4.3 AIR QUALITY AND GLOBAL CLIMATE CHANGE

This section presents existing air quality conditions in the project area and analyzes the potential air quality impacts associated with implementation of the proposed Altamont Motorsports Park project. This section also provides a description of the regulatory framework for air quality management on a federal, state, regional, and local level. In addition, this section will evaluate the types and quantities of air emissions that would be generated on a temporary basis due to project construction and over the long term due to the project's operation.

The analysis of air quality impacts is based on air quality regulations administered by the US Environmental Projection Agency (US EPA), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD) with each agency responsible for different aspects of the proposed project's activities. The roles of these agencies are discussed in detail in the Regulatory Considerations section. Other sources used in this assessment include the *BAAQMD CEQA Guidelines* [for] *Assessing the Air Quality Impacts of Projects and Plans* established by the BAAQMD in December 1999.

Air quality impacts resulting from the implementation of the proposed project fall into two categories: short-term impacts due to construction activities and long-term impacts from the day-to-day operations of the proposed project. Construction activities would impact air quality on a local level due to fugitive dust PM_{10} and other criteria pollutant emissions associated with heavy-duty construction equipment exhaust. As mentioned below, compliance with standard control measures specified in the *BAAQMD CEQA Guidelines* is considered sufficient to reduce construction impacts to a less than significant level.

4.3.1 ENVIRONMENTAL SETTING

The proposed project is located in the eastern portion of Alameda County, 10 miles east of the City of Livermore and approximately 7 miles west of the City of Tracy. The project site is approximate 83 acres and is located immediately south of the Interstate 580/Interstate 205 interchange. Geographically, the project site is located in the San Joaquin Valley; however, this portion of the San Joaquin Valley is within Alameda County, which is part of the San Francisco Bay Area Air Basin (SFBAAB). Air quality within the SFBAAB is regulated by the BAAQMD. The following section provides a general discussion of air quality conditions in the region and the local environmental that influence air quality.

4.3.1.1 Topography

The project site, located in the eastern portion of Alameda County, is physically located in the San Joaquin Valley (the Valley). The Coast Ranges, which have an average elevation of 3,000 feet, provide the western boundary of the Valley. To the east, the Sierra Nevada forms the eastern boundary of the

San Joaquin Valley with peaks reaching over 14,000 feet. The Valley's southern boundary is created by the Tehachapi Range. Dispersion of pollutants generated within the Valley is impeded by the presence of the surrounding mountain ranges. The Central Valley opens up to the sea at the north end at the Carquinez Strait.

4.3.1.2 Climate and Meteorology

The climate of the Valley is characterized as an "inland Mediterranean" climate with dry and warm summers. Climate within the Valley is largely controlled by the presence of the Pacific High Pressure Cell, which is located in the northern Pacific Ocean off the coast of California. During summertime, the High Pressure Cell deflects incoming storms from traveling inland into the Valley. As a result, the Valley receives little precipitation during these months. Summers in the Central Valley are characterized by high temperatures due to its inland position. The project region (i.e., Tracy) has average summertime high temperatures of 91 degrees Fahrenheit (°F). Beginning in the fall and continuing through the winter, the High Pressure Cell weakens and resides off the coast of Southern California. The absence of the High Pressure Cell allows storms to travel inland and reach the Valley due to the lack of airflow and containment by the mountains. Temperature, winds, and rainfall become more variable during the winter months with the frequent presence of dense fog. Winter weather patterns include periods of stormy weather with rain and gusty winds. The average wintertime low temperature in the region (i.e., Tracy) is 57°F. The vast majority of precipitation in the Valley occurs between the months of November and April. The Valley floor receives an average annual precipitation of approximately 8 inches.

The meteorology of the Valley is dictated by the surrounding mountain ranges. The Valley is enclosed to the west by the Coast Mountain range with peaks reaching heights of 5,020 feet. To the east, the Sierra Nevada range impedes air dispersion with peaks reaching over 14,000 feet. Wind movement within the Valley typically flows from northwest to southeast. Air enters into the Valley through the San Joaquin River Delta; however, the presence of mountainous barriers restricts the dispersion and flow of air and subsequent pollutants. Inversion layers further inhibit the mixing of air and accommodate accumulations of pollutants in ambient air. Two types of inversion layers occur in the Central Valley: radiation inversions and subsidence inversions. Radiation inversion layers occur in the wintertime when the air closer to the Valley surface cools faster than upper layer of air. The result is a warmer upper layer that traps and hinders the dispersion of air closer to the ground. Subsidence inversion layers occur in the summertime when air descends toward the surface. As air descends, it warms due to compression and forms a ceiling over the cooler surface air. Inversion layers are more persistent in the Valley due to the lack of airflow and containment by mountains that are higher in elevation than normal inversion layers. Climatic and meteorological conditions contribute to the air pollution problems found in the Valley.

4.3.1.3 Regional

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to national and state standards. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter less than 10 microns in diameter (PM_{10}), fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of the monitored pollutants and their effects on health are summarized in **Table 4.3-1, Ambient Air Quality Standards**.

Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels for O_3, CO, SO_2 (1- and 24-hour averaging time), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant.

The SFBAAB is currently designated as a marginal nonattainment area with respect to the national standard for O_3 and is designated as attainment or unclassifiable for all other pollutants. Additional details regarding the national attainment status are provided in **Table 4.3-7** below. Air quality of a region is considered to be in attainment of the California Ambient Air Quality Standards (CAAQS) if the measured ambient air pollutant levels for O_3, CO, SO_2 (1- and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period. The SFBAAB is currently designated as a nonattainment area with respect to the state standards for O_3, PM_{10}, and $PM_{2.5}$ and is designated as attainment or unclassified for all other pollutants. Additional details regarding the state attainment status are provided in **Table 4.3-8** below.

Table 4.3-1
Ambient Air Quality Standards

Air Pollutant	State Standard	Federal Primary Standard	Most Relevant Health Effects
Ozone	0.070 ppm, 8-hr avg. 0.09 ppm, 1-hr. avg.	0.075 ppm, 8-hr avg. (3-year average of annual 4th-highest daily maximum)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.18 ppm, 1-hr avg. 0.030 ppm, annual arithmetic mean	0.053 ppm, annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.030 ppm, annual arithmetic mean 0.14 ppm, 24-hr avg.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in person with asthma
Respirable Particulate Matter (PM_{10})	20 μg/m^3, annual arithmetic mean 50 μg/m^3, 24-hr avg.	150 μg/m^3, 24-hr avg.	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Fine Particulate Matter ($PM_{2.5}$)	12 μg/m^3, annual arithmetic mean	15 μg/m3, annual arithmetic mean (3-year average) 35 μg/m3, 24-hr avg. (3-year average of 98th percentile)	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in the elderly
Sulfates	25 μg/m^3, 24-hr avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage

Air Pollutant	State Standard	Federal Primary Standard	Most Relevant Health Effects
Lead[1]	1.5 µg/m^3, 30-day avg.	1.5 µg/m^3, calendar quarterly average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	Reduction of visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg. (10 AM – 6 PM)	None	Visibility impairment on days when relative humidity is less than 70 percent
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None	Odor annoyance
Vinyl Chloride[1]	0.01 ppm, 24-hr avg.	None	Known carcinogen

Source: South Coast Air Quality Management District. Final Program Environmental Impact Report for the 2007 Air Quality Management Plan, June 2007, Table 3.1-1, p. 3.1-3. [Online] July 2, 2007 <http://www.aqmd.gov/ceqa/documents/2007/aqmd/finalEA/07aqmp/aqmp_fpeir.html>.

µg/m^3 = microgram per cubic meter.

ppm = parts per million by volume.

[1] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

The project site is located within the SFBAAB, which includes all of Alameda, Contra Costa, Marin, Napa, San Mateo, and Santa Clara counties as well as the southern half of Sonoma County and the southwestern portion of Solano County. The region is named as such because of its geographical formation surrounding the San Francisco Bay. The basin is affected by the pollutants generated within dense population centers, heavy vehicular traffic, and industry. However, coastal sea breezes tend to transport pollutants generated within the SFBAAB to inland locations such as the Central Valley.

The air pollutants within the basin are generated by two categories of sources: stationary and mobile. Stationary sources are known as "point sources," which have one or more emission sources at a single facility, or "area sources," which are widely distributed and produce many small emissions. Point sources are usually associated with manufacturing and industrial uses and include sources such as refinery boilers or combustion equipment that produce electricity or process heat. Examples of area sources include residential water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products, such as barbecue lighter fluid or hair spray. "Mobile sources" refer to operational and evaporative emissions from on- and off-road motor vehicles.

4.3.1.4 Local

To identify ambient concentrations of the criteria pollutants, the BAAQMD operates more than 30 air quality monitoring stations throughout the basin. The nearest monitoring station to the project site is located at 793 Rincon Avenue in Livermore, approximately 13 miles southwest of the project site. This monitoring station measures O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$.

Table 4.3-2, Ambient Pollutant Concentrations Measured at Livermore-Rincon Avenue Station by Year, lists the concentrations registered and the exceedances of CAAQS and the NAAQS that have occurred at this monitoring station from 2002 through 2006. During this period (i.e., 2002 through 2006), the station registered multiple days above the state 1-hour ozone standard each year. For the federal 8-hour ozone standard, an exceedance was registered in each year except for 2004. The state 24-hour PM_{10} standard was exceeded in 2002 and 2006. The federal 24-hour $PM_{2.5}$ standard was not exceeded in any of the monitoring years shown. No other exceedances of the state or federal standards for NO_2, CO, SO_2, or lead were registered at this station between 2002 and 2006.

Table 4.3-2
Ambient Pollutant Concentrations Measured at Livermore-Rincon Avenue Station by Year

Pollutant	Standards [1]	Year 2002	2003	2004	2005	2006
OZONE (O_3)						
Maximum 1-hour concentration (ppm)		0.160	0.128	0.113	0.120	0.127
Maximum 8-hour concentration (ppm)		0.106	0.094	0.080	0.090	0.101
Number of days exceeding state 1-hour standard	0.09 ppm	10	10	5	6	13
Number of days exceeding federal 8-hour standard[2]	0.08 ppm	6	3	0	1	5
CARBON MONOXIDE (CO)						
Maximum 1-hour concentration (ppm)		4.8	3.7	3.5	3.4	3.3
Maximum 8-hour concentration (ppm)		2.50	1.94	1.81	1.79	1.79
Number of days exceeding state 8-hour standard	9 ppm	0	0	0	0	0
Number of days exceeding federal 8-hour standard	9.0 ppm	0	0	0	0	0
NITROGEN DIOXIDE (NO_2)[3]						
Maximum 1-hour concentration (ppm)		0.079	0.065	0.063	0.072	0.064
Annual Average (ppm)[4]	0.030 ppm	0.017	0.016	0.014	0.014	0.014
Number of days exceeding state 1-hour standard[3]	0.18 ppm	0	0	0	0	0
SULFUR DIOXIDE (SO_2)[3]						
Maximum 1-hour concentration in ppm		0.020	0.021	0.044	0.019	—
Maximum 24-hour concentration in ppm		0.006	0.009	0.008	0.007	—
Annual arithmetic mean concentration (ppm)		0.002	0.003	0.002	0.002	—
Number of days exceeding state 1-hour standard	0.25 ppm	0	0	0	0	—
Number of days exceeding state 24-hour standard	0.04 ppm	0	0	0	0	—
Number of days exceeding federal 24-hour standard	0.14 ppm	0	0	0	0	—

Pollutant	Standards [1]	Year 2002	2003	2004	2005	2006
PARTICULATE MATTER (PM_{10})						
Maximum 24-hour concentration (μg/m³)[5]		65.9	32.7	48.8	49.4	69.2
Maximum 24-hour concentration (μg/m³)[6]		63.5	31.5	46.7	48.3	67.8
Annual arithmetic mean concentration (μg/m³)[6]		24.5	18.6	19.7	18.5	21.5
Number of samples exceeding state 24-hour standard	50 μg/m³	2	0	0	0	3
Number of samples exceeding federal 24-hour standard	150 μg/m³	0	0	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)						
Maximum 24-hour concentration (μg/m³)		61.6	42.0	40.8	32.1	50.8
Annual arithmetic mean concentration using federal methods (μg/m³)		13.8	9.0	10.2	9.0	**
Number of samples exceeding federal 24-hour standard[6,7]	65 μg/m³	0	0	0	0	0
LEAD[8]						
Maximum 30-day average concentration (μg/m³)		0.01	0.01	—	—	—
Maximum quarterly average concentration (μg/m³)		0.01	0.01	—	—	—
Number of months exceeding state standard	1.5 μg/m³	0	0	—	—	—

Sources: (i) California Air Resources Board Air Quality Database http://www.arb.ca.gov/adam/welcome.html
(ii) US Environmental Protection Agency Air Quality Database http://www.epa.gov/air/data/
*** Insufficient data available to determine value.*
1 Parts by volume per million of air (ppm), micrograms per cubic meter of air (μg/m³) or annual arithmetic mean (aam).
2 The 8-hour federal O_3 standard was revised to 0.075 ppm in March 2008. The statistics shown are based on the previous standard of 0.08 ppm.
3 Sulfur dioxide is not monitored at the Rincon Avenue monitoring station. Data for 2002-2003 were obtained from the 6701 International Boulevard monitoring station in Oakland, which is located approximately 34 miles west of the project site. The 6701 International Boulevard station is the closest monitoring station that monitors for these pollutants. Monitoring for SO_2 was discontinued at the 6701 International station in 2003. Data for 2004 and 2005 were obtained from the Arkansas Street station in San Francisco, the next closest monitoring station located 45 miles west of the project site. Monitoring for SO_2 was discontinued at the Arkansas Street station in 2005.
4 The 1-hour NO_2 standard was revised to 0.18 ppm effective March 20, 2008. The statistics shown are based on the previous standard of 0.25 ppm. In addition, CARB adopted an annual standard of 0.030 ppm, which is more stringent than the federal standard of 0.053 ppm.
5 Using state methods for sampling.
6 Using federal methods for sampling.
7 The federal $PM_{2.5}$ standard was revised from 65 to 35 μg/m³ in September 2006. Statistics shown are based on the 65 μg/m³ standard.
8 Data is from the monitoring station in Fremont at 40733 Chapel Way, the closest monitoring station that monitors that particular pollutant. Lead monitoring was discontinued at the Chapel Way station in 2003.
NOTES:
Sulfates are monitored at Arkansas Street Station, San Francisco. Sulfates have not exceeded the state standard of 25 μg/m³ for more than 20 years.

In addition, because the project site is located within the Central Valley, air monitoring data from the closest monitoring site in the San Joaquin Valley Air Basin (SJVAB) is also provided. The closest air quality monitoring station to the project site in the SJVAB is located at 24371 Patterson Pass Road in Tracy, approximately 2 miles east of the project site. The Patterson Pass Road monitoring station is operated by the San Joaquin Valley Air Pollution Control District (SJVAPCD). **Table 4.3-3**, **Ambient Pollutant Concentrations Measured at Tracy-Patterson Pass Road Station by Year**, lists the concentrations registered and the exceedances of CAAQS and the NAAQS that have occurred at this monitoring station from 2002 through 2006. During this period (i.e., 2002 through 2006), the station registered multiple days above the state 1-hour ozone standard each year. For the federal 8-hour ozone standard, an exceedance was registered in each year. The state 24-hour PM_{10} standard was exceeded in each year. The federal 24-hour $PM_{2.5}$ standard was not exceeded in any of the monitoring years shown. No other exceedances of the state or federal standards for NO_2, CO, or lead were registered at this station between 2002 and 2006.

Table 4.3-3
Ambient Pollutant Concentrations Measured at Tracy-Patterson Pass Road Station by Year

Pollutant	Standards [1]	Year				
		2002	2003	2004	2005	2006
OZONE (O_3)[2]						
Maximum 1-hour concentration (ppm)		0.107	0.103	0.109	0.099	0.109
Maximum 8-hour concentration (ppm)		0.096	0.089	0.097	0.086	0.092
Number of days exceeding state 1-hour standard	0.09 ppm	11	5	4	3	6
Number of days exceeding federal 8-hour standard	0.08 ppm	3	2	1	1	3
CARBON MONOXIDE (CO)[3]						
Maximum 1-hour concentration (ppm)		6.0	5.8	3.7	4.3	4.4
Maximum 8-hour concentration (ppm)		3.21	3.14	2.51	2.86	2.25
Number of days exceeding state 8-hour standard	9 ppm	0	0	0	0	0
Number of days exceeding federal 8-hour standard	9.0 ppm	0	0	0	0	0
NITROGEN DIOXIDE (NO_2)[2]						
Maximum 1-hour concentration (ppm)		0.077	0.071	0.060	0.087	0.072
Annual Average (ppm)[4]	0.030 ppm	0.014	0.012	**	0.017	0.018
Number of days exceeding state 1-hour standard[4]	0.18 ppm	0	0	0	0	0
PARTICULATE MATTER (PM_{10})[3]						
Maximum 24-hour concentration (μg/m^3)[6]		91.0	90.0	61.0	84.0	85.0
Maximum 24-hour concentration (μg/m^3)[7]		87.0	88.0	60.0	79.0	82.0
Annual arithmetic mean concentration (μg/m^3)[7]		35.5	28.1	28.6	28.9	32.6
Number of samples exceeding state 24-hour standard	50 μg/m^3	10	3	3	8	11
Number of samples exceeding federal 24-hour standard	150 μg/m^3	0	0	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)[3]						
Maximum 24-hour concentration (μg/m^3)[7]		64.0	45.0	41.0	63.0	47.0
Annual arithmetic mean concentration using federal methods (μg/m^3)		16.7	13.6	13.2	12.5	13.1
Number of samples exceeding federal 24-hour standard[8]	65 μg/m^3	0	0	0	0	0

Pollutant	Standards[1]	Year 2002	2003	2004	2005	2006
LEAD[3]						
Maximum 30-day average concentration (μg/m³)		—	—	—	—	—
Maximum quarterly average concentration (μg/m³)		0.01	0.01	—	—	—
Number of months exceeding state standard	1.5 μg/m³	0	0	—	—	—

Sources: (i) California Air Resources Board Air Quality Database http://www.arb.ca.gov/adam/welcome.html
(ii) US Environmental Protection Agency Air Quality Database http://www.epa.gov/air/data/
*** Insufficient data available to determine value.*

1 *Parts by volume per million of air (ppm), micrograms per cubic meter of air (μg/m³) or annual arithmetic mean (aam).*
2 *Monitoring for the particular pollutant was discontinued at the Tracy station in 2004. Data for 2005 and 2006 are from the Hazelton Avenue monitoring station in Stockton, which is approximately 20 miles northeast of the project site.*
3 *Data is from the monitoring station in Stockton at Hazelton Avenue, the closest monitoring station that monitors that particular pollutant. Lead monitoring was discontinued at the Hazelton Avenue station in 2003.*
4 *The 1-hour NO_2 standard was revised to 0.18 ppm effective March 20, 2008. The statistics shown are based on the previous standard of 0.25 ppm. In addition, CARB adopted an annual standard of 0.030 ppm, which is more stringent than the federal standard of 0.053 ppm.*
5 *Sulfur dioxide is not monitored at any monitoring station in the San Joaquin Valley Air Basin.*
6 *Using state methods for sampling.*
7 *Using federal methods for sampling.*
8 *The federal $PM_{2.5}$ standard was revised from 65 to 35 μg/m³ in September 2006. Statistics shown are based on the 65 μg/m³ standard.*

4.3.1.5 Greenhouse Gases

4.3.1.5.1 Description of the Greenhouse Effect

Heat retention within the atmosphere is an essential process to sustain life on Earth. The natural process through which heat is retained in the troposphere[1] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere in a three step process as follows: (1) short-wave radiation emitted by the Sun is absorbed by the Earth; (2) the Earth emits a portion of this energy in the form of long-wave radiation; and (3) greenhouse gases (GHGs) in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Without the greenhouse effect, the Earth's average temperature would be approximately -18 degrees Celsius (°C) (0° Fahrenheit [°F]) instead of its present 14 °C (57 °F) (National Climatic Data Center 2008). The most abundant GHGs are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long-wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long-wave radiation. The GWP of a gas is determined using carbon dioxide as the reference gas with a GWP of 1.

1 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers).

4.3.1.5.2 Types of Greenhouse Gases

4.3.1.5.2.1 Primary Greenhouse Gases

Greenhouse gases include, but are not limited to, the following:[2]

- Water vapor (H_2O). Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Water vapor and clouds contribute 66 to 85 percent of the greenhouse effect (water vapor alone contributes 36 to 66 percent) (Schmidt 2005). Natural processes such as evaporation from oceans and rivers and transpiration from plants contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively (US Geological Survey 2007). The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than 1 percent) to atmospheric concentrations of water vapor (Energy Information Administration 2008). Therefore, the control and reduction of water vapor emissions is not within reach of human actions. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- Carbon dioxide (CO_2). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent (US EPA 2007). Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs. In 2004, 83.8 percent of California's GHG emissions were carbon dioxide (California Energy Commission 2006).

- Methane (CH_4). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation (US EPA n.d.[a]). Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

- Nitrous oxide (N_2O). Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

- Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide,

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2 All GWPs are given as 100-year GWP. Unless noted otherwise, all GWPs were obtained from the Intergovernmental Panel on Climate Change. 1996. *Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*. Cambridge (UK): Cambridge University Press.

depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years) (Energy Information Administration n.d.). The GWPs of PFCs range from 5,700 to 11,900.

- Sulfur hexafluoride. Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]) (US EPA n.d.[b]).

4.3.1.5.2.2 Other Greenhouse Gases

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depletors; therefore, their gradual phase-out is currently in effect. A few of these compounds are discussed below:

- Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the protocol are subject to a consumption cap and gradual phase-out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b (US EPA 1996).

- 1,1,1-trichloroethane. 1,1,1-trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. In 1992, the US EPA issued Final Rule 57 FR 33754 scheduling the phase-out of methyl chloroform by 2002 (US EPA 2007b). Therefore, the threat posed by methyl chloroform as a GHG will diminish. Nevertheless, the GWP of methyl chloroform is 110 times that of carbon dioxide (US EPA 1996).

- Chlorofluorocarbons (CFCs). CFCs are used as refrigerants, cleaning solvents, and aerosol spray propellants. CFCs were also part of the US EPA's Final Rule 57 FR 3374 for the phase-out of ozone depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere, contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,600 for CFC-11 to 14,000 for CFC-13 (US EPA 2006).

- Ozone. Ozone occurs naturally in the stratosphere where it is largely responsible for filtering harmful ultraviolet (UV) radiation. In the troposphere, ozone acts as a GHG by absorbing and re-radiating the infrared energy emitted by the Earth. As a result of the industrial revolution and rising emissions of oxides of nitrogen (NO_X) and volatile organic compounds (VOCs) (ozone precursors), the concentrations of ozone in the troposphere have increased (IPCC n.d.). Due to the short life span of ozone in the troposphere, its concentration and contribution as a GHG is not well established.

However, the greenhouse effect of tropospheric ozone is considered small, as the radiative forcing[3] of ozone is 25 percent of that of carbon dioxide (IPCC 2007).

4.3.1.5.3 Contributions to Greenhouse Gas Emissions

4.3.1.5.3.1 Global

Anthropogenic GHG emissions worldwide as of 2005 (the latest year for which data are available for Annex 1 countries) totaled approximately 30,800 CO_2 equivalent million metric tons ($MMTCO_2E$).[4] It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data (UNFCCC n.d.[a] and UNFCCC n.d.[b]).[5] Six countries and the European Community accounted for approximately 70 percent of the total global emissions (See **Table 4.3-4, Six Top GHG Producer Countries and the European Community**). It should be noted that inventory data are not all from the same year and may vary depending on the source of the emissions inventory. The GHG emissions in more recent years may be substantially different than those shown in **Table 4.3-4**.

4.3.1.5.3.2 United States

As noted in **Table 4.3-4**, the United States was the top producer of greenhouse gas emissions as of 2005. Based on GHG emissions in 2004, six of the states—Texas, California, Pennsylvania, Ohio, Illinois, and Florida, in ranked order—would each rank among the top 30 GHG emitters internationally (World Resources Institute 2006). The primary greenhouse gas emitted by human activities in the United States was CO_2, representing approximately 84 percent of total greenhouse gas emissions (US EPA 2008b). Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 80 percent of US GHG emissions (US EPA 2008b).

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3 Radiative forcing, measured in Watts/m^2, is an externally imposed perturbation (e.g., stimulated by greenhouse gases) in the radiative energy budget of the Earth's climate system (i.e., energy and heat retained in the troposphere minus energy passed to the stratosphere).

4 The CO_2 equivalent emissions are commonly expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2E$)" The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that $MMTCO_2E$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million metric tons of CO_2.

5 The global emissions are the sum of Annex I and non-Annex I countries without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries that 2004 data were unavailable, the UNFCCC data for the most recent year were used.

Table 4.3-4
Six Top GHG Producer Countries and the European Community

Emitting Countries	GHG Emissions ($MMTCO_2E$)*
United States	7,241.5[1]
China	4,882.7[2]
European Community	4,192.6[1]
Russian Federation	2,132.5[1]
India	1,606.5[2]
Japan	1,359.9[1]
Germany[3]	1,001.5[1]
Total	21,415.7

Sources:

[1] *United Nations Framework Convention on Climate Change http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i /items/3841.php*

[2] *GHG emissions for China and India (Calendar Year 2000) were obtained from the World Resources Institute's Climate Analysis Indicators Tool (CAIT) http://www.cait.wri.org/cait.php*

[3] *Germany's GHG emissions are included in the European Community.*

* *Excludes emissions/removals from land use, land-use change and forestry (LULUCF)*

4.3.1.5.3.3 State of California

Based upon the 2004 GHG inventory data (the latest year available) compiled by CARB for the California 1990 greenhouse gas emissions inventory, California emitted emissions of 484 $MMTCO_2E$, including emission resulting from out-of-state electrical generation (CARB 2007). Based on the CARB inventory and GHG inventories for countries contributing to the worldwide GHG emissions inventory compiled by the United Nations Framework Convention on Climate Change (UNFCCC) for 2005, California's GHG emissions rank second in the United States (Texas is number one) with emissions of 423 $MMTCO_2E$ (excluding emissions related to imported power) and internationally between Ukraine (418.9 $MMTCO_2E$) and Spain (440.6 $MMTCO_2E$) (UNFCCC n.d.[a]).

A California Energy Commission (CEC) emissions inventory report placed CO_2 produced by fossil fuel combustion in California as the largest source of GHG emissions in 2004, accounting for 81 percent of the total GHG emissions (CEC 2006). CO_2 emissions from other sources contributed 2.8 percent of the total GHG emissions, methane emissions 5.7 percent, nitrous oxide emissions 6.8 percent, and the remaining 2.9 percent was composed of emissions of high-GWP gases (CEC 2006). These high GWP gases are largely composed of refrigerants and a small contribution of sulfur hexafluoride (SF_6) used as insulating materials in electricity transmission and distribution.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions are presented in **Table 4.3-5, GHG Sources in California**.

Table 4.3-5
GHG Sources in California[1]

Source Category	Annual GHG Emissions ($MMTCO_2E$)[a]	Percent of Total	Annual GHG Emissions ($MMTCO_2E$)[b]	Percent of Total
Agriculture	27.9	5.8%	27.9	6.6%
Commercial Uses	12.8	2.6%	12.8	3.0%
Electricity Generation	119.8	24.7%	58.5	13.8%
Forestry (excluding sinks)	0.2	0.0%	0.2	0.0%
Industrial Uses	96.2	19.9%	96.2	22.7%
Residential Uses	29.1	6.0%	29.1	6.9%
Transportation	182.4	37.7%	182.4	43.1%
Other	16.0	3.3%	16.0	3.8%
Totals	484.4	100.0%	423.1	100.0%

Sources:
[1] *California Air Resources Board. California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16, 2007.*
[a] *Includes emissions associated with imported electricity, which account for 61.3 $MMTCO_2E$ annually.*
[b] *Excludes emissions associated with imported electricity.*
[c] *Unspecified combustion and use of ozone-depleting substances.*

4.3.1.6 Global Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer) (US EPA 2008). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

4.3.1.6.1 Indications of Anthropogenic Influences

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data shows that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature (IPCC 2007). In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snowpack in both hemispheres, and in polar ice and ice sheets in both the arctic and Antarctic regions (IPCC 2007).

4.3.1.6.2 Influence of Industrialization

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of carbon dioxide, methane, and nitrous oxide from before the start of the industrialization, around 1750, to over 650,000 years ago. For that period, it was found that carbon dioxide concentrations ranged from 180 ppm to 300 ppm. For the period from around 1750 to the present, global carbon dioxide concentrations increased from a pre-industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range (IPCC 2007). Global methane and nitrous oxide concentrations show similar increases for the same period (see **Table 4.3-6, Comparison of Global Pre-Industrial and Current GHG Concentrations**).

Table 4.3-6
Comparison of Global Pre-Industrial and Current GHG Concentrations[1]

Greenhouse Gas	Early Industrial Period Concentrations (ppm)	Natural Range for Last 650,000 Years (ppm)	2005 Concentrations (ppm)
Carbon Monoxide	280	180 to 300	379
Methane	715	320 to 790	1774
Nitrous Oxide	270	NA	319

Sources:
[1] *Intergovernmental Panel on Climate Change, "Climate Change 2007"*

4.3.1.6.3 Effects of Global Climate Change

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2° Celsius per decade, determined from meteorological measurements world-wide between 1990 and

2005 (IPCC 2007). Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century (IPCC 2007). Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007);
- A rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets (IPCC 2007);
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007);
- The decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years (California EPA Climate Action Team 2006);
- An increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century (California EPA Climate Action Team 2006); and
- High potential for erosion of California's coastlines and sea water intrusion into the Delta and associated levee systems due to the rise in sea level (California EPA Climate Action Team 2006).

4.3.2 REGULATORY ENVIRONMENT

Air quality within the SFBAAB is addressed through the efforts of various federal, state, regional and local government agencies. These agencies work jointly as well as individually to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the basin are discussed below along with their individual responsibilities.

4.3.2.1 Federal (US Environmental Protection Agency)

The US EPA is responsible for enforcing the federal Clean Air Act (CAA) and the NAAQS. The NAAQS identify levels of air quality for seven criteria pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The seven criteria pollutants are O_3, CO, NO_2, SO_2, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. For air quality purposes, these particles are classified by size: fine particulates ($PM_{2.5}$) have a diameter less than or equal to 2.5 micrometers, and respirable or coarse particulates (PM_{10}) have a diameter less than or equal to 10 micrometers. The federal ambient air quality standards and the relevant health effects of the criteria pollutants are summarized in **Table 4.3-1, Ambient Air Quality Standards**.

The basin is currently classified by the US EPA as a nonattainment/marginal area for the 8-hour standard for O_3. Additionally, it has been designated as an attainment/unclassifiable area for the 1-hour and 8-hour standards for CO; the 24-hour and annual $PM_{2.5}$ standards; the annual standard for NO_2; and as an attainment area for the quarterly lead standard and 24-hour and annual SO_2 standards. The basin is currently designated as unclassifiable for the 24-hour PM_{10} standard. In response to its enforcement responsibilities, the US EPA requires each state to prepare and submit a State Implementation Plan (SIP) describing how the state will achieve the federal standards by specified dates, depending on the severity of the air quality within the state or air basin.

The status of the SFBAAB with respect to attainment with the NAAQS is summarized in **Table 4.3-7, National Ambient Air Quality Standards and Status – San Francisco Bay Area Air Basin**.

Table 4.3-7
National Ambient Air Quality Standards and Status
San Francisco Bay Area Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Nonattainment/Marginal
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	Unclassifiable
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [July 19, 2007]. http://www.epa.gov /region9/air/maps/maps_top.html

4.3.2.1.1 Hazardous Air Pollutants

Regulation of hazardous air pollutants (HAPs) under federal regulations is achieved through federal and state controls on individual sources. Federal law defines HAPs as non-criteria air pollutants with short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. The 1990 federal CAA Amendments offer a comprehensive plan for achieving significant reductions in both mobile and stationary source emissions of HAPs. Under the 1990 CAA Amendments, a total of 189 chemicals or chemical families were designated HAPs because of their adverse human health effects. Title III of the 1990 federal CAA Amendments amended Section 112 of the CAA to replace the former program with an entirely new technology-based program. Under Title III, the US EPA must establish maximum achievable control technology emission standards for all new and existing "major" stationary sources through promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP). Major stationary sources of HAPs are required to obtain an operating permit from the BAAQMD pursuant to Title V of the 1990 CAA Amendments. A major source is defined as one that emits at least 10 tons per year of any HAP or at least 25 tons per year of all HAPs.

4.3.2.2 State (California Air Resources Board)

CARB, a branch of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1988 California Clean Air Act (CCAA), for responding to the federal CAA requirements and for regulating emissions from motor vehicles and consumer products within the state. CARB has established emission standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions. The CCAA and other California air quality statutes designate local air districts, such as the BAAQMD, with the responsibility for regulating most stationary sources, and to a certain extent, area sources. CARB is responsible for the regulation of motor vehicles and fuels and some area sources such as consumer products.

Like the US EPA, CARB has established ambient air quality standards for the state (i.e., CAAQS). These standards apply to the same seven criteria pollutants as the federal CAA and also address sulfates (SO_4), visibility-reducing particles, hydrogen sulfide (H_2S) and vinyl chloride (C_2H_3Cl). The CCAA standards are more stringent than the federal standards and, in the case of PM_{10} and SO_2, far more stringent. The CCAA requires air pollution control districts to achieve the state standards by the earliest practicable date. The California ambient air quality standards and the relevant health effects of the criteria pollutants are summarized in **Table 4.3-1**. Based on monitored pollutant levels, the CCAA divides O_3 nonattainment areas into four categories—moderate, serious, severe, and extreme—to which progressively more stringent planning and emission control requirements apply.

The basin is a nonattainment area for the California 1-hour and 8-hour ozone standard. The basin is designated as nonattainment for the California 24-hour and annual PM_{10} standards, as well as the California annual $PM_{2.5}$ standard. The basin is designated as attainment or unclassifiable for all other CAAQS. The ozone precursors, volatile organic compounds (VOC) or reactive organic gases (ROG)[6] and oxides of nitrogen (NO_X), in addition to PM_{10}, are the pollutants of concern for projects located in the basin. The status of the basin with respect to attainment with the CAAQS is summarized in **Table 4.3-8, California Ambient Air Quality Standards and Status – San Francisco Bay Area Air Basin**.

Table 4.3-8
California Ambient Air Quality Standards and Status
San Francisco Bay Area Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [July 26, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

1 CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Serious.

2 CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

4.3.2.2.1 Toxic Air Contaminants

California law defines TACs as air pollutants having carcinogenic or other health effects. Assembly Bill (AB) 1807 (the Tanner Bill, passed in 1983) established the State Air Toxics Program and the methods for designating certain chemicals as TACs. A total of 245 substances have been designated TACs under California law; they include the federal HAPs adopted as TACs in accordance with AB 2728. The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk

6 Volatile organic compounds (VOC) and reactive organic gases (ROG) are used interchangeably throughout this document depending on the term utilized by the authority referenced (e.g., CARB, BAAQMD). The two terms are equivalent with respect to air quality regulation. For consistency, however, ROG is used with respect to significance thresholds and the estimated emissions.

from air toxics sources; AB 2588 does not regulate air toxics emissions directly. Under AB 2588, sources emitting more than 10 tons per year of any criteria air pollutant must estimate and report their toxic air emissions to the local air districts. Local air districts then prioritize facilities on the basis of emissions, and high priority facilities are required to submit a health risk assessment and communicate the results to the affected public. Depending on risk levels, emitting facilities are required to implement varying levels of risk reduction measures. The BAAQMD is responsible for implementing AB 2588 in the basin.

The BAAQMD is currently working to control TAC impacts from local hot spots and from ambient background concentrations. The control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources to identify major TAC emissions and developing measures to reduce TAC emissions. The BAAQMD publishes the results of the various control programs in an annual report, which provides information on the current TAC inventory, AB 2588 risk assessments, TAC monitoring programs, and TAC control measures and plans.

One of the TACs being controlled by the BAAQMD is particulate matter (PM) from diesel-fueled engines, also known as diesel exhaust particulate. In 1998, CARB identified diesel exhaust particulate as a TAC. Compared to other TACs, diesel exhaust particulate emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk in the basin. On a statewide basis, the average potential cancer risk associated with these emissions is over 500 potential cancer cases per million exposed people. In addition to these general risks, diesel exhaust particulate can also present elevated localized or near-source exposures. Depending on the activity and nearness to receptors, these potential risks can range from small to 1,500 cancer cases per million exposed people.

4.3.2.3 Regional (Bay Area Air Quality Management District)

4.3.2.3.1 Bay Area Air Quality Management District

Management of air quality in the basin is the responsibility of the BAAQMD. The BAAQMD is responsible for bringing and/or maintaining air quality in the basin within federal and air quality standards. Specifically, the BAAQMD has responsibility for monitoring ambient air pollutant levels throughout the basin and developing and implementing attainment strategies to ensure that future emissions will be within federal and state standards. The following plans have been developed by the BAAQMD to achieve attainment of the federal and state ozone standards. The Clean Air Plan (CAP) and Ozone Strategy fulfill the planning requirements of the CCAA, while the Ozone Attainment Plan fulfills the federal CAA requirements.

4.3.2.3.1.1 Clean Air Plans

As discussed previously, the federal and California Clean Air Acts require preparation of plans to reduce air pollution to healthful levels. The CCAA requires the air districts within nonattainment areas to prepare triennial assessments and revisions to their CAPs. The BAAQMD has responded to this requirement by preparing a series of CAPs, the most recent and rigorous of which was approved in December 2000. The 2000 CAP continues the air pollution reduction strategy established by the 1991 CAP and represents the third triennial update to the 1991 CAP, following previous updates in 1994 and 1997. The 2000 CAP is designed to address attainment of the state standard for O_3. CAPs are intended to focus on the near-term actions through amendments of existing regulations and promulgation of new District regulations.

The 1997 CAP contained stationary and mobile source control measures, which included developing rules to reduce vehicle trips to and from major residential developments, shopping centers and other indirect sources; encouraging cities and counties to plan for high-density development; and clustering development with mixed uses in the vicinity of mass transit stations (BAAQMD 1997). The 2000 CAP includes changes in the organization and scheduling of some existing control measures, some new stationary source control measures, revisions to previous stationary source measures and deletion of some control measures deemed no longer feasible by BAAQMD staff (BAAQMD 2000). The transportation control measures (TCMs) in the 2000 CAP are unchanged from the 1997 CAP. The 2000 CAP continues to discourage urban sprawl while strongly endorsing high-density mixed-use developments near transit centers that reduce the need for commuting by personal vehicles.

4.3.2.3.1.2 2001 Ozone Attainment Plan

The BAAQMD developed the 2001 Ozone Attainment Plan as a guideline to achieve the then federal 1-hour ozone standard (BAAQMD 2001). The 2001 Attainment Plan was approved by CARB in 2001 and by the US EPA in 2003. In April 2004, the US EPA determined the SFBAAB had attained the federal 1-hour ozone standard. Due to the attainment status of the basin, the 1-hour ozone requirements set forth in the 2001 Ozone Attainment Plan were not required anymore. A year later, in 2005, the federal 1-hour ozone standard was revoked by the US EPA for a new and more health-protective 8-hour standard. The SFBAAB was designated as marginal nonattainment for the federal 8-hour ozone standard. Although designated as nonattainment, areas designated as marginal nonattainment or less were not required to submit new attainment plans. Nonetheless, the control measures and strategies described in the 2001 Ozone Attainment Plan for the 1-hour standard will also help achieve attainment with the 8-hour standard.

4.3.2.3.1.3 2005 Ozone Strategy

The 2005 Ozone Strategy is a comprehensive document mapping how the SFBAAB will achieve attainment of the state 1-hour ozone standard as expeditiously as possible and how the basin will reduce transport of ozone and ozone precursors to neighboring air basins (BAAQMD 2006). The 2005 Ozone Strategy was prepared by the BAAQMD in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). The document outlines how the basin will meet the CCAA planning requirements and transport mitigation requirements through implementation of control measures and strategies. The 2005 Ozone Strategy describes its plans to implement stationary source control measures through District regulations, mobile source control measures through incentive programs; and transportation control measures through transportation programs in cooperation with MTC, transit agencies, and local governments.

The BAAQMD is developing a 2007 Ozone Strategy that will address achieving attainment for both the state 1-hour and 8-hour ozone standard. The 2007 Ozone Strategy will continue to focus on reducing transport of ozone and ozone precursors to neighboring air basins. In addition, a review of the progress achieved from 2004 to 2006 will be evaluated and used to establish meaningful and effective control measures for 2007 to 2009.

4.3.2.3.1.4 BAAQMD Rules and Regulations

The BAAQMD is responsible for limiting the amount of emissions that can be generated throughout the basin by stationary sources. Specific rules and regulations have been adopted that limit emissions that can be generated by various uses and/or activities and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules regulate not only the emissions of the state and federal criteria pollutants, but also the emissions of toxic air contaminants. The rules are also subject to ongoing refinement by the BAAQMD.

In general, all stationary sources with air emissions are subject to BAAQMD’s rules governing their operational emissions. Some emissions sources are further subject to regulation through the BAAQMD’s permitting process. Through this permitting process, the BAAQMD also monitors the amount of stationary emissions being generated and uses this information in developing the CAP. The primary BAAQMD rules applicable to the project include the following:

Regulation 2, Rule 1 (General Requirements): This rule requires new and modified sources of air pollution to acquire permits (e.g., Authority to Construction, Permit to Operate) in order to monitor stationary source emissions within the BAAQMD’s jurisdiction. The rule also includes a list of equipment and processes that would be exempt from permitting requirements. Among others, these include cooling towers and boilers with a heat input rating less than 10 million British thermal units (Btu) per hour fired exclusively with natural gas, liquefied petroleum gas, or a combination.

Regulation 2, Rule 2 (New Source Review): For new and modified stationary sources subject to permitting requirements (see Regulation 2, Rule 1), this series of rules prescribes the use of Best Available Control Technology and the provision of emission offsets (i.e., mitigation) for equipment whose emissions exceed specified thresholds. The applicability of these requirements would be determined upon submittal of an application for an Authority to Construct under Regulation 2, Rule 1.

Regulation 8, Rule 3 (Architectural Coatings): This rule sets limits on the VOC content in architectural coatings sold, supplied, offered for sale, or manufactured within the BAAQMD's jurisdiction. The rule also includes time schedules that specify when more stringent VOC standards are to be enforced. The rule applies during the construction phase of a project. In addition, any periodic architectural coating maintenance operations are required to comply with this rule.

Regulation 8, Rule 15 (Emulsified and Liquid Asphalts): This rule sets limits on the VOC content in emulsified and liquid asphalt used for maintenance and paving operations. The rule includes specific VOC content requirements for various types of asphalt (e.g., emulsified asphalt, rapid-cure liquid asphalt, slow-cure liquid asphalt). This rule applies during the construction phase of a project. In addition, any future asphalt maintenance of a project's roads would be required to comply with the VOC standards set in Rule 15.

Regulation 9, Rule 6 (Nitrogen Oxide Emission from Natural Gas-Fired Water Heaters): This rule sets a limit on the NO_X emissions from natural gas-fired water heaters. The rule applies to natural gas-fired water heaters manufactured after July 1, 1992 with a heat input rating of less than 75,000 Btu/hr. Water heaters subject to the rule must not emit more than 40 nanograms of NO_X per joule of heat output.

Regulation 9, Rule 8 (Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines): This rule limits the NO_X and CO emissions from stationary internal combustion engines. The rule applies to engines rated at greater than 50 brake horsepower, but it exempts emergency generators that would not run for more than 100 hours per year.

4.3.2.3.1.5 BAAQMD CEQA Guidelines

In April 1996, the BAAQMD prepared its *BAAQMD CEQA Guidelines* as a guidance document to provide lead government agencies, consultants and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. The *BAAQMD CEQA Guidelines* were last revised by the BAAQMD in December 1999. This document describes the criteria that the BAAQMD uses when reviewing and commenting on the adequacy of environmental documents, such as this EIR. The *BAAQMD CEQA Guidelines* recommend thresholds for use in determining whether projects would have significant adverse environmental impacts, identify methodologies for predicting project emissions and impacts, and identify measures that can be used to avoid or reduce air quality impacts. This EIR section was prepared following these recommendations.

4.3.2.3.2 Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) is a council of governments for the Counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Sonoma, and Solano. ABAG is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. ABAG also serves as the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, ABAG reviews proposed projects to analyze their impacts on ABAG's regional planning efforts.

Although ABAG is not an air quality management agency, it is responsible for several air quality planning issues. Specifically, as the designated Metropolitan Planning Organization for the nine counties, it is responsible, pursuant to Section 176(c) of the 1990 Amendments to the federal CAA, for providing current population, employment, travel and congestion projections for regional air quality planning efforts. ABAG is required to quantify and document the demographic and employment factors influencing expected transportation demand, including land-use forecasts. ABAG is also responsible for preparing and approving the portions of the basin's CAP relating to demographic projections and integrated regional land use, housing and employment, as well as transportation programs, measures, and strategies.

4.3.2.3.3 Other Air Basins

The project will draw participants and spectators (and possibly employees and services) from other air basins other than the SFBAAB. For the purposes of this evaluation, it is assumed that participants and spectators would also come from locations in the San Joaquin Valley Air Basin (SJVAB), Sacramento Valley Air Basin (SVAB), South Central Coast Air Basin (SCCAB), and the North Central Coast Air Basin (NCCAB). Although it is possible that participants and spectators could come from air basins other than those mentioned above, only a small percentage of trips would be expected to originate from other air basins such as the North Coast Air Basin (NCAB), Mountain Counties Air Basin (MCAB), or Great Basin Valleys Air Basin (GBVAB); therefore, emissions that occur within those air basins were not quantified or analyzed. Nevertheless, spectators and participants coming from Nevada, North Coast Air Basin

(NCAB), Mountain Counties Air Basin (MCAB), or Great Basin Valleys Air Basin (GBVAB) could potentially travel to the proposed project site. All employees were assumed to come from locations within the SFBAAB or the SJVAB. The following sections briefly describe the other air basins and their status with respect to the NAAQS and CAAQS.

4.3.2.3.3.1 San Joaquin Valley Air Basin

A portion of the vehicles driven by the spectators and participants traveling to and from the Altamont Motorsports Park would occur within the SJVAB. The SJVAB consists of all of seven counties, including San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, and the western portion of Kern County. Refer to **Figure 4.3-1**, **Location of California Air Basins**, for the location of the SJVAB in the State of California.

4.3.2.3.3.1.1 Attainment Status

The SJVAB is classified by the US EPA as a serious nonattainment area with respect to the federal 8-hour O_3 standard, a serious nonattainment area for PM_{10}, and a nonattainment area for $PM_{2.5}$. The SJVAB is classified by CARB as a nonattainment area with respect to the state 8-hour and 1-hour O_3 standard and as a nonattainment area for PM_{10} and $PM_{2.5}$. The status of the SJVAB in respect to NAAQS and CAAQS is summarized in **Table 4.3-9, National Ambient Air Quality Standards and Status – San Joaquin Valley Air Basin** and **Table 4.3-10, California Ambient Air Quality Standards and Status – San Joaquin Valley Air Basin**.

Table 4.3-9
National Ambient Air Quality Standards and Status
San Joaquin Valley Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Nonattainment/Serious
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Respirable Particulate Matter (PM_{10})	24 Hour	Nonattainment/Serious
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Nonattainment
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [October 31, 2007]. <http://www.epa.gov/region9/air/maps/maps_top.html>

Table 4.3-10
California Ambient Air Quality Standards and Status
San Joaquin Valley Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassified[2]
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment
Lead (Pb)[3]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[3]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [September 11, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

[1] *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Severe.*

[2] *Kings County, Madera County, and Merced County are classified as Unclassified for Carbon Monoxide (Source: California Code of Regulations, Title 17, Section 60202, http://ccr.oal.ca.gov)*

[3] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

4.3.2.3.3.2 Sacramento Valley Air Basin

A portion of the vehicles driven by the spectators and participants traveling to and from the Altamont Motorsports Park would occur within the SVAB. The SVAB consists of nine complete counties, including Shasta, Tehama, Glenn, Butte, Colusa, Sutter, Yolo, Yuba, and Sacramento Counties. In addition, the SVAB also includes the northeastern portion of Solano County and the western portion of Placer County. Refer to **Figure 4.3-1**, for location of the SVAB in the State of California.

4.3.2.3.3.2.1 Attainment Status

The Sacramento Metropolitan area portion of the SVAB is classified by the US EPA as a serious nonattainment area with respect to the federal 8-hour O_3 standard, a moderate nonattainment area for PM_{10}, and a nonattainment area for $PM_{2.5}$. CARB classifies the metropolitan area of the SVAB as a nonattainment area with respect to the state 8-hour and 1-hour O_3 standard and as a nonattainment area for PM_{10} and $PM_{2.5}$. The status of the Sacramento Metropolitan portion of the SVAB with respect to

SOURCE: California Environmental Protection Agency, Air Resources Board – Not Dated

FIGURE **4.3-1**

Location of California Air Basins

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NAAQS and CAAQS is summarized in **Table 4.3-11, National Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Sacramento Metro)** and **Table 4.3-12, California Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Sacramento Metro)**. The status of the remaining portion of the SVAB with respect to the NAAQS and the CAAQS is summarized in **Table 4.3-13, National Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Excluding Sacramento Metro)** and **Table 4.3-14, California Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Excluding Sacramento Metro)**.

Table 4.3-11
National Ambient Air Quality Standards and Status
Sacramento Valley Air Basin (Sacramento Metro)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Nonattainment/Serious
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Unclassifiable
Respirable Particulate Matter (PM_{10})	24 Hour	Nonattainment/Moderate
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [October 31, 2007]. <http://www.epa.gov /region9/air/maps/maps_top.html>

Table 4.3-12
National Ambient Air Quality Standards and Status
Sacramento Valley Air Basin (Excluding Sacramento Metro)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)[1]	8 Hour	Attainment/Unclassifiable
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Unclassifiable
Respirable Particulate Matter (PM_{10})	24 Hour	Unclassifiable
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [October 31, 2007]. <http://www.epa.gov/ region9/air/maps/maps_top.html>

[1] *Chico Area (Butte County) is designated as Subpart 1 nonattainment for the 8-hour ozone standard.*

Table 4.3-13
California Ambient Air Quality Standards and Status
Sacramento Valley Air Basin (Sacramento Metro)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [September 11, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

[1] *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Serious.).*

[2] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

Table 4.3-14
California Ambient Air Quality Standards and Status
Sacramento Valley Air Basin (Excluding Sacramento Metro)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassified[2]
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Nonattainment/Unclassified[3]
Lead (Pb)[4]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[4]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [September 11, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

[1] *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Moderate with the exception of Colusa County and Glenn County, which remain designated as Nonattainment-Transitional.*

[2] *Colusa, Glenn, Shasta, Tehama, and Yuba County are designated as Unclassified for Carbon Monoxide (Source: California Code of Regulations, Title 17, Section 60202, http://ccr.oal.ca.gov). The remaining portions are Attainment.*

[3] *Butte County is designated as Nonattainment for $PM_{2.5}$. (Source: California Code of Regulations, Title 17, Section 60210, http://ccr.oal.ca.gov). The remaining portions are Unclassified.*

[4] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

4.3.2.3.3.3 South Central Coast Air Basin

A portion of the vehicles driven by the spectators and participants traveling to and from the Altamont Motorsports Park would occur within the SCCAB. The SCCAB consists of San Luis Obispo, Santa Barbara, and Ventura Counties. For the purposes of this analysis, spectators and participants were only assumed to come from the San Luis Obispo County portion of the SCCAB. Refer to **Figure 4.3-1**, for location of the SCCAB in the State of California.

4.3.2.3.3.3.1 Attainment Status

The San Luis Obispo portion of the SCCAB is classified by the US EPA as a nonattainment/unclassifiable area with respect to the federal 8-hour O_3 standard, a nonattainment/unclassifiable area for PM_{10}, and an unclassifiable area for $PM_{2.5}$. CARB classifies the San Luis Obispo portion of the SCCAB as a nonattainment area with respect to the state 8-hour and 1-hour O_3 standard, a nonattainment area for PM_{10}, and an attainment area with respect to $PM_{2.5}$. The status of the San Luis Obispo portion of the SVAB with respect to NAAQS and CAAQS is summarized in **Table 4.3-15, National Ambient Air Quality Standards and Status – South Central Coast Air Basin (San Luis Obispo and Santa Barbara County)** and **Table 4.3-16, California Ambient Air Quality Standards and Status – South Central Coast Air Basin (San Luis Obispo County)**.

Table 4.3-15
National Ambient Air Quality Standards and Status
South Central Coast Air Basin (San Luis Obispo County and Santa Barbara County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Attainment/Unclassifiable
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Unclassifiable
Respirable Particulate Matter (PM_{10})	24 Hour	Unclassifiable
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [October 31, 2007]. <http://www.epa.gov/region9/air/maps/maps_top.html>

Table 4.3-16
California Ambient Air Quality Standards and Status
South Central Coast Air Basin (San Luis Obispo County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Attainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Attainment
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [September 11, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

1 *CARB has not issued area classifications based on the new state 8-hour standard. The previous classification for the 1-hour ozone standard was Moderate.*

2 *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.*

4.3.2.3.3.4 North Central Coast Air Basin

A portion of the vehicles driven by the spectators and participants traveling to and from the Altamont Motorsports Park would occur within the NCCAB. The NCCAB consists of Santa Cruz, San Benito, and Monterey Counties. Refer to **Figure 4.3-1**, for location of the NCCAB in the State of California.

4.3.2.3.3.4.1 Attainment Status

The NCCAB is classified by the US EPA as an attainment/unclassifiable area with respect to the federal 8-hour O_3 standard, an unclassifiable area for PM_{10}, and an attainment/unclassifiable area for $PM_{2.5}$. CARB classifies the NCCAB as a nonattainment area with respect to the state 8-hour and 1-hour O_3 standard, a nonattainment area for PM_{10}, and an attainment area for $PM_{2.5}$. The status of the NCCAB with respect to NAAQS and CAAQS is summarized in **Table 4.3-17, National Ambient Air Quality Standards and Status – North Central Coast Air Basin**, **Table 4.3-18, California Ambient Air Quality Standards and Status – North Central Coast Air Basin (Santa Cruz and San Benito Counties)**, and **Table 4.3-19**, **California Ambient Air Quality Standards and Status – North Central Coast Air Basin (Monterey County)**.

Table 4.3-17
National Ambient Air Quality Standards and Status
North Central Coast Air Basin

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 Hour	Attainment/Unclassifiable
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO_2)	24 Hour, Annual Arithmetic Mean	Unclassifiable
Respirable Particulate Matter (PM_{10})	24 Hour	Unclassifiable
Fine Particulate Matter ($PM_{2.5}$)	24 Hour, Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [July 19, 2007]. <http://www.epa.gov/region9/air/maps/maps_top.html>

Table 4.3-18
California Ambient Air Quality Standards and Status
North Central Coast Air Basin (Santa Cruz County and San Benito County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Unclassified
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Attainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [July 26, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

1 CARB has not issued area classifications based on the new state 8-hour standard. The previous designation for the 1-hour ozone standard was Nonattainment-Transitional.

2 CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

Table 4.3-19
California Ambient Air Quality Standards and Status
North Central Coast Air Basin (Monterey County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 Hour, 8 Hour	Nonattainment[1]
Carbon Monoxide (CO)	1 Hour, 8 Hour	Attainment
Nitrogen Dioxide (NO_2)	1 Hour	Attainment
Sulfur Dioxide (SO_2)	1 Hour, 24 Hour	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour, Annual Arithmetic Mean	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Attainment
Lead (Pb)[2]	30 Day Average	Attainment
Sulfates (SO_4)	24 Hour	Attainment
Hydrogen Sulfide (H_2S)	1 Hour	Unclassified
Vinyl Chloride[2]	24 Hour	Unclassified
Visibility-Reducing Particles	8 Hour (10 AM–6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations Maps/State and National." [Online] [July 26, 2007]. http://www.arb.ca.gov/desig/adm/adm.htm

1 CARB has not issued area classifications based on the new state 8-hour standard. The previous designation for the 1-hour ozone standard was Transitional.

2 CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

4.3.2.4 Greenhouse Gases

4.3.2.4.1 International Activities

4.3.2.4.1.1 Kyoto Protocol

The original Kyoto Protocol was negotiated in December 1997 and came into force on February 16, 2005. As of April 2008, 180 countries and the European Economic Community have ratified the agreement (UNFCCC n.d.[c]). Notably, however, the US has not ratified the protocol. Participating nations are separated into Annex 1 (i.e., industrialized countries) and Non-Annex 1 (i.e., developing countries) countries that have differing requirements for GHG reductions. The goal of the protocol is to achieve overall emissions reduction targets for six GHGs by the period 2008 to 2012. The six GHGs regulated under the protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, and PFCs. Each nation has an emissions reduction target under which they must reduce GHG emissions a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction target for nations participating in the Kyoto Protocol is approximately five percent below 1990 levels (Pew Center on Global Climate Change n.d.). Although the United States has not ratified the protocol, it has established a target of 18 percent reduction in GHG emissions intensity by

2012 (White House n.d.). Greenhouse gas intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

4.3.2.4.1.2 Intergovernmental Panel on Climate Change

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. The IPCC assesses information (i.e., scientific literature) regarding human-induced climate change, impacts of human-induced climate change, and options for adaptation and mitigation of climate change. The IPCC reports its evaluation through special reports called "assessment reports." The latest assessment report (i.e., Fourth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2007.[7]

4.3.2.4.2 Federal Activities

In *Massachusetts vs. EPA,* the Supreme Court held that US EPA has the statutory authority under Section 202 of the CAA to regulate GHGs from new motor vehicles. The court did not hold that the US EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. Upon the final decision, President Bush signed Executive Order 13432 on May 14, 2007, directing the US EPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. The order requires the US EPA to coordinate closely with other federal agencies and to consider the president's Twenty-in-Ten plan in this process. The Twenty-in-Ten plan would establish a new alternative fuel standard that would require the use of 35 billion gallons of alternative and renewable fuels by 2017. The US EPA will be working closely with the Department of Transportation in developing new automotive efficiency standards.

4.3.2.4.3 California Activities

4.3.2.4.3.1 AB 1493

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG

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7 The IPCC's Fourth Assessment Report is available online at http://www.ipcc.ch/.

emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. In setting these standards, CARB must consider cost-effectiveness, technological feasibility, economic impacts, and provide maximum flexibility to manufacturers. CARB adopted the standards in September 2004. These standards are intended to reduce emissions of carbon dioxide and other GHGs (e.g., nitrous oxide, methane). The new standards would phase in during the 2009 through 2016 model years. When fully phased in, the near-term (2009-2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013-2016) standards will result in a reduction of about 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drive.

In December 2004, these regulations were challenged in federal court by the Alliance of Automobile Manufacturers, who claimed that the law regulated vehicle fuel economy, a duty assigned to the federal government. The case had been put on hold by a federal judge in Fresno pending the US Supreme Court's decision in *Massachusetts vs. EPA*. The US Supreme Court's ruling in favor of the state of Massachusetts has been discussed as a likely vindication of state efforts to control GHG emissions. In December 2007, Judge Ishii of the US District Court for the Eastern District dismissed the case by the Alliance of Automobile Manufacturers. However, before these regulations may go into effect, the US EPA must grant California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards. Following the issuance of the *Massachusetts vs. EPA* decision, the US EPA announced that it would decide whether to grant California a waiver by December 2007. On December 19, 2007, Stephen Johnson, the U.S EPA Administrator, denied the waiver citing the need for a national approach to reducing greenhouse gas emissions, the lack of a "need to meet compelling and extraordinary conditions," and the benefits to be achieved through the Energy Independence and Security Act of 2007 (Johnson 2007). The California Attorney General subsequently filed suit in January 2008 to overturn the administrator's decision.

4.3.2.4.3.2 Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of Cal/EPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agency representatives involved in the GHG reduction plan include the Secretary of the

Business, Transportation and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of CARB, the Chairperson of the CEC, and the President of the Public Utilities Commission. Representatives from each of the aforementioned agencies comprise the Climate Action Team. The Climate Action Team is responsible for implementing global warming emissions reduction programs. In order to achieve these goals, the Climate Action Team is organized into two subgroups: the market-based options subgroup and the scenario analysis subgroup. The Cal/EPA secretary is required to submit a biannual progress report from the Climate Action Team to the governor and state legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and reporting possible mitigation and adaptation plans to combat these impacts. The Climate Action Team has fulfilled both of these report requirements through its March 2006 Climate Action Team Report to Governor Schwarzenegger and the legislature (California EPA Climate Action Team 2006). Some strategies currently being implemented by state agencies include CARB introducing vehicle climate change standards and diesel anti-idling measures, the Energy Commission implementing building and appliance efficiency standards, and the Cal/EPA implementing their green building initiative. The Climate Action Team also recommends future emission reduction strategies, such as using only low-GWP refrigerants in new vehicles, developing ethanol as an alternative fuel, reforestation, solar power initiatives for homes and businesses, and investor-owned utility energy efficiency programs. According to the report, implementation of current and future emission reduction strategies have the potential to achieve the goals set forth in Executive Order S-3-05.

4.3.2.4.3.3 AB 32

In furtherance of the goals established in Executive Order S-3-05, the Legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. AB 32 represents the first enforceable statewide program to limit GHG emissions from all major industries with penalties for noncompliance.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. The first GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. By January 2008, the first deadline for AB 32, a statewide cap for 2020 emissions based on 1990 levels and mandatory reporting rules for significant sources of GHGs must be adopted. The following year (January 2009), CARB must adopt a scoping plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions.

The first action under AB 32 resulted in the adoption of a report listing early action greenhouse gas emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. These early action GHG reduction measures are to be adopted and enforced before January 1, 2010, along with 32 other climate-protecting measures CARB is developing between now and 2011. The report divides early actions into three categories:

- Group 1 - GHG rules for immediate adoption and implementation;
- Group 2 - Several additional GHG measures under development; and
- Group 3 - Air pollution controls with potential climate co-benefits.

The original three adopted early action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include:

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels;
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants; and
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations adopted on October 25, 2007, also meeting the narrow legal definition of "discrete early action GHG reduction measures," include:

- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- Reduction of perfluorocarbons from the semiconductor industry;

- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);
- Require that all tune-up, smog check and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency; and
- Restriction on the use of sulfur hexafluoride (SF_6) from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 greenhouse gas emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2E. The inventory revealed that in 1990 transportation, with 35 percent of the state's total emissions, was the largest single sector, followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of greenhouse gases for large facilities on December 6, 2007. The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for 94 percent of greenhouse gas emissions from industrial and commercial stationary sources in California. About 800 separate sources that fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary combustion sources. Transportation sources, which account for 38 percent of California's total greenhouse gas emissions, are not covered by these regulations but will continue to be tracked through existing means. Affected facilities will begin tracking their emissions in 2008, to be reported beginning in 2009 with a phase-in process to allow facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 may be based on best available emission data. Beginning in 2010, however, emissions reports will be more rigorous and will be subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

4.3.2.4.3.4 SB 1368

Governor Schwarzenegger, just two days after signing AB 32, reiterated California's commitment to reducing GHGs by signing SB 1368. SB 1368 requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly-owned utilities. The CEC must adopt the standards on or before June 30, 2007. These standards must be consistent with the standards adopted by the Public Utilities Commission. This effort will help to protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants, by requiring imported electricity to meet GHG performance standards in California and requiring that the standards be developed and adopted in a public process.

4.3.2.4.3.5 Executive Order S-1-07

On January 18, 2007, California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold within the state. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO_2-equivalent gram per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The LCFS will apply to refiners, blenders, producers, and importers of transportation fuels and will use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods. The Executive Order requires the Secretary of Cal/EPA to coordinate with actions of the CEC, CARB, the University of California, and other agencies to develop a protocol to measure the "life-cycle carbon intensity" of transportation fuels. CARB is anticipated to complete its review of the LCFS protocols no later than June 2007 and implement the regulatory process for the new standard by December 2008.

4.3.2.4.3.6 SB 97

In August 2007, as part of the legislation accompanying the state budget negotiations, the legislature enacted SB 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of greenhouse gas emissions. OPR is to develop proposed guidelines by July 1, 2009, and the Resources Agency is directed to adopt guidelines by January 1, 2010. Until such guidelines are promulgated, there is no guidance from OPR or other agencies regarding the analysis of greenhouse gas emissions in EIRs.

4.3.3 ENVIRONMENTAL ANALYSIS

4.3.3.1 Thresholds of Significance

The proposed project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The *BAAQMD CEQA Guidelines* recommend analytical methodologies and provide evaluation criteria for determining the level of significance of project impacts under the above-listed general criteria. The BAAQMD's evaluation criteria for determining air quality impacts provide defined screening thresholds for pollutant emissions. Screening thresholds for air quality impacts from the *BAAQMD CEQA Guidelines* are presented below.

4.3.3.2 Methodology

Air quality impacts resulting from the implementation of the proposed project fall into two categories: short-term impacts due to construction activities and long-term impacts from the day-to-day operations of the proposed project. Construction activities would impact air quality on a local level due to fugitive dust PM_{10} and other criteria pollutant emissions associated with heavy-duty construction equipment exhaust. As mentioned below, compliance with standard control measures specified in the *BAAQMD CEQA Guidelines* is considered sufficient to reduce construction impacts to a less than significant level.

4.3.3.2.1 Area and Stationary Sources

With operation of the facility after approval of the PD District, operational criteria pollutant emissions would be generated primarily due to project-related motor vehicle trips and race-related activities on site. Stationary and area source emissions from natural gas combustion for water and space heating, landscape maintenance equipment, and generators from visiting recreational vehicles (RVs) would also be generated. Air emissions resulting from area sources such as natural gas combustion and landscape maintenance equipment are not expected to vary significantly from the existing project conditions. Therefore, emissions resulting from these sources were not quantified. However, emissions associated with generator sets for visiting RVs were estimated using OFFROAD2007. OFFROAD2007 is a computer model developed by CARB used to estimate emissions from off-road mobile sources such as construction equipment and portable engines/generators. OFFROAD2007 can generate total emissions and activity (e.g., hours of use) data for various types of equipment and horsepower ratings within a county, air basin, or air district for a particular study year. For this analysis, portable engines with a maximum horsepower rating of 15 horsepower operating within Alameda County were used to estimate emissions. Total emissions in tons per year were divided by the total daily activity (i.e., hours of operation) and converted to grams to calculate grams per hour of operation. As discussed in **Section 3.0 Project Description**, up to 100 RVs would be allowed to park on site for an overnight stay during a race event. For this analysis, it was assumed that 80 percent (80 RVs) would operate a generator set for 6 hours per day. The daily emissions for the operation of generator sets on the project site were calculated as follows:

Emission factor (g/hr) × Hours Operating (hr/day) ÷ 453.6 g/lb = Pounds/day in air basin

Emissions associated with RVs generator sets are shown in **Table 4.3-30**. Detailed emission calculations are included in **Appendix 4.3**.

4.3.3.2.2 Mobile Source Exhaust Emissions

Due to the nature of the proposed project and its fluctuating intensity of use, mobile source emissions associated with the day-to-day activities were calculated using emission factors generated by the CARB motor vehicles emission inventory model EMFAC2007. EMFAC2007 can generate total emissions and total vehicle miles traveled (VMT) for the fleet in a class of motor vehicles within a county, air basin, or air district for a particular study year. For this analysis, mobile source operational emissions associated with both the existing and proposed activity levels were quantified. The estimated emissions for the existing operational scenario are based on emission factors for 2007 with activity levels based on track operations during 2005–2007 (see **Section 4.0, Environmental Impact Analysis**). The proposed scenario was assumed to occur in 2008, the calendar year of the project buildout. EMFAC2007 generates emissions and VMT according to the vehicle class and geographic area of interest. Therefore, separate emissions inventories and VMT data specific for each air basin were used to calculate emissions occurring within that particular air basin. Spectators, employees, and a portion of the participants were assigned a vehicle class mix of light-duty automobiles and light-duty trucks (LDA/LDT). The vehicles that haul the race cars were assigned a vehicle class mix of light-duty trucks, medium-duty vehicles, and light-heavy duty trucks (LDT/MDV/LHD). It was assumed that each race car would require one LDT, MDV, or LHD vehicle to haul it to the racetrack, and the balance of the participants' vehicles was the LDA/LDT vehicle mix. A ridership of 2.75 persons per vehicle was assumed for all participants and spectators based on the traffic study for the proposed project (see **Section 4.15 Transportation and Traffic**) prepared by Omni-Means, which is included in **Appendix 4.15**. As a conservative estimate, all employees were assumed to drive alone.

The EMFAC2007 results for each vehicle class were given in tons per day. The daily emissions were then divided by the VMT per day and converted to grams to calculate the emission factors expressed in grams per mile. Total emissions were then calculated by multiplying the emission factor (grams/mile) by the miles traveled and number of vehicle trips (i.e., VMT). In addition, trip lengths were divided into distance traveled within each particular air basin in order to calculate emissions generated in each air basin. The daily emissions for vehicles coming and/or going to the proposed project were calculated as follows:

Emission factor (g/mi) × VMT within air basin ÷ 453.6 g/lb = Pounds/day in air basin

The emissions from participant, spectator and employee vehicles with the SFBAAB, SJVAB, SVAB, NCCAB, and SCCAB are summarized in **Tables 4.3-25** through **4.3-29** and **4.3-30** through **4.3-34** for the baseline and proposed emissions, respectively. Detailed emission calculations are provided in **Appendix 4.3**.

Because competition vehicles are exempt from vehicle emissions standards by the CAA, their emissions cannot be estimated using factors generated by EMFAC2007, which estimates emissions for the general fleet of on-road motor vehicles. Emissions for competition vehicles have not been developed by CARB or US EPA. Race car emissions were emulated using EMFAC2007 to derive emission factors for 1965 to 1970 model year non-catalyst-equipped automobiles operating in calendar year 2007 and 2008 for the existing and proposed scenario, respectively. Vehicles manufactured during this period were not subject to motor vehicle emission standards, as would be many of the race cars, and did not use catalysts to control their NO_X, VOC, and CO emissions. (Depending on the type of racing event, some race cars would be stock vehicles equipped with standard emission controls, and the corresponding emissions would be much less than those estimated in this assessment.) Nevertheless, the analysis would account for potential air emissions in the case that all non-stock vehicles were racing. Emissions from race cars were calculated by multiplying the emission factor (grams per mile) for a particular pollutant by the total VMT similar to the method described above. The emissions from race cars are summarized in **Tables 4.3-25** and **4.3-30** for the baseline and proposed emissions, respectively. A summary of the racing scenario assumed for the existing and proposed conditions is provided in **Appendix 4.3**. Emissions associated with race cars would only occur within the SFBAAB. Detailed emission calculations are provided in **Appendix 4.3**.

4.3.3.2.3 Drifting Emissions

In addition to the typical racing events that currently occur at the Altamont Motorsports Park, the proposed improvements would allow a larger variety of racing types such as drifting. The specific format of a drifting event typically involves two race cars on track at a time, during which the cars race through a defined course with tight turns. The most notable style of drifting is the purposeful slipping of the rear drive wheels to slide or drift through the tight turns. Drifting events would generate additional particulate matter emissions as a result of tire wear. The emissions associated with tire wear were also calculated using EMFAC2007. EMFAC2007 can generate daily emissions (i.e., tons per day) associated with tire wear for a given air basin, air district, or county. Emissions associated with drifting tire wear emissions would only occur within the SFBAAB. Similar to the method described above for exhaust emissions, tire wear emissions in tons per day were divided by the daily VMT and then converted to grams to calculate an emission factor in grams per mile. It should be noted that these emissions represent tire wear emissions associated with four tires. Drifting race cars were assumed to use one set (i.e., four tires) per day during drifting events; that is, the tires would experience the equivalent of a lifetime of tire wear during one day of racing. As a conservative estimate, the average tire life was assumed to be 45,000 miles (Goodyear Tire Engineering 2005). Therefore, the tire wear particulate matter emissions associated with a drifting car per day were calculated by multiplying the emission factor in grams per mile by 45,000 miles. For analytical purposes, it was assumed that 24 cars would participate in drifting events on a race day in addition to the typical race events. On any given race day the number of vehicles participating in drifting events may vary below or above the analytical base. The air emissions associated with drifting events are included in the **Table 4.3-30**.

4.3.3.2.4 Road Dust Emissions

Fugitive particulate matter emissions are associated with vehicles traveling along paved and unpaved roads. For this analysis, all highways and roads in each air basin were considered paved roads. The entrained road dust emissions equation in URBEMIS2007 was used to calculate fugitive dust emissions from travel by participants, spectators and employee vehicles and race cars. The road dust equation is composed of two variables that can be adjusted according to road and vehicle conditions. The "sL" factor is the silt loading of the road surface in units of grams per square meter. The "W" factor is the average weight of vehicles in tons. Since the emissions of interest are PM_{10}, a constant "k," is used as a particle size multiplier for 10 microns and under. The emission factor equation to calculate pounds of dust emission per VMT is as follows:

$$E = k\,(sL/2)^{0.65}\,(W/3)^{1.5}$$

The silt loading (sL) and vehicle weight (W) variable values were obtained from CARB Area Source Methodologies Section 7.9 (CARB 1997). The silt loading factor (sL=0.02) assumes that vehicles will travel primarily on freeways and a silt loading factor of 0.035 assumes that vehicles will travel primarily on major or collector roadways. For the analysis, all vehicles traveling in the SFBAAB, SJVAB, SVAB, and SCCAB were assumed to travel along freeways. Vehicles traveling within the NCCAB were assumed to travel along collector roadways (i.e., sL=0.035). An average vehicle weight of 2.4 tons was assumed for participant, spectator, and employee vehicles. For vehicles that would be hauling the race cars to the project site (i.e., LDT/MDV/LHD), an average weight of 3.5 tons was assumed based on average gross vehicle weight ratings for light-duty trucks, medium-duty trucks, and light-heavy-duty trucks from EMFAC2007. For race cars, the silt loading factor associated with local roads (sL=0.32) and an average weight (W=0.75) was applied to estimate the entrained road dust emissions. The emissions associated with entrained road dust to and from the project site and associated with race cars on the racetrack are included in the PM_{10} emissions shown in **Tables 4.3-25** through **4.3-29** and **4.3-30** through **4.3-34** for the baseline and proposed emissions, respectively. Detailed particulate matter calculations from entrained road dust are included in **Appendix 4.3**.

4.3.3.2.5 Construction Emissions

PM_{10} is the pollutant of greatest concern with respect to construction activities. Construction emissions of PM_{10} can vary greatly depending upon the level of activity, construction equipment, local soils and weather conditions, among other factors. As a result, the *BAAQMD CEQA Guidelines* specify that "[t]he District's approach to CEQA analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions." Therefore, the determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. If all the applicable control measures for PM_{10} indicated in the *BAAQMD CEQA Guidelines* would be implemented, then air pollutant emissions from construction activities would be considered less than significant. If a project would not implement all applicable control measures, construction emissions may be considered to result in a significant impact.

4.3.3.2.6 Operational Emissions

The *BAAQMD CEQA Guidelines* recommend that individual project impacts involving direct and/or indirect operational emissions that exceed the thresholds shown in **Table 4.3-20, BAAQMD Thresholds of Significance** be considered significant:

Table 4.3-20
BAAQMD Thresholds of Significance

Criteria Pollutant	Daily Threshold (pounds)
Oxides of Nitrogen (NO_X)	80
Reactive Organic Gases (ROG)	80
Particulate Matter Less Than 10 Micron (PM_{10})	80

Direct emissions are those that are emitted on a site and include stationary sources and on-site mobile equipment, if applicable. Examples of land uses and activities that generate direct emissions are industrial operations and sources subject to an operating permit by the BAAQMD. Indirect emissions come from mobile sources that access the project site, but generally are emitted off site. For many types of land development projects, the principal source of air pollutant emissions is the motor vehicle trips generated by the project.

Operation of the Altamont Motorsports Park involves spectators, participants, and employees that would travel to the Motorsports Park from various air basins. The applicant provided a rough distribution of the distances from where guests would travel. Although the project site is located within the SFBAAB and would be under the jurisdiction of the BAAQMD, emissions associated with the project's operation would also occur in different air basins.

4.3.3.2.6.1 Other Air Basins

4.3.3.2.6.1.1 San Joaquin Valley Air Basin

The SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* recommends the ozone precursor emissions (ROG and NO_X) from a project's direct and indirect operations should be compared to the thresholds shown in **Table 4.3-21, SJVAPCD Thresholds of Significance** (SJVAPCD 2002). Projects that emit ozone precursor air pollutants in excess of these levels will be considered to have a significant air quality impact.

Table 4.3-21
SJVAPCD Thresholds of Significance

Criteria Pollutant	Annual Threshold (tons)	Equivalent Daily Threshold (pounds)[1]
Oxides of Nitrogen (NO_X)	10	55
Reactive Organic Gases (ROG)	10	55

[1] *The annual schedule of the Altamont Motorsports Park is unknown, so it would be difficult to estimate the annual emissions. The annual threshold has been converted to an equivalent daily threshold to assess the air quality impacts within the SJVAB.*

These thresholds will be applied to the mobile source emissions within the SJVAB as a result of the proposed project (no construction emissions or stationary or area source operational emissions would occur within the SJVAB).

4.3.3.2.6.1.2 Sacramento Valley Air Basin

Spectators and participants are assumed to travel through several air districts within the Sacramento Valley Air Basin (SVAB) while traveling to and from the Altamont Motorsports Park. In order to maintain a conservative approach, the district with the most stringent air quality thresholds was used to determine significance of the proposed project's mobile source emissions in the SVAB. Within the SVAB, the Yolo-Solano Air Quality Management District (YSAQMD) has established the most stringent air quality thresholds. The (YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* recommends the ozone precursor emissions (ROG and NO_X) and PM_{10} from a project's operational emissions should be compared to the thresholds shown in **Table 4.3-22, YSAQMD Thresholds of Significance** (YSAQMD 2007). Projects that emit ozone precursor air pollutants in excess of these levels are considered to have a "substantial" contribution. A project that has a "substantial" contribution could contribute to an existing exceedance of the ozone standards.

Table 4.3-22
YSAQMD Thresholds of Significance

Criteria Pollutant	Daily Threshold (pounds)
Oxides of Nitrogen (NO_X)	55
Reactive Organic Gases (ROG)	55
Particulate Matter Less Than 10 Micron (PM_{10})	80

These thresholds will be applied to the mobile source emissions within the SVAB as a result of the proposed project (no construction emissions or stationary or area source operational emissions would occur within the SVAB).

4.3.3.2.6.1.3 North Central Coast Air Basin

The Monterey Bay Unified Air Pollution Control District's (MBUAPCD) *CEQA Air Quality Guidelines* recommend comparing operational emissions associated with a proposed project to the thresholds shown in **Table 4.3-23, MBUAPCD Thresholds of Significance** (MBUAPCD 2004). Projects that emit air pollutants in excess of these levels are considered to cause a significant impact to air quality in the region. Emissions of indirect and direct ozone precursors (i.e., ROG and NO_X) are to be compared to the thresholds. However, only direct emissions of SO_2 and CO are to be compared to the threshold.

Table 4.3-23
MBUAPCD Thresholds of Significance

Criteria Pollutant	Daily Threshold (pounds)[1]
Reactive Organic Gases (ROG)	137
Oxides of Nitrogen (NO_X)	137
Carbon Monoxide (CO)	550
Sulfur Dioxide (SO_2)	150
Particulate Matter Less Than 10 Micron (PM_{10})	82

These thresholds will be applied to the mobile source emissions within the NCCAB as a result of the proposed project (no construction emissions or stationary or area source operational emissions would occur within the NCCAB).

4.3.3.2.6.1.4 South Central Coast Air Basin

Emissions associated with visitors of the proposed project were assumed to come from San Luis Obispo County. Air quality within San Luis Obispo County is regulated by the San Luis Obispo County Air Pollution Control District (SLOCAPCD). The SLOCAPCD's *CEQA Air Quality Handbook* recommends emissions from a project's operational emissions should be compared to the thresholds shown in **Table 4.3-24, SLOCAPCD Thresholds of Significance** (SLOCAPCD 2003). Projects that emit air pollutants in excess of these levels are considered to cause a significant impact to air quality in the region.

Table 4.3-24
SLOCAPCD Thresholds of Significance

Criteria Pollutant	Daily Threshold (pounds)
Reactive Organic Gases (ROG)	25
Oxides of Nitrogen (NO_X)	25
Carbon Monoxide (CO)	550
Sulfur Dioxide (SO_2)	25
Particulate Matter Less Than 10 Micron (PM_{10})	25

These thresholds will be applied to the mobile source emissions within the SCCAB as a result of the proposed project (no construction emissions or stationary or area source operational emissions would occur within the SCCAB).

4.3.3.2.7 Local Carbon Monoxide Concentrations

Indirect CO emissions are considered significant if they will contribute to a violation of the state standards for CO (9.0 ppm averaged over 8 hours and 20 ppm over 1 hour). The BAAQMD recommends CO modeling for projects in which: (1) project vehicle emissions of CO would exceed 550 pounds per day; (2) project traffic would affect intersections or roadway segments operating at level of service (LOS) E or F, or would cause a decline to LOS E or F;[8] or (3) project traffic would increase traffic volumes on nearby roadways by 10 percent or more (unless the increase in traffic volume is less than 100 vehicles per hour). Intersections are determined to operate at a LOS between A and E (LOS A being the best and LOS E being the worst) according to congestion or delay time, demand/capacity ratio, and relative flow of traffic at the intersection. Intersections that are determined to operate a LOS F or E have the potential to cause a CO hotspot (i.e., exceedance of the CAAQS). If necessary, a simplified CO modeling analysis, described in the *BAAQMD CEQA Guidelines,* may be used to determine localized CO concentrations. If modeling demonstrates that the source would not cause a violation of the state standard at existing or reasonably foreseeable receptors, the motor vehicle trips generated by the project would not have a significant impact on local air quality.

4.3.3.2.8 Global Climate Change

To date, no local or state air quality agency has adopted significance criteria for GHGs emissions or guidance on how GHGs or global climate change should be addressed in CEQA documents. While the Global Warming Solutions Act (AB 32) created a framework for the reduction of GHGs in California, the Act did not address the role of CEQA in achieving the goals of the Act. As noted earlier, in August 2007, the Governor signed SB 97 (Dutton) into law which requires the Governor's Office of Planning and Research (OPR) to prepare CEQA Guidelines for the mitigation of GHG emissions or the effects of greenhouse gas emissions. The Resources Agency must certify and adopt the guidelines by January 1, 2010. Despite the foregoing, this EIR provides a discussion of the cumulative impacts of the project with respect to global climate change in the absence of an established significance threshold under **Potential Impact 4.3-3** below. While global climate change is not listed as a potential air quality impact in the Appendix G checklist or the *BAAQMD CEQA Guidelines*, the adoption of AB 32, as interpreted by the Attorney General and others, has implied that this issue should be evaluated in CEQA documents. For purposes of this assessment, a project would have a significant impact on global climate change if it would:

- Impair or prevent attainment of AB 32's GHG emission reduction goals and strategies.

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8 Levels of Service (LOS) range from A (least congested) with a condition of free flow with low volumes and high speeds to F (most congested) with stop and go, low speed conditions with little or poor maneuverability.

4.3.3.3 Potential Impacts and Mitigation

Potential Impact 4.3-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

4.3.3.3.1 Construction Emissions

The proposed project would not include any major demolition, grading, or construction activities, but would involve improvements to the existing facilities. The proposed project would construct a roof/cover for the existing grandstands, which was permitted by the 1996 Conditional Use Permit, but never constructed. In addition, the proposed improvements could also include the installation of additional grandstands. Finally, the proposed project would construct two electronic light-emitting diode (LED) signs along the site's Interstate 580 and 205 frontages. During construction of the proposed improvements, PM_{10} fugitive dust could be generated as a result of preparing the ground for installation of the roof/cover support or LED signs. In addition, criteria air pollutants, including ROG and NO_X among others, could be generated due to heavy-duty construction equipment used for roof/cover or signage erection. During building construction, emissions would primarily be generated from soil disturbances, heavy-duty construction equipment, construction worker trips, and material delivery trips. Although temporary in nature, construction emissions have the potential to cause adverse effects on local air quality in the vicinity of the project site.

The BAAQMD does not require full quantification of construction emissions, but rather emphasizes the implementation of effective and comprehensive control measures to minimize the generation of PM_{10} fugitive dust. If a proposed project implements all appropriate dust-control measures, the BAAQMD considers construction-related emissions to be less than significant. Implementation of the control measures specified in the *BAAQMD CEQA Guidelines*, Table 2, Feasible Control Measures for Construction Emissions of PM_{10}, would be sufficient to reduce construction impacts to a less than significant level. Without implementation of the control measures, construction impacts would be considered significant.

The BAAQMD's approach to dust abatement calls for "basic" control measures that should be implemented at all construction sites, "enhanced" control measures that should be implemented at construction sites greater than 4 acres in area, and "optional" control measures that should be implemented on a case-by-base basis for construction sites that are large in area or are located near sensitive receptors, or that for any other reason may warrant additional emissions reductions.

During construction of the proposed improvements the applicant shall require construction contractors to implement the appropriate level of mitigation (as detailed below), based on size of the construction area, to maintain project construction-related impacts at acceptable levels; this would reduce the potential impact to a less than significant level.

Elements of the "basic" dust control program for project components that disturb less than 1 acre shall include the following at a minimum:

- Water all active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Pave, apply water three times daily (or as sufficient to prevent dust from leaving the site), or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily or as appropriate (with water sweepers using reclaimed water if possible) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily or as appropriate (with water sweepers using reclaimed water if possible) if visible soil material is carried onto adjacent public streets.

Given the minor construction activities associated with the proposed project, the basic measures will be sufficient to reduce PM_{10} emissions to a less than significant level.

In addition, construction activities could generate air emissions of ROG and NO_X, which are ozone precursors. The magnitude of emissions would vary on a day-to-day basis depending on the heavy-duty construction equipment activity level, number of construction workers, and material delivery trucks. The ozone precursors could potentially contribute to the ongoing nonattainment status of the SFBAAB for ozone. The *BAAQMD CEQA Guidelines* recognize that construction activities will generate ROG and NO_X; however, these emissions are included in the inventory that is used as the basis for the regional air quality plan. Hence, the emissions have been accounted for and would not be expected to impede attainment or maintenance of ozone in the SFBAAB.

Furthermore, the project construction activities would comply with Regulation 8, Rules 3 and 15 related to architectural coatings and emulsified and liquid asphalt if the materials are required for improvement installation. Therefore, the construction emissions would not conflict or obstruct with implementation of the applicable air quality plan and construction-phase project impacts on air quality would be less than significant.

4.3.3.3.2 Operational Emissions

Following the proposed improvements, the project would continue to generate operational emissions as a result of its daily activities. The project would operate at different levels of intensity depending on the type of event (e.g., nonfeature, feature, and major). For the purposes of this air quality analysis, the proposed project scenario was compared with maximum baseline operations (existing operations).

The origins of participants, spectators, and employees were separated by distance from the project site and air basin. Visitors coming to the project site were grouped into those that would come from a less than 35-mile radius, 35- to 100-mile radius, and 100- to 200-mile radius. Half (i.e., 50 percent) of the total visitors were assumed to come from a less than 35-mile radius and 25 percent were assumed to come from a 35 to 100-mile radius and 100- to 200-mile radius. All employees were assumed to come from the less than 35-mile radius. In addition, within each radius distance, spectators and participants were split into the potential air basins of origin. The following list shows the radius distance and the percent of spectators and participants from each potential air basin.

Less than 35-mile Radius (50 percent of total visitors)

- 50 percent from SFBAAB
- 50 percent from SJVAB

35- to 100-mile Radius (25 percent of total visitors)

- 35 percent from SJVAB
- 35 percent from SVAB
- 20 percent from SFBAAB
- 10 percent from NCCAB

100- to 200-mile Radius (25 percent of total visitors)

- 40 percent from SJVAB
- 40 percent from SVAB
- 10 percent from NCCAB
- 10 percent from SCCAB

The distribution of participants, spectators, and employees described above was used to estimate daily operational emissions for both the baseline and proposed operational scenario.

4.3.3.3.2.1 Baseline Operational Parameters Assumed in Analysis

The baseline operational scenario is based on track operations in 2005–2007 and emission factors derived using EMFAC2007 for calendar year 2007. A total of 6,150 people (the worst-case scenario) were assumed to visit the project site during a racing event. Individual event breakdown assumes 5,500 spectators, 500 participants and 150 employees. A ridership of 2.75 persons per vehicle was assumed for all participants and spectators based on the traffic study for the proposed project (see **Section 4.15 Transportation and Traffic**) as prepared by Omni-Means, which is included in **Appendix 4.15**. As a conservative estimate, all employees were assumed to drive alone.

A typical event during the baseline level of operation attracted up to 50 race cars that compete in multiple events including a qualifying round, heat races, and a main event. The vehicle miles traveled (VMT) by race cars for the baseline race scenario as described above is 4,340 for all events. During the baseline period (as of April 2007), up to 30 participant RVs were permitted to stay overnight at the project site on a race day. It is assumed that roughly 80 percent of the RVs (24 RVs) would have operated a 6-kilowatt generator for four to six hours per day.

The daily operational emissions occurring within the SFBAAB associated with the baseline level of operations are shown in **Table 4.3-25**, **Baseline Level Daily Operational Emissions – San Francisco Bay Area Air Basin**. **Tables 4.3-26**, **4.3-27**, **4.3-28**, and **4.3-29**, show the daily operational emissions occurring within the SJVAB, SVAB, NCCAB, SCCAB, respectively.

Table 4.3-25
Baseline Level Daily Operational Emissions
San Francisco Bay Area Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	6.67	12.92	121.12	0.09	6.90
Spectator Vehicles	71.84	125.09	1,290.87	0.98	63.04
Employee Vehicles	5.51	9.59	98.96	0.07	4.83
Race cars	79.75	49.12	875.94	0.06	0.99
Total Mobile Source Emissions:	163.77	196.72	2,386.89	1.20	75.76
RVs Generators	2.77	17.60	11.96	0.00	1.10
Total Baseline Emissions:	166.54	214.32	2,398.85	1.20	76.86

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-26
Baseline Level Daily Operational Emissions
San Joaquin Valley Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	12.41	25.97	234.25	0.16	12.45
Spectator Vehicles	126.45	238.81	2,426.02	1.68	113.86
Employee Vehicles	3.77	7.12	72.31	0.05	3.39
Total Baseline Emissions:	142.63	271.90	2,732.58	1.89	129.70

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-27
Baseline Level Daily Operational Emissions
Sacramento Valley Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	4.70	9.75	86.73	0.06	4.83
Spectator Vehicles	48.63	89.66	907.00	0.66	44.03
Total Baseline Emissions:	53.33	99.41	993.73	0.72	48.86

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-28
Baseline Level Daily Operational Emissions
North Central Coast Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	1.89	3.68	32.52	0.02	1.97
Spectator Vehicles	20.51	36.31	350.19	0.19	17.98
Total Baseline Emissions:	22.40	39.99	382.71	0.21	19.95

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-29
Baseline Level Daily Operational Emissions
South Central Coast Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	0.27	0.55	4.89	0.00	0.28
Spectator Vehicles	2.81	5.17	51.70	0.04	2.54
Total Baseline Emissions:	3.08	5.72	56.59	0.04	2.82

*Source: Impact Sciences, Inc. Emissions calculations are provided in **Appendix 4.3**.*
Totals in table may not appear to add exactly due to rounding in the calculations.

4.3.3.3.2.2 Proposed Project Operational Parameters Assumed in Analysis

The proposed project operational year was assumed to be 2008. A total of 8,000 people (the worst-case scenario) were assumed to be present at the project site during an event. Individual event breakdown assumes 7,350 spectators, 500 participants and 150 employees. Based on the traffic study for the proposed project (see **Section 4.15 Transportation and Traffic**) as prepared by Omni-Means (included in **Appendix 4.15),** an average ridership rate of 2.75 persons per vehicle was still assumed due to the type of proposed events to be held. In addition to the change in the number of people per event, an additional request has been made to allow for overnight parking for up to 100 RVs. It is anticipated that roughly 80 percent of the RVs (80 RVs) will operate a 6-kilowatt generator for four to six hours per day.

It is anticipated that each race event may attract up to 50 race cars that will compete in multiple events including a qualifying round, heat races, and the main event. The anticipated VMT for the proposed race scenario is 4,340 for all events. Additional assumptions of the Race car Scenario include: Heat 1 divided into two race events, and Heat 2 removing the top four from each race in Heat 1 leaving the remainder to race again with the Main Race including all cars.

The new proposal also includes a request to allow "drifting" during the racing events. Drifting refers to a driving technique where the rear slip angle is greater than the front slip angle, and the front wheels are pointing in the opposite direction to the turn (e.g., car is turning left, wheels are pointed right or vice versa), and the driver is controlling these factors. Typically, cars involved in "drifting" get one to two "passes" from a set of tires. Tire emissions are based upon the EMFAC2007 PM_{10} emission factor for tire wear (converted to grams per mile) and on the average tire usage (45,000 miles/set of tires) with the assumption that each race day will use one set of tires. The number of cars participating in drifting during a race event may include up to 50 race cars for a drifting-only weekend, however, if there is a mix of conventional race cars and drifting cars on the weekend calendar it is only anticipated that 24 drifting cars will be included. As not all races will include drifting, this analysis assumes that 24 drifting cars will be added to the 50 race cars typically competing in the proposed case.

Emissions associated with the proposed operational scenario were calculated assuming the same radius distance and air basin distribution as the baseline scenario. **Table 4.3-30**, **Proposed and Net Daily Operational Emissions – San Francisco Bay Area Air Basin**, shows the proposed daily operational emissions associated with a weekend race event.

As shown in **Table 4.3-30**, the net increase in operational emissions associated with implementation of the proposed project would not exceed any of the BAAQMD thresholds of significance. Therefore, the net operational emissions would have a less than significant impact on air quality in the SFBAAB.

As shown in **Table 4.3-31, Proposed and Net Daily Operational Emissions – San Joaquin Valley Air Basin**, the net increase in operational emissions within the SJVAB associated with implementation of the proposed project would not exceed any of the SJVAPCD thresholds of significance. Therefore, net operational emissions within the SJVAB would be considered less than significant.

As shown in **Table 4.3-32, Proposed and Net Daily Operational Emissions – Sacramento Valley Air Basin**, the net increase in operational emissions within the SVAB associated with implementation of the proposed project would not exceed the YSAQMD thresholds of significance. Therefore, net operational emissions within the SVAB would be considered less than significant.

Table 4.3-30
Proposed and Net Daily Operational Emissions
San Francisco Bay Area Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	6.04	11.88	111.73	0.09	6.92
Spectator Vehicles	86.26	152.41	1,581.95	1.31	84.39
Employee Vehicles	4.95	8.74	90.74	0.07	4.84
Race cars	80.95	49.03	879.31	0.06	2.99
Drifting Cars	1.27	0.77	13.78	0.00	19.16
Total Mobile Source Emissions:	179.47	222.84	2,677.52	1.54	118.30
RV Generators	9.25	58.65	39.86	0.01	3.67
Total Proposed Project Emissions:	188.72	281.49	2,717.38	1.55	121.97
Total Baseline Project Emissions:	166.54	214.32	2,398.85	1.20	76.87
Net Change in Emissions:	22.18	67.17	318.53	0.35	45.10
Recommended BAAQMD Threshold:	80	80	—	—	80
Exceeds Threshold?	NO	NO	—	—	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-31
Proposed Daily Operational Emissions
San Joaquin Valley Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**
Mobile Sources					
Participant Vehicles	11.20	23.98	216.01	0.16	12.47
Spectator Vehicles	151.97	292.86	2,985.33	2.24	152.33
Employee Vehicles	3.39	6.53	66.58	0.05	3.39
Total Proposed Project Emissions:	166.56	323.37	3,267.92	2.46	168.19
Total Baseline Emissions:	142.63	271.90	2,732.57	1.90	129.72
Net Change in Emissions:	23.93	51.47	535.35	0.56	38.47
Recommended SJVAPCD Threshold:	55	55	—	—	—
Exceeds Threshold?	NO	NO	—	—	—

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Table 4.3-32
Proposed and Net Daily Operational Emissions
Sacramento Valley Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**
Mobile Sources					
Participant Vehicles	4.23	8.97	79.84	0.06	4.83
Spectator Vehicles	58.34	109.59	1,113.49	0.88	58.89
Total Proposed Project Emissions:	62.58	118.57	1,193.32	0.94	63.71
Total Baseline Emissions:	53.33	99.41	993.73	0.72	48.85
Net Change in Emissions:	9.25	19.16	199.59	0.22	14.86
Recommended YSAQMD Threshold:	55	55	—	—	80
Exceeds Threshold?	NO	NO	—	—	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

As shown in **Table 4.3-33, Proposed and Net Daily Operational Emissions – North Central Coast Air Basin**, the net increase in operational emissions within the NCCAB associated with implementation of the proposed project would not exceed any of the MBUAPCD thresholds of significance. Therefore, net operational emission within the NCCAB would be considered less than significant.

Table 4.3-33
Proposed and Net Daily Operational Emissions
North Central Coast Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	1.73	3.44	30.31	0.02	1.97
Spectator Vehicles	24.91	45.03	433.79	0.25	24.03
Total Proposed Project Emissions:	26.64	48.48	464.10	0.27	26.01
Total Baseline Emissions:	22.40	39.99	382.71	0.21	19.94
Net Change in Emissions:	4.24	8.49	81.39	0.06	6.07
Recommended MBUAPCD Threshold:	137	137	550	150	82
Exceeds Threshold?	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

As shown in **Table 4.3-34, Proposed and Net Daily Operational Emissions – South Central Coast Air Basin**, the net increase in operational emissions within the SCCAB associated with implementation of the proposed project would not exceed any of the SLOCAPCD thresholds of significance. Therefore, net operational emissions within the SCCAB would not be considered a significant impact.

Table 4.3-34
Proposed and Net Daily Operational Emissions
South Central Coast Air Basin

	Emissions in Pounds per Day				
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Mobile Sources					
Participant Vehicles	0.24	0.51	4.51	0.00	0.28
Spectator Vehicles	3.37	6.34	63.43	0.05	3.40
Total Project Emissions:	3.61	6.85	67.94	0.05	3.49
Total Baseline Emissions:	3.07	5.72	56.59	0.04	2.82
Net Change in Emissions:	0.54	1.13	11.35	0.01	0.67
Recommended SLOCAPCD Threshold:	25	25	550	25	25
Exceeds Threshold?	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix 4.3****.*
Totals in table may not appear to add exactly due to rounding in the calculations.

Conclusion: Less than significant

Mitigation: None required

Potential Impact 4.3-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Maximum CO concentrations occurring at intersections under the proposed operational levels were calculated for peak-hour traffic volumes at each of the study area intersections using CALINE4, a dispersion model for predicting CO concentrations near roadways. According to the BAAQMD guidelines, a CO hotspots screening analysis should be conducted for intersections that are currently operating, or are expected to operate at, Levels of Service (LOS) E or F (BAAQMD 1999). For the purpose of analysis, all intersections operating at LOS D or worse during cumulative plus project conditions were analyzed for a conservative approach. Therefore, of the 11 intersections evaluated in the traffic impact analysis for the proposed scenario, a CO hotspots analysis was conducted for seven intersections. The cumulative (i.e., 2030) plus proposed project traffic volumes during Friday P.M. and Sunday P. M. were used to calculate CO concentrations at the analyzed intersections.[9] These traffic volumes represent trips from all cumulative projects operating in the year 2030 including the proposed project. The four intersections that were projected to operate at a LOS C or better are not likely to result in an exceedance of the CO ambient air quality standards.

For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening model developed by the BAAQMD. The simplified model is intended as a screening analysis that identifies a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second, and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. The simplified CALINE4 screening procedure was used to predict post-development CO concentrations 0 and 25 feet from the intersections in the proposed project's traffic impact analysis. The results of air emissions modeling for the project study area are shown in **Table 4.3-35, Carbon Monoxide Concentrations During Cumulative (2030) Plus Proposed Project Scenario**.

9 Racetrack operations would generally occur from Thursday to Sunday with larger events occurring from Friday night to Sunday afternoon. Therefore, the traffic analysis focused on the Friday P.M. and Sunday P.M. peak traffic hours, which would be the peak racetrack operational hours.

Table 4.3-35
Carbon Monoxide Concentrations During Cumulative (2030) Plus Proposed Project Scenario (ppm)

Intersection	0 Feet		25 Feet	
	1-Hour [1]	8-Hour [2]	1-Hour [1]	8-Hour [2]
Grant Line Road and Altamont Pass Road	3.0	2.5	2.7	2.3
Grant Line Road and Interstate 580 Eastbound Ramps	2.8	2.4	2.6	2.2
Grant Line Road and Midway Road	3.1	2.6	2.8	2.3
Interstate 580 Northbound Ramps and Mountain House Parkways	3.0	2.5	2.7	2.3
Interstate 580 Southbound Ramps and Patterson Pass Road	2.8	2.3	2.6	2.2
Midway Road and Altamont Motorsports Park Access Road	2.4	2.1	2.4	2.0
Midway Road and Patterson Pass Road	2.8	2.3	2.6	2.2

Source: Impact Sciences, Inc. The CO concentration calculations are provided in ***Appendix 4.3****.*
[1] *State standard is 20 parts per million. Federal standard is 35 parts per million.*
[2] *State standard is 9.0 parts per million. Federal standard is 9 parts per million.*

The proposed project plus cumulative traffic volumes would not result in an increase in CO levels equal to or greater than 20 ppm for the 1-hour standard, or 9.0 ppm for the 8-hour standard at a distance of 0 and 25 feet from the source. As a result, impacts of the project on ambient CO concentrations would be less than significant.

Conclusion: Less than significant

Mitigation: None required

Potential Impact 4.3-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

4.3.3.3.3.1 Ozone Precursors

According to the *BAAQMD CEQA Guidelines*, any project that would individually have a significant air quality impact would also have a significant cumulative air quality impact. As discussed in **Potential Impact 4.3-1**, emissions associated with operation of the proposed project would not exceed any of the BAAQMD-recommended operational thresholds of significance. Therefore, the project would not have an individually significant air quality impact.

For a project that does not individually have a significant air quality impact, the *BAAQMD CEQA Guidelines* recommend that a determination of cumulative impacts be based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan. The most recently adopted regional air quality plan for this area is the *2005 Ozone Strategy*. If a project is proposed in a city or county with a general plan that is consistent with the *2005 Ozone Strategy* and the project is consistent with that general plan, the project would not have a significant cumulative impact.

To analyze if the proposed project is consistent with the *2005 Ozone Strategy*, the *BAAQMD CEQA Guidelines* recommends evaluating whether: (1) the project provides buffer zone for odors and toxics; (2) the extent to which transportation control measures (TCMs) are implemented; and (3) the consistency with the CAP's projections for vehicle miles traveled (VMT) and population. If a project would fulfill the criteria above, the project would not be considered to cause a cumulatively significant impact to air quality. The proposed project would involve minor infrastructure improvements to an existing racetrack. A majority of the TCMs contained in the *2005 Strategy* are related to mass transit, carpooling, and facilities associated with commercial uses (e.g., bicycle facilities and vanpool services and incentives). Due to the location of the proposed project, linking to a mass transit line would be difficult. In addition, employee commute trips using alternative modes of transportation (e.g., bicycle, bus, train) would not likely be feasible. Currently, there is no existing mass transit or planned mass transit to link residents in the Bay Area or Central Valley to the proposed project. Although carpooling would be an option that would be consistent with TCMs in the *2005 Strategy*, the proposed project would not have control over the ridership of spectators and participants, which account for a majority of the vehicle trips associated with operational emissions. A ridership of 2.75 persons per vehicle was assumed for all participants and spectators based on the traffic study for the proposed project (see **Section 4.15 Transportation and Traffic**) prepared by Omni-Means, which is included in **Appendix 4.15**. As a conservative estimate, all employees were assumed to drive alone. The following TCM would be applicable to the proposed project:

- TCM 1 – Support Voluntary Employer-Based Trip Reduction Programs: The proposed project would offer project employees incentives for carpooling or using alternative modes of transportation for commute trips.

As mentioned above, employee trips would account for a small percentage of total vehicle trips and associated emissions. In addition, the potential program would be voluntary, which would not guarantee any trip reduction. Therefore, the proposed project would not be able to implement TCMs that would reduce VMT or vehicle trips.

Lastly, the proposed project would not develop a land use that would induce population growth. The proposed infrastructure improvements associated with the proposed project are not the typical infrastructure that would induce population growth (e.g., wastewater treatment plant, water supply infrastructure). Nevertheless, as a result of the increased spectators and drifting races, the proposed project would generate more VMT and resultant criteria pollutant emissions than those that would be generated if the proposed improvements did not occur. Therefore, implementation of the proposed project would increase the amount of VMT occurring within the SFBAAB and other air basins.

As discussed above, the proposed project would not be consistent with all of the criteria used to determine consistency with the *2005 Ozone Strategy*. However, the proposed project would not induce population growth in the area and would not cause an individually significant impact. Furthermore, all appropriate control measures would be implemented during construction to minimize the generation of fugitive dust. Nevertheless, the proposed project would not be consistent with the *2005 Ozone Strategy*. Accordingly, the proposed project would have a cumulatively considerable impact on air quality in the region. This impact is considered significant. There is no feasible mitigation.

4.3.3.3.3.2 Global Climate Change

In addition to the project-level impact on global climate, the project's contribution to state, national, and global GHG emission inventories and the resultant effect on global climate must also be evaluated on a cumulative basis. The project would generate GHG emissions, which would contribute to potential cumulative impacts of GHG emissions on global climate.

Under Section 15130 of the *CEQA Guidelines*, an EIR must discuss cumulative impacts if a project would have a cumulatively considerable effect on a resource, where "cumulatively considerable" is defined as "…the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines n.d.)." However as Section 15064(h)(4) states, "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable (CEQA Guidelines(a) n.d.)." Therefore, the fact that the proposed project would result in emissions of GHGs (chiefly carbon dioxide), and *global* GHGs emissions contribute to the greenhouse effect and the resultant impacts on global climate, does not mean that the proposed project would have a cumulatively considerable impact on global climate. Accordingly, the potential contribution of the project to this cumulative impact is evaluated under other criteria.

To date, no quantitative emission thresholds or similar criteria have been established to evaluate the cumulative impact of a single project on global climate. In the absence of quantitative emissions thresholds, consistency with adopted programs and policies is used by many jurisdictions to evaluate the significance of cumulative impacts. A project's consistency with the implementing programs and regulations to achieve the statewide GHG emission reduction goals established under Executive Order S-3-05 and AB 32 cannot yet be evaluated because they are still under development. Nonetheless, the Climate Action Team, established by Executive Order S-3-05, has recommended strategies for implementation at the statewide level to meet the goals of the Executive Order. In the absence of an adopted plan or program, the Climate Action Team's strategies serve as current statewide approaches to reducing the State's GHG emissions. As no other plan or program for GHG emissions that would apply to the project has been adopted, consistency with these strategies is assessed to determine if the project's contribution to cumulative GHG emissions would be considerable and would impair or prevent attainment of AB 32's goals.

In its report to the Governor and the Legislature, the Climate Action Team recommended strategies that could be implemented by various state boards, departments, commissions, and other agencies to reduce GHG emissions (California EPA Climate Action Team 2006). The Climate Action Team strategies that are relevant to the proposed project, the implementing agencies, and the project's design features or mitigation measures that would be consistent with these strategies are listed in **Table 4.3-36, Project Features and Mitigation Measures to Achieve Climate Action Team Strategies**. Based on the analysis in **Table 4.3-36**, the proposed project would lessen its contribution to GHG emissions and global climate due to its consistency with these strategies. However, in the absence of an established threshold and understanding that the proposed project would result in the emission of some GHGs, the contribution of the project to the cumulative GHG emissions is considered cumulatively considerable.

Table 4.3-36
Project Features and Mitigation Measures to Achieve Climate Action Team Strategies

CAT Strategy	Implementing Agency	Project Feature/Mitigation
Vehicle Climate Change Standards	Air Resources Board	The project would be consistent with this strategy to the extent that new passenger vehicle and light trucks are purchased by the project's participants and spectators starting in the 2009 model year.[1]
HFC Reduction Strategies	Air Resources Board	Project air conditioning systems would comply with the latest standards for new systems. Use of consumer products using HFCs would comply with CARB regulations, when adopted.

CAT Strategy	Implementing Agency	Project Feature/Mitigation
Building Energy Efficiency Standards in Place	Energy Commission	The project will meet or exceed California energy standards or energy efficient lighting requirements.
Appliance Energy Efficiency Standards in Place	Energy Commission	
Water Use Efficiency	Department of Water Resources	Use of landscape and ornamental water use will conform with the local water efficient landscape ordinance or the landscape and ornamental budget outlined by the Department of Water Resources.

Source: Impact Sciences, Inc.

1 *The US EPA has denied the waiver that would allow these standards to be implemented; however, the state has filed a lawsuit to overturn this decision. The implementation of these standards and the time schedule for the introduction of compliance passenger vehicles and light trucks are in question at this time.*

Conclusion: Significant

Mitigation Measure:

The nature of the proposed project's activities (i.e., motor vehicle racing) limits the range of mitigation measures available to reduce impacts. The majority of the project's GHG emissions would be the result of racing activities. In addition, the proposed project is not located adjacent to any mass transit system that would be convenient for visitors. The closest mass transit service station is the San Joaquin Regional Transit District (SJRTD) Interregional Commuter Bus Service, which is located on Grant Line Road and Naglee Road approximately 2 miles away. This would not be a feasible distance for visitors to walk to project site. Furthermore, the Altamont Motorsports Track currently operates at near full capacity in recent years The proposed project would add an incremental amount of potential visitors to the existing operation. Nonetheless, the following mitigation measures are suggested to reduce the operational GHG emissions. Other measures that could reduce a project's GHG emissions are not applicable to the proposed project. Such measures typically involve (1) green building techniques, but the project does not involve new building construction (except mobile homes for caretakers), (b) water conservation, but the project does not involve large amounts of water use, (3) land use measures such as high-density residential or mixed-use development, but the project does not change the existing land use, or (4) transportation control measures, but the project is not conducive to such measures. Implementation of these measures is not expected to substantially reduce the project's GHG emissions because these emissions are primarily related to participant, spectator, and employee vehicle trips and racecars.

AQ-1 The applicant shall install electrical hook ups for motorhomes visiting the project site to eliminate emissions associated with motorhome generators.

AQ-2 The applicant shall install photovoltaic solar panels on the project site to reduce the amount of electrical usage. Photovoltaic systems shall provide a minimum of 25 percent of the estimated electrical demand of the Altamont Motorsports Park, including the electrical demands of motorhomes as indicated in Mitigation Measure AQ-1.

AQ-3 The applicant shall provide receptacles for recycling of beverage containers and other food service items and paper goods.

Conclusion: Significant and unavoidable

Potential Impact 4.3-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

4.3.3.2.3 CO Hotspots

As discussed above and shown in **Table 4.3-35**, traffic associated with the proposed project would not generate CO concentrations at impacted intersections that exceed the CO standards. The highest concentrations generated during the proposed project's operational level would be approximately 34 percent of the state 8-hour CO standard. It should be noted that the proposed project would only contribute a fraction of that traffic and subsequent CO emissions. Therefore, the proposed project would not expose the public to substantial pollutant concentrations; impacts would be less than significant.

4.3.3.2.4 Toxic Air Pollutants

Toxic air pollutants are not expected to occur in any large amounts in conjunction with the operation of proposed project. Only common forms of hazardous or toxic substances typically used, stored, or sold in conjunction with cleaning activities would be present in small quantities. Most uses of such substances would occur indoors (e.g., bathrooms). Surrounding land uses include residential homes to the south, west, and northwest of the project site. No large stationary sources of toxic air pollutants are associated with the project site or its operation. Therefore, impacts would be less than significant.

The proposed project will be located near Interstate 580, a major route traveled by heavy-duty transportation trucks, as well as other motor vehicles. These trucks are a substantial source of diesel exhaust particulate matter (DPM), which CARB has designated as a toxic air contaminant. The CARB's *Air Quality and Land Use Handbook* states, "Air pollution studies indicate that living close to high traffic and the associated emissions may lead to adverse health effects beyond those associated with regional air pollution in urban areas" (CARB 2005). The *Air Quality and Land Use Handbook* cites several studies linking adverse respiratory health effects (e.g., asthma) to proximity to roadways with heavy traffic densities, where the distances between the roadway and the receptors were 300 to 1,000 feet. Other studies suggest that such impacts diminish with distance, and a substantial benefit occurs if the separation distance is greater than 500 feet. A distance of 0.25 mile is recommended by the BAAQMD staff to avoid potential health impacts to sensitive receptors from major roadways. Although the racetrack is slightly less than 0.25 mile from Interstate 580, the project's sensitive receptors (i.e., caretaker homes) would be located on the western portion of the property line, which would be further than 0.25 mile from the highway. Therefore, no sensitive receptors would be significantly exposed to the emissions from a major roadway, and the project would contain a sufficient buffer to avoid impacts from TACs.

Conclusion: Less than Significant

Mitigation: None required

Potential Impact 4.3-5: Would the project create objectionable odors affecting a substantial number of people?

The proposed project could potentially create objectionable odors as a result of food preparation, race car vehicle exhaust emissions, and tire smoke from drifting events. Airborne odors associated with food preparation would result primarily from cooking activities within the food services and eating establishments that may occur on site. Food-related odors would be typical of food service businesses and are not considered objectionable by most individuals. Food wastes can, however, putrefy if left on site in dumpsters for long periods of time without frequent disposal and can generate objectionable odors. In each case, such odors would be controlled in accordance with Alameda County Vector Control Services District and BAAQMD Regulation 7, which limits the amount of general odorous substances and specific emissions of odorous compounds.

Potential odors associated with racing events would result from race car exhaust emissions and tire smoke from drifting events. Although both sources could generate objectionable odors, it is not likely that these odors will affect on- or off-site receptors. The closest on-site residential receptors (i.e., caretaker mobile homes) would be located on the westerly portion of the project site. Caretakers would be employees of the proposed project and therefore would be aware of the potential odors associated with its operation. It is not anticipated that the project's day-to-day operations would generate an objectionable source that would result in a significant change from existing odor impacts to local receptors.

The proposed project is not surrounded by any large source of odor that is anticipated to impact receptors on the project site. Therefore, the impact with respect to this criterion is considered less than significant.

Conclusion: Less than significant

Mitigation: None required