM	Peak Saturday
1	NYS Route 35/U.S. Route 202 and Lexington Avenue (signalized)	**E**	**F**	**E**
2	NYS Route 35/U.S. Route 202 and Bear Mountain Extension (Unsignalized)	**F**	**F**	F
3	NYS Route 35/U.S. Route 202 and Pine Grove Court (Unsignalized)	B	B	B
4	Bear Mountain Extension and Stony Street (Unsignalized)	B	B	B
5	Stony Street and Old Crompond Road (Unsignalized)	A	A	A
6	NYS Route 35/U.S. Route 202 and Stony Street/BJ's-Staples Plaza Driveway (Signalized)	B	C	C
7	NYS Route 35/U.S. Route 202 and Old Crompond Road (Unsignalized)	**F**	**F**	**F**
8	NYS Route 35/U.S. Route 202 and Mohansic Avenue (Signalized)	C	**D**	**D**
9	NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramp (Signalized)	C	**D**	**E**
10	NYS Route 35/U.S. Route 202 and Taconic State Parkway NB On/Off Ramp(Signalized)	B	**D**	**D**
11	NYS Route 35/U.S. Route 202 and Strang Boulevard (Signalized)	C	C	C
12	NYS Route 35/U.S. Route 202 and NYS Route 132 (Signalized)	C	C	C
13	NYS Route 35/U.S. Route 202 and Springhurst Street/Yorktown High School Driveway (Signalized)	C	C	C
14	NYS Route 35/U.S. Route 202 and Granite Springs Road/MESMS Driveway (Signalized)	C	**E**	**D**
15	NYS Route 35/U.S. Route 202 and Baldwin Road (Signalized)	C	B	C
16	NYS Route 35/U.S. Route 202 and NYS Route 118 and Commerce Street (Signalized)	**D**	**E**	**D**

Bold values indicate intersection did not pass the LOS screening analysis. Source: John Collins Eng.

Table III.M.3
2013 Potential Traffic Volume Increases [a]

ID	Intersection	Movement	Peak AM			Peak PM			Peak Saturday		
			No-Build Condition Count	Build Condition Count	Percent Increase	No-Build Condition Count	Build Condition Count	Percent Increase	No-Build Condition Count	Build Condition Count	Percent Increase
1	NYS Route 35/U.S. Route 202 and Lexington Avenue (signalized)	East	1,258	1,265	0.6%	1,011	1,049	3.8%	1,166	1,229	5.4%
		West	850	853	0.4%	1,530	1,578	3.1%	1,193	1,271	6.5%
		South	414	416	0.5%	268	278	3.7%	338	354	4.7%
		North	34	34	0.0%	59	59	0.0%	43	43	0.0%
2	NYS Route 35/U.S. Route 202 and Bear Mountain Extension (Unsignalized)	East	1,498	1,507	0.6%	1,184	1,232	4.1%	1,367	1,444	5.6%
		West	564	568	0.7%	1,181	1,229	4.1%	1,013	1,091	7.7%
		South	317	317	0.0%	587	587	0.0%	348	348	0.0%
7	NYS Route 35/U.S. Route 202 and Old Crompond Road (Unsignalized)	East	1,559	1,570	0.7%	1,382	1,440	4.2%	1,546	1,639	6.0%
		West	623	628	0.8%	1,379	1,436	4.1%	1,182	1,276	8.0%
		South	5	5	0.0%	2	2	0.0%	4	4	0.0%
8	NYS Route 35/U.S. Route 202 and Mohansic Avenue (Signalized)	East	1,562	1,569	0.4%	1,383	1,441	4.2%	1,547	1,640	6.0%
		West	653	685	4.9%	1,510	1,690	**11.9%**	1,268	1,559	**22.9%**
		South	-	25	NA	-	320	NA	-	517	NA
		North	54	54	0.0%	132	134	1.5%	118	122	3.4%
9	NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramp (Signalized)	East	1,591	1,604	0.8%	1,455	1,635	**12.4%**	1,604	1,895	**18.1%**
		West	933	959	2.8%	1,533	1,670	8.9%	1,310	1,531	**16.9%**
		South	149	157	5.4%	109	152	**39.4%**	137	207	**51.1%**

ID	Intersection	Movement	Peak AM			Peak PM			Peak Saturday		
			No-Build Condition Count	Build Condition Count	Percent Increase	No-Build Condition Count	Build Condition Count	Percent Increase	No-Build Condition Count	Build Condition Count	Percent Increase
10	NYS Route 35/U.S. Route 202 and Taconic State Parkway NB On/Off Ramp(Signalized)	East	926	935	1.0%	1,163	1,283	**10.3%**	1,267	1,461	**15.3%**
		West	829	843	1.7%	946	1,023	8.1%	1,036	1,160	**12.0%**
		North	203	214	5.4%	1,044	1,104	5.7%	438	535	**22.1%**
14	NYS Route 35/U.S. Route 202 and Granite Springs Road/MESMS Driveway (Signalized)	East	855	860	0.6%	1,041	1,104	6.1%	1,047	1,148	9.6%
		West	625	634	1.4%	1,078	1,126	4.5%	942	1,020	8.3%
		North	313	313	0.0%	109	109	0.0%	109	109	0.0%
		South	571	576	0.9%	302	316	4.6%	429	453	5.6%
16	NYS Route 35/U.S. Route 202 and NYS Route 118 and Commerce Street (Signalized)	East	944	946	0.2%	821	852	3.8%	950	999	5.2%
		West	460	462	0.4%	754	766	1.6%	629	649	3.2%
		North	432	435	0.7%	826	841	1.8%	748	771	3.1%
		South	751	752	0.1%	644	649	0.8%	629	637	1.3%

[a]For intersections, study conditions, and peak time periods with a LOS of D or worse.
Source: John Collins Engineers.

Volume Threshold Screening Results

The volume threshold screening analysis compares the project traffic volumes for each intersection to the traffic volume thresholds below which a violation of the 1-hour and 8-hour CO NAAQS is extremely unlikely. Therefore, no refined air quality analysis is required for intersections with projected traffic volumes below the volume threshold determined using the NYSDOT's EPM (NYSDOT, 2001) procedures. Details on the volume threshold screening analysis for each intersection that failed the first two steps of the screening procedure are presented in this section.

Following the guidance provided in the NYSDOT's EPM (NYSDOT, 2001), CO emission factors for both free flow links and queue links were calculated for each approach and used to determine the peak hour traffic volume threshold with Tables 3a-3c of the EPM (NYSDOT, 2001). Determining the CO emission factor for each approach requires an estimate of the vehicle distribution, vehicle speeds, roadway-type determination, and MOBILE6 CO emission factors for the Westchester County area (Region 8).

Using the roadway type, the vehicle speed, and the model year (2013), the NYSDOT's Mobile6.2 CO Emission Factor Tables Look Up and Calculation Program for Microscale Analysis was used to determine the appropriate CO emission factors for the free flow and queue links. Using the maximum free flow CO emission factor and the maximum queue CO emission factors, the peak hour traffic volume threshold for any intersection approach was determined with Table 3c for signalized intersections from the NYSDOT's EPM (NYSDOT, 2001). A comparison of these traffic volume thresholds to the project traffic volumes for each intersection approach is presented in Table III.M.4. The table shows that the projected traffic volumes for the 2013 peak weekday AM, weekday PM, and Saturday time periods are less than the volume thresholds for each intersection approach. Thus, none of the study intersections require a refined microscale air quality analysis as the traffic volumes are below the volumes at which there is an extremely unlikely chance for the potential violation of the CO NAAQS.

Microscale Screening Summary

A screening level air quality analysis for the intersections directly affected by the proposed Project was conducted and showed that a refined air quality modeling analysis is not required. Thus, using the screening methodology presented in the NYSDOT EPM (NYSDOT, 2001) indicates that it is highly unlikely that the Project will violate the CO NAAQS.

Table III.M.4
Projected 2013 Peak Hour Traffic Volumes and NYSDOT Volume Thresholds

ID	Intersection	Movement	NYSDOT Volume Threshold (veh/hr)	Projected Peak Hour Traffic Volume (veh/hr)		
				Peak AM	Peak PM	Peak Saturday
8	NYS Route 35/U.S. Route 202 and Mohansic Avenue (Signalized)	East	4,000	1,569	1,441	1,640
		West	4,000	685	1,690	1,559
		South	4,000	25	320	517
		North	4,000	54	134	122
9	NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramp (Signalized)	East	4,000	1,604	1,635	1,895
		West	4,000	959	1,670	1,531
		South	4,000	157	152	207
10	NYS Route 35/U.S. Route 202 and Taconic State Parkway NB On/Off Ramp(Signalized)	East	4,000	935	1,283	1,461
		West	4,000	843	1,023	1,160
		North	4,000	214	1,104	535

b. Parking Facilities Air Quality Analysis

Air quality impacts associated with the proposed parking lot at the Project were also studied as part of the DEIS for the completion year of 2013. A single 610 space outdoor parking area is proposed for the Project. The primary source of concern for parking lot is CO resulting from large concentrations of vehicles, and therefore, only the worst-case condition (peak hour traffic volumes entering and exiting the parking areas) were evaluated. If the peak traffic hour does not cause a violation of the NAAQS, then the lower traffic volumes would not cause violations of the NAAQS.

Modeling Methodology

The air quality analysis for the parking area was conducted following the guidance provided in the New York City Environmental Quality Review (CEQR) Technical Manual: Appendices (CEQR, 2010). It was conservatively assumed that vehicles entering and exiting the parking facilities would idle for one minute and travel at 5 miles per hour (mph) through the parking areas. The idling time accounts for individuals warming up their vehicle during cold weather and other traffic/parking queues while entering and exiting the parking facilities. Engines of the vehicles entering the parking facilities were assumed to be in hot stabilized mode (warm or hot engines), while the vehicles exiting the parking facilities were assumed to be in cold stabilized mode (cold engines).

Although most vehicles will only travel portions of a parking lot before locating a parking space, it was conservatively assumed that all vehicles would travel the perimeter of the parking lot before locating a parking space and/or leaving the parking facility. Emissions for vehicles in the parking lot were calculated using the NYSDOT's Mobile6.2 CO Emission Factor Tables Look Up and Calculation Program for Microscale Analysis and MOBILE6 Emission Factor Look Up and Calculation Program for Regional, Mesoscale, and Congestion Mitigation and Air Quality (CMAQ) Projects - Part B. A roadway type of "rural collector/local" was used with the Mobile6.2 CO Emission Factor Tables Look Up and Calculation Program for Microscale Analysis to determine the CO emissions from the vehicles entering and traveling through the parking lot (warm/hot engines) at 5 mph and with the MOBILE6 Emission Factor Look Up and Calculation Program for Regional, Mesoscale, and (CMAQ) Projects - Part B to determine the CO emissions from vehicles idling and leaving the parking lot (cold engines) at 5 mph.

The detailed methodology for calculating air quality impacts due to the parking lot is presented in the CEQR Technical Manual: Appendices (CEQR, 2010). Traffic volumes entering and exiting the lots were estimated based on the volumes presented in the Traffic Impact Study (John Collins Engineers, 2011) for the Peak AM, Peak PM, and Peak Saturday time periods for the completion year 2013. Comparing the 2013 Peak AM, Peak PM, and Peak Saturday time period traffic volumes shows that the Peak Saturday time period has the highest traffic volumes entering/exiting the Project site. Thus, the parking lot was analyzed as a representative worst case utilizing peak Saturday time period traffic volumes entering and exiting the Project development.

The equations used to calculate the maximum CO concentrations due to the parking lots yield maximum 1-hour CO concentrations. To convert the maximum 1-hour CO concentration to a maximum 8-hour concentration the NYSDOT and U.S. EPA recommended conversion factor of 0.7 was applied.

Future Background CO Concentrations

For comparison to the NAAQS, the calculated CO concentrations due to the proposed parking lot must be summed with the future background CO concentrations in the area for the estimated completion year. The future background CO concentrations account for the other sources of CO emissions (e.g., industry) in the local area. The background 1-hour and 8-hour CO concentrations for 2013 were determined following the procedures provided in the NYSDOT's EPM (NYSDOT, 2001).

Parking Lot Modeling Results

Results of calculating the maximum 1-hour and 8-hour CO concentrations due to the parking lot indicate that the 1-hour and 8-hour CO NAAQS will not be threatened or exceeded due to the Project parking areas. Table III.M.5 present the maximum calculated 1-hour and 8-hour CO concentrations from the parking area including the calculated future 2013 background concentrations and the calculated impacts from adjacent traffic near to the proposed Parking facilities (discussed in the next section).

Calculations, along with the assumptions, variable inputs, and emission rates, for the parking lot air quality analyses are shown in the Air Quality Impact Study (TRC, 2011) located in Appendix F. The following section details the methodology and results of the refined traffic analysis for traffic adjacent to the proposed Parking facilities.

Table III.M.5
Parking Area Maximum CO Concentrations

Source	CO Concentration (ppm)
1-Hour CO Concentration (ppm)	
Project Parking Lot	1.0
Adjacent Street Traffic (CAL3QHC)	1.2
Calculated 2013 Background	2.6
Parking Area Total[a]	4.8
NAAQS	35.0
8-Hour CO Concentration (ppm)	
Project Parking Lot	0.7
Adjacent Street Traffic (CAL3QHC)	0.8
Calculated 2013 Background	1.8
Parking Area Total[a]	3.3
NAAQS	9.0

[a]Parking Area Total = Project Parking Lot + Adjacent Street Traffic + 2013 Background Concentration
Source: TRC

c. Refined Adjacent Traffic Air Quality Analysis

As determined in the microscale screening analysis, a refined air quality modeling analysis per NYSDOT EPM (NYSDOT, 2001) guidance is not required. Guidance provided in the CEQR Technical Manual: Appendices (CEQR, 2010) indicates that parking area air quality analyses should include CO contributions calculated for adjacent street traffic. Considering that the Project includes proposed outdoor parking lots and results in significant increases in local traffic, a refined traffic analysis was conducted for those intersections and roadways adjacent to the proposed Project parking lot.

Thus, a refined air quality modeling analysis was performed for the two adjacent locations to the proposed outdoor parking lot, which include the signalized intersections of NYS Route 35/U.S. Route 202 and Mohansic Avenue and the intersection of NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramps. The refined analysis was conducted following the procedures identified in the NYSDOT's EPM (NYSDOT, 2001). Further guidance was obtained from the

U.S. EPA's Guideline for Modeling Carbon Monoxide from Roadway Intersections (U.S. EPA, 1992) and User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections (U.S. EPA, 1995).

The refined air quality modeling analysis used NYSDOT and U.S. EPA approved models and conservative assumptions to develop conservative estimates of the air quality impacts associated with the 2013 Peak Saturday traffic volumes traveling adjacent to the proposed Project (i.e. the peak hour associated with the greatest number of vehicles travelling into and out of the parking lot). The following section details the models and modeling methodology used in the analysis, and the results of the refined air quality analysis.

Model Selection and Inputs

The NYSDOT and U.S. EPA approved CAL3QHC (version 2.0) model was used to calculate the CO concentrations from the traffic volumes around the signalized intersections of NYS Route 35/U.S. Route 202 and Mohansic Avenue and the intersection of NYS Route 35/U.S. Route 202 and Taconic State Parkway SB On/Off Ramps. The CAL3QHC model is designed to calculate air pollutant concentrations near highways, arterial streets, and queued intersections. The model permits the estimation of total air pollutant concentrations from both moving and idling vehicles. CAL3QHC requires inputs for roadway geometry, receptor locations, meteorological data, vehicular emission rates, signal timing data, and information describing the configuration of the intersections being modeled.

The CAL3QHC model is based on the CALINE-3 model, which is used to evaluate free flow non-intersection arterials and highways. An additional algorithm was incorporated into CALINE-3 to estimate queued intersection concentrations. These models use Gaussian (or normal) dispersion characteristics to estimate receptor concentrations from line sources. This assumes that concentrations downwind from a source will be distributed in accordance with a statistical normal (or Gaussian) distribution.

The inputs required for the CAL3QHC model are summarized in the following sections.

Free Flow and Queue Link Geometry

Thirty-eight free flow links and thirteen queue links were included in the refined air quality analysis. Free flow link lengths were generally determined from the lesser of the distance from the modeled intersection/movement to the midpoint of the next closest intersection for each travel direction or the straight-line distance around a curve in the roadway. Queue link lengths for turn lanes were based on the length of the turn lane, while queue link lengths for through lanes were assumed to cover the entire length of the through lane included in the analysis (i.e., equivalent to the free flow length).

Widths for the free flow links were determined based on the lane(s) width plus a 10-foot mixing zone on each side of the roadway, while queue link widths were based on the lane(s) width consistent with EPM (NYSDOT, 2001) guidance. Details for the free flow and queue links included in the refined analysis are presented in the Air Quality Impact Study (TRC, 2011) located in Appendix F.

Vehicle Emissions Data

Emission rates for the vehicles traveling on the free flow links and idling at the modeled intersections (i.e., queued) were required for input to the CAL3QHC model. The vehicle emission rates were calculated using the NYSDOT's CO Emission Factor Look Up Program for Microscale Analysis located on the NYSDOT website.

This program develops emission rates based on the New York State region, the roadway type, the vehicle speed, and the model year. The Principal/Minor Arterial MOBILE6 CO Emission Factors were used for the vehicles traveling on NYS Route 35/U.S. Route 202 and the Taconic State Parkway SB On/Off Ramps, while the Collector and Local Road MOBILE6 CO Emission Factors were used for the vehicles traveling on all other roadways included in the analysis. Printouts from the NYSDOT program for each of the links are included in the Air Quality Impact Study (TRC, 2011) located in Appendix F.

Meteorological Parameters

The CAL3QHC model calculates CO concentrations at each receptor based upon predetermined meteorological conditions. These meteorological conditions include variables such as wind speed, wind direction, and atmospheric stability. To determine the maximum modeled CO concentrations, the NYSDOT EPM (NYSDOT, 2001) recommends using a wind speed of 1 meter per second.

Five degree increments of wind direction ranging from 0 degrees (north) to 355 degrees were modeled as required in the NYSDOT's EPM (NYSDOT, 2001). The maximum modeled 1-hour CO concentration was less than 8.0 ppm, thus no refinement of the wind directions was necessary.

A mixing height of 1,000 meters and a surface roughness length of 321 centimeters was input to the CAL3QHC model. The NYSDOT's EPM (NYSDOT, 2001) recommends a 1,000 meter mixing height for all CAL3QHC analyses. Since the proposed Project will consist of retail the surface roughness height was based on the "central business district" land use.

Modeled Receptors

Receptors were input to the CAL3QHC model to determine the CO concentrations near the modeled intersections and roadways. The receptors were located according to the guidance provided in the NYSDOT EPM (NYSDOT, 2001). Specifically, receptors were placed at the corners of the modeled intersections and every 25 meters from the study intersection to the midpoint of the next closest intersection. Receptors were modeled with a height of 1.8 meters (6 feet) and placed 3.01 meters from the edge of the roadways that comprise the intersection to avoid being located in the mixing zone of the traveling vehicles. A total of 48 receptors were used in the refined air quality modeling analysis.

CO Microscale Air Quality Analysis Results

Results of the refined air quality analysis indicate that the proposed Project will not cause an exceedance of the 1-hour or 8-hour CO NAAQS. The maximum modeled 1-hour CO concentration for the Peak Saturday time period for the ETC year (2013) was determined to be 1.2 ppm. The maximum modeled concentration occurred at receptor 5, which is located adjacent to the Mobil gas station across NYS Route 35/U.S. Route 202 from the Proposed parking lot.

Converting this 1-hour concentration to the 8-hour concentration using the persistence factor (0.7) yields a maximum modeled 8-hour CO concentration of 0.8 ppm. Summing these 1-hour and 8-hour concentrations with the appropriate background concentrations and calculated parking lot concentrations results in total 1-hour and 8-hour CO concentrations of 4.8 ppm and 3.3 ppm, respectively. Both of these concentrations are well below their NAAQS of 35 ppm and 9 ppm, respectively.

d. Building HVAC Systems Air Quality Analysis

The Project will utilize electric and/or natural gas fired combustion equipment to provide for the heating, ventilation and air conditioning (HVAC) requirements for the proposed Costco warehouse store. As such, the Project has the potential for operational combustion emissions of CO, NO_x, SO_2, and $PM_{10}/PM_{2.5}$. Appropriate NYSDEC air permits will be obtained for all relevant equipment, if necessary. Short-term and annual criteria pollutant emission estimates for the Project indicate that the Project will not be classified as a major air emitting source pursuant to U.S. EPA and NYSDEC air permitting regulations. Furthermore, based upon the expected HVAC heat input requirements, the Project would likely not be required to obtain a NYSDEC air permit due to the equipment meeting the NYSDEC Part 201 air permit exemption criteria for combustion equipment (i.e., the heat input is less than ten million Btu per hour). Thus, per NYSDEC air rules, the Project would be considered a minor source of operational air emissions and refined air quality dispersion modeling of the Project would not be necessary. However, screening modeling of the Project HVAC systems has been prepared to demonstrate the overall Project CO air quality impacts including the proposed parking lots, adjacent street traffic, and HVAC systems are less than the CO NAAQS.

Heat and Hot-Water Energy Requirements and Air Emissions

Because designs for the HVAC systems have not been completed for this specific Costco, the short-term and annual energy requirements for the proposed electric and/or natural gas fired HVAC units were based upon the requirements for a prototypical Costco. A typical Costco will have on the order of 6.8 million Btu per hour of heat input (i.e., hourly fuel usage) to provide for HVAC requirements.

Criteria Pollutant Emission Calculation Methodology

Potential criteria pollutant emissions from the Project based upon natural gas combustion in the HVAC units are based upon U.S. EPA's AP-42 document, Section 1.4, "Natural Gas Combustion" in the External Combustion Sources chapter. The AP-42 emission factors in pounds per mmBtu (lb/mmBtu) were multiplied by the Project's energy requirement in units of million British thermal Units per hour (mmBtu/hr) to estimate the potential pound per hour (lb/hr) emission rate. Details of the HVAC system emission calculations are shown in the Air Quality Impact Study (TRC, 2011) located in Appendix F.

Stationary Source Air Quality Modeling Methodology

Air quality modeling for the HVAC systems was conducted using the NYSDEC and U.S. EPA approved SCREEN3 (version 96043) dispersion model to estimate the Project CO impacts. Inputs to the SCREEN3 model were developed based on the current design information for the Project; however, no specific vendor data for the HVAC were available. Therefore, conservative source input assumptions were made to estimate the air quality concentrations due to the proposed HVAC units.

The stack height of each unit was assumed to be nine (9) feet above the roof top height of the Costco, while the stack exhaust diameter was assumed to be 3 inches (0.25 feet). The exhaust was assumed to have an exit temperature of 250 degrees Fahrenheit while the exhaust velocity was calculated utilizing the U.S. EPA's F-Factors along with the maximum fuel rate. The exit temperature is typical for a natural gas fired unit as most natural gas-fired HVAC unit normal operation exit temperatures will be in the 250-275 degrees F range.

Model Selection

The SCREEN3 model was utilized for simple terrain (i.e., terrain below top of stack) ground-level impacts. SCREEN3 is a Gaussian plume model that can be used to model a single continuous source for short-term averaging periods assuming no chemical transformation or other removal processes, such as wet and dry deposition, affect the plume. Worst-case meteorological conditions based on a range of stability classes and wind speeds are used in the SCREEN3 model to determine the maximum ground-level concentrations.

SCREEN3 was run using a unit emission rate of 1 gram per second (g/s). With a unit emission rate, SCREEN3 will output downwind unit concentrations in units of micrograms per cubic meter (µg/m3) per g/s emitted. The unit concentrations were then multiplied by the source specific emission rates in units of g/s to calculate the source-specific maximum-modeled concentrations for each pollutant. The SCREEN3 model calculates 1-hour simple terrain concentrations. Thus, the SCREEN3 1-hour results were scaled to 8-hour averaging period using a scaling factor of 0.7 in accordance with SCREEN3 guidance.

Meteorological Data

The simple terrain screening analysis was based on the screening meteorology programmed into the SCREEN3 model that examines a wide range of stability classes and wind speeds to identify a "worst-case" meteorological condition that results in maximum concentrations. A total of 54 combinations of wind speed and direction were used in the SCREEN3 model to identify the maximum-modeled simple terrain concentrations.

Receptor Grids

The SCREEN3 model was run with receptors starting 25 meters from the stack location and extending to a distance of 5 kilometers (km). The model was run with the SCREEN3 automated distance array option that includes receptors spaced at 100 meters out to a distance of 5 km. When utilizing this option, SCREEN3 determines the location of the maximum-modeled concentration to the nearest meter.

Modeling Results

Modeling was conducted to assess the air quality impacts of the proposed HVAC system components of the Project and demonstrate that they would not cause or contribute to an exceedance of the CO NAAQS. Using the overall maximum-modeled 1-hour unit concentration, the averaging period-specific concentrations were calculated. The results of the HVAC system modeling yield maximum 1-hour CO concentrations of 0.09 ppm and maximum 8-hour impacts of 0.06 ppm.

e. Overall Project CO Results

The HVAC system exhausts will have a common pollutant with the traffic in CO. Thus, to determine the overall Project air quality concentrations for CO, the sum of the HVAC system CO concentrations were added to the CO concentrations determined in the parking lot analysis, the refined adjacent street traffic analysis, and the 2013 background concentration. Summing these four CO concentrations yields a maximum 1-hour CO concentration of 4.9 ppm and a maximum 8-hour CO concentration of 3.4 ppm. These CO concentrations are well below the 1-hour CO NAAQS of 35 ppm and the 8-hour CO NAAQS of 9 ppm. Thus, the overall Project's CO concentration will comply with the CO NAAQS.

3. Proposed Mitigation

a. Temporary Construction Related Emissions

Construction-related emissions can be classified into two distinct sources: criteria pollutant emissions from private and construction vehicle internal combustion engines; and fugitive dust that results from vehicle movement over paved and unpaved roads, material handling, earth moving/grading, etc.

Construction-related emissions from the two types of sources vary with the types of activities associated with the three typical phases of a construction project. The U.S. EPA, in Section 13.2.3 of its AP-42 emission factor guidance (U.S. EPA, 1995), identifies the following three phases of a heavy construction project with respect to construction-related emissions:

Phase 1: Debris Removal;
Phase 2: Site Preparation; and
Phase 3: General Construction.

AP-42 includes the following activities under each phase:

Phase 1: Debris removal of any man-made or natural obstructions can include blasting, mechanical removal, material loading/unloading, and vehicular traffic over unpaved areas;

Phase 2: Site preparation is grading and soil stabilization, and cut and fill activities which can include movement of large earth moving equipment over disturbed surfaces, material/aggregate loading and unloading, and vehicular traffic over unpaved areas; and

Phase 3: General construction is foundation work, structural steel, exterior/interior operations, piping/electrical work, and final landscaping.

Potential criteria pollutant (engine) and fugitive dust emissions associated with the construction are discussed below.

Criteria Pollutant Emissions from Private and Construction Vehicle Internal Combustion Engines

Vehicular criteria pollutant emissions can occur as a result of traffic and/or added trip length from private vehicles that encounter roadway diversions or detours associated with the Project, as well as from emissions from the actual construction vehicles. If the diversions and detours are significant, or impact a large number of private vehicles, an air quality analysis is recommended by the regulatory agency. For the construction of the Project, there are no anticipated road closures or diversions.

Therefore, an air impact analysis for this aspect of construction (i.e., private vehicles) was not required.

Construction vehicles will also emit criteria air pollutants. However, impacts from construction vehicles are expected to be minimal for several reasons including: proper maintenance of construction equipment, controlling unnecessary idling of equipment, and providing sufficient parking for construction workers. Furthermore, according to the NYSDOT's Environmental Procedures Manual (NYSDOT, 2001), the emissions from construction vehicles are "temporary" and "self-correcting once the project is completed". Therefore, emissions from private and construction vehicles will be minimal.

Fugitive Dust

Several measures may be employed during construction activities to ensure that dust suspension is kept low. These include:

- Keeping construction vehicle speed low to reduce dust suspension;
- Covering trucks carrying soils and other dry materials;
- Covering exposed stockpiles of soil and gravel to eliminate wind-driven dust suspension, or as an alternate, minimizing the height of these piles;
- Periodic washing of paved surfaces during dry periods as a means to suppress dust suspension;
- Applying water, as necessary, during concrete slab removal and crushing;
- The application of water on stockpiles and unpaved roads during dry periods as a means to suppress dust suspension; and
- Final grading and landscaping of exposed areas as soon as possible.

The NYSDOT states that such measures have "proved effective" in limiting fugitive dust during the construction period.

Based on low expected incidence of heavy construction activities, the good maintenance of the construction vehicles, and the use of previously stated measures to control dust suspension, construction-related air quality impacts associated with the Project will be minimized to ensure the health and safety of the construction workers and the surrounding community.

b. Project Related Traffic and Stationary Sources

An air quality assessment was prepared to evaluate the potential impacts of the Project on air quality, including a review of offsite street traffic emissions, parking lot traffic emissions, and emissions from the Project stationary sources. The procedures used to perform this air quality assessment followed the methodologies approved and recommended by the U.S. EPA, NYSDOT, and NYSDEC.

A number of potential sources of air quality emissions associated with the proposed Project have been reviewed to assess the potential for Project related impacts on air quality. These possible sources of emissions associated with the Costco development included:

- A variety of traffic scenarios, both with and without the proposed Project, and with various improvements to the roadway network near to the Project site;
- Outdoor parking lot;
- Stationary Sources (i.e., HVAC units); and
- Construction activities.

Based upon the results of the aforementioned air quality assessments, the following conclusions can be made:

- Traffic associated with the Project is not expected to result in significant impacts to air quality in the area, based upon the number of analyses of Project related traffic data and the implementation of a number of roadways improvements and traffic congestion mitigation measures recommended by the traffic engineer (i.e., John Collins Engineers). The roadway improvements and signal timing improvements recommended by the traffic engineer result in reduced idling times, which serves to improve the local air quality surrounding the Project traffic.
- The results of modeling CO emissions from vehicles entering and exiting the parking lot, combined with the emissions from adjacent roadway traffic is not expected to result in exceedances of any CO ambient air quality standards.
- The vehicle fueling station will utilize Stage II vapor recovery devices, which include special nozzles, hoses, adapters, and vapor piping designed to capture the gasoline vapors that are displaced from vehicle fuel tanks during refueling and return them to the bulk storage tanks.
- Stationary source equipment (i.e., HVAC units) associated with the Project likely will not be subject to NYSDEC air permitting requirements and would not be expected to be major sources of emissions. Appropriate air permits will be obtained for this equipment, if necessary, which would be expected to conform to all applicable air permitting requirements and anticipated to result in insignificant air quality impacts.
- Construction activities have the potential to generate fugitive dust emissions and also emissions from the use of the construction equipment. Based on low expected incidence of heavy construction activities, the good maintenance of the construction vehicles, and the use of previously stated measures to control dust suspension, construction-related air quality impacts associated with the Project will be minimized to ensure the health and safety of the construction workers and the surrounding community.

The results of the assessments indicate that the Project will not contravene or significantly contribute to the contravention of a NAAQS based upon a review of Project related traffic, construction activities, and Project related stationary air emission sources.