3.4 AIR QUALITY

This section evaluates the short- and long-term air quality impacts that would result from buildout of the Soldier Field Subdivision (project). Information in this section is based primarily on the Bay Area Air Quality Management District (BAAQMD) *CEQA Guidelines: Assessing the Air Quality Impacts of Project and Plans* (December 1999), prepared by the BAAQMD; Air Quality Data (California Air Resources Board [CARB] 2000 through 2004); the *Soldier Field Project Traffic Impact Analysis* (June 2005), prepared by RBF Consulting; and the City of Lafayette *General Plan (General Plan)*.

3.4.1 Environmental Setting

3.4.1.1 Climate

The City of Lafayette (City) is within the Diablo Valley-San Ramon Valley subregion of the San Francisco Bay Area Air Basin. This subregion is east of the eastern mountains of the California Coast Range from just south of the City of Martinez to Dublin. Lafayette is in the San Ramon Valley portion of the subregion, which includes the area from Walnut Creek to Dublin. The mountains of the Coast Range west of the City are 1,500 to 2,000 feet in elevation and block much of the marine air from reaching the valleys. During the day, air currents travel up valley and westerly. During the night, surface air inversions occur and air flows down the valley.

The Diablo Valley-San Ramon Valley subregion is characterized by low wind speeds. Monitoring stations in Concord and Danville report annual average wind speeds of five miles per hour. Air temperatures are cooler in the winter and warmer in the summer, with summer temperatures reaching into the 80s and 90s (degrees Fahrenheit).

Pollution potential is relatively high in this subregion because of the light wind combined with surface-based inversions and terrain that restricts air flow. As a result, air pollutants do not disperse well. San Ramon Valley can experience high pollution concentrations due to motor vehicle emissions and emissions from fireplaces and wood stoves. In the summer months, ozone and ozone precursors are often transported into the subregion and can generate air quality problems.

3.4.1.2 Local Ambient Air Quality

The California Air Resources Board (CARB) maintains several stations throughout Contra Costa County that monitor ambient air. The closest air monitoring station is in Concord on Treat Boulevard. The Concord Station monitors ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_x), sulfur dioxide (SO_2) and particulates (PM_{10}). Pollutant monitoring results for the years 2002 to 2004 indicate that air quality in the Concord area has been generally good. A summary of air quality data from 2000 to 2004 and state and federal air quality standards are provided in Table 3.4-1 (Local Ambient Air Quality Levels [2000-2004]). This table lists the monitored maximum concentrations and number of exceedances of both federal and state air quality standards each year, as available.

Table 3.4-1 Local Ambient Air Quality Levels (2000-2004)

Pollutant	California Standard	Federal Primary Standard	Year	Maximum[1,2] Concentration	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3) for 1 hour	0.09 ppm	0.12 ppm	2000 2001 2002 2003 2004	0.138 0.134 0.103 0.101 0.097	1/0 1/0 5/0 5/0 1/0
Ozone (O_3) for 8 hours	0.07 ppm	0.08 ppm	2000 2001 2002 2003 2004	0.094 0.087 0.089 0.085 0.083	NM/1 NM/1 NM/3 NM/1 NM/0
Carbon Monoxide (CO)	9.0 ppm (8-hour)	9.0 ppm (8-hour)	2000 2001 2002 2003 2004	2.70 2.67 2.28 1.99 2.00	0/0 0/0 0/0 0/0 0/0
Nitrogen Dioxide (NO_x)	0.25 ppm (1-hour)	0.053 ppm annual average	2000 2001 2002 2003 2004	0.074 0.065 0.063 0.062 0.065	0/NM 0/NM 0/NM 0/NM 0/NM
Particulate Matter (PM_{10})[3]	50 : g/m^3 (24 hours)	150 : g/m^3 (24 hours)	2000 2001 2002 2003 2004	53.8 105.8 62.8 32.0 48.3	2/0 3/0 3/0 0/0 1/0
Fine Particulate Matter ($PM_{2.5}$)[3,4]	12 μg/m^3 Annual Arithmetic mean	65 : g/m^3 (24 hours)	2000 2001 2002 2003 2004	52.6 68.2 76.7 49.7 73.7	NM /0 NM /1 NM /1 NM /0 NM /1
Sulfur Dioxide (SO_2)	0.25 ppm (1 hour)	0.14 ppm for 24 hours or 0.03 ppm annual arithmetic mean	2000 2001 2002 2003 2004	0.005 0.005 0.007 0.003 0.010	0/0 0/0 0/0 0/0 0/0

ppm = parts per million; PM_{10} = particulate matter 10 microns in diameter or less; NM = not measured; μg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

1. All measurements were taken at Concord Monitoring Station, at 2975 Treat Boulevard, Concord, CA 94518.
2. Maximum concentrations are measured over the same period as the California standard.
3. PM_{10} exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
4. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Source: Aerometric Data Analysis and Measurement System (ADAM), summaries from 2000 to 2004, http://www.arb.ca.gov/adam.

Ozone

Ozone (O_3) is a photochemical pollutant, and needs volatile organic compounds (VOCs), nitrogen oxides (NO_x), and sunlight to form; therefore, VOCs and NO_X are ozone precursors. VOCs and NO_x are emitted from various sources throughout the City. To reduce ozone concentrations, it is necessary to control the emissions of ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere, several hours in a stable atmosphere and strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. The state ozone standard is 0.09 parts per million (ppm),

averaged over one hour. From 2000 through 2004, the O_3 levels at the Concord Monitoring Station ranged between 0.138 ppm and 0.097 ppm, and exceeded the one-hour state standard 13 times.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause headaches, dizziness, unconsciousness and death. State and federal standards for CO were not exceeded between 2000 and 2004 at the Concord Monitoring Station.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction. State and federal standards for NO_2 were not exceeded between 2000 and 2004 at the Concord Monitoring Station.

Particulate Matter

Pollution from particulate matter consists of very small liquid and solid particles floating in the air, and is a mixture of materials that can include smoke, soot, dust, salt, acids and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. Some particles are large or dark enough to be seen as soot or smoke; others are so small that they can be detected only with an electron microscope. PM_{10} particles are less than or equal to 10 microns in aerodynamic diameter; $PM_{2.5}$ particles are less than or equal to 2.5 microns in aerodynamic diameter, and are a subset (portion) of PM_{10}.

PM_{10} and $PM_{2.5}$ particles are small enough to be inhaled into, and lodge in, the deepest parts of the lung. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. The state standard for PM_{10} is 50 micrograms per cubic meter ($\mu g/m^3$) averaged over 24 hours; this standard was exceeded nine days at the Concord Station between 2000 and 2004. The federal standard for PM_{10} is 150 $\mu g/m^3$ averaged over 24 hours; this standard was not exceeded between 2002 and 2004. The federal standard for $PM_{2.5}$ is 65 : g/m averaged over 24 hours, and was exceeded 3 days between 2002 and 2004 at the Concord Station.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent gas belonging to the family of sulfur oxide gases (SO_x), formed primarily by combustion of sulfur-containing fossil fuels (primarily coal and oil), metal smelting and other industrial processes. The major health concerns associated with exposure to high concentrations of SO_x are effects on breathing, respiratory illness, diminishment of pulmonary defenses and aggravation of existing cardiovascular disease. Sulfur oxides can react to form sulfates, which significantly reduce visibility. Sulfur dioxide (SO_2) (often used interchangeably with SO_x) did not exceed federal or state standards at the Concord Monitoring Station between 2000 and 2004.

3.4.1.3 Air Quality Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than are the general population. Sensitive populations ("sensitive receptors") that are close to localized sources of air toxics and CO are of particular concern. Land uses that are considered to be sensitive receptors are residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent center and retirement homes. The project site is located within a residential neighborhood and therefore would be located near sensitive receptors

3.4.2 Regulatory Setting

3.4.2.1 Federal

Federal Clean Air Act

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to identify ambient air quality standards to protect public health and welfare. These standards identify levels of "criteria pollutants" that are considered safe. The criteria pollutants are O_3, CO, NO_x, SO_2, PM_{10} and $PM_{2.5}$, and lead (Pb). Refer to Table 3.4-2 (National and California Ambient Air Quality Standards).

Table 3.4-2 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]	Federal Standards[2]	
		Concentration [3]	Primary [3, 4]	Secondary [3, 5]
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m)	0.12 ppm (235 μg/m^3)	0.12 ppm (235 μg/m^3)
	8 Hour	0.07 ppm	0.08 ppm (157 μg/m^3)	0.08 ppm (157 μg/m^3)
Particulate Matter (PM_{10})	24 Hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual Arithmetic Mean	20 μg/m^3	50 μg/m^3	50 μg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	65 μg/m^3	65 μg/m^3
	Annual Arithmetic Mean	12 μg/m^3	15 μg/m^3	15 μg/m^3
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_x)	Annual Arithmetic Mean	N/A	0.053 ppm (100 μg/m^3)	0.053 ppm (100 μg/m^3)
	1 Hour	0.25 ppm (470 μg/m^3)	N/A	N/A
Lead (Pb)	30 Days Average	1.5 μg/m^3	N/A	N/A
	Calendar Quarter	N/A	1.5 μg/m^3	1.5 μg/m^3
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	N/A	0.030 ppm (80 μg/m^3)	N/A
	24 Hour	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)	N/A
	3 Hour	N/A	N/A	0.5 ppm (1300 μg/m^3)
	1 Hour	0.25 ppm (655 μg/m^3)	N/A	N/A
Visibility-Reducing Particles	8 Hour (10 am to 6 pm, PST)	Extinction Coefficient = 0.23 km@<70% RH	**No Federal Standards**	
Sulfates	24 Hour	25 μg/ m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/ m^3)		

ppm = parts per million; μg/ m^3 = micrograms per cubic meter; mg/ m^3 = milligrams per cubic meter; km = kilometers; RH = relative humidity; PST = pacific standard time; N/A = not applicable.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter-PM10, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, the CARB identified vinyl chloride as a Toxic Air Contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. EPA also may designate an area as attainment/unclassifiable if (1) monitored air quality data show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine the air quality in the area. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over the three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees centigrade (°C) and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 millimeters (mm) of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume (micromoles of pollutant per mole of gas).
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: California Air Resources Board, April 2005.

Pursuant to the CAA, the EPA has classified air basins (distinct geographic regions) as being in either "attainment" or "non-attainment" for each criteria pollutant, based on whether or not the federal ambient air quality standards have been achieved. Some air basins have not received sufficient analysis for certain criteria air pollutants and are designated as "unclassified" for those pollutants. Contra Costa County is located in the San Francisco Bay Area Air Basin. At the federal level, the Bay Area has been designated as attainment for CO, NO_x, SO_2 and PM_{10}, as non-attainment for O_3, and as unclassified for $PM_{2.5}$.

3.4.2.2 State

California Air Resources Board

The CARB is the state agency responsible for regulating mobile source (vehicle) emissions and overseeing the activities of local air pollution control districts. In addition, the CARB has established state air quality standards. The state standards are generally more stringent than the federal standards. Under the California Clean Air Act (CCAA), which was patterned after the CAA, areas have been designated as attainment, non-attainment, or unclassified with respect to state air quality standards. These standards apply to the same criteria pollutants as does the CAA, but also include sulfate, visibility, hydrogen sulfide and vinyl chloride. At the state level, the Bay Area has been designated as attainment for CO, NO_x, SO_2 and Pb, and non-attainment for O_3, $PM_{2.5}$ and PM_{10}.

3.4.2.3 Local and Regional

Bay Area Air Quality Management District

The San Francisco Bay Area Air Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. In response to the CCAA and subsequent amendments, the BAAQMD prepared the 2000 Clean Air Plan (CAP) for adoption by the CARB on December 20, 2000. The CAP includes a control strategy to ensure that the plan continues to include "all feasible measures" to reduce ozone, an update of the District's emissions inventory, estimates of emission reductions achieved by the plan, and an assessment of air quality trends. The CAP describes the Bay Area's current plans for meeting state clean air laws. The goal of the CAP is to improve air quality in the region, especially for ozone, through tighter industry controls, cleaner cars and trucks,

cleaner fuels, and increased commute alternatives. The CAP includes an integrated set of transportation control measures designed to meet the specific needs of the Bay Area. Measures include improved bicycle access and facilities, mobility improvements, employer-based trip reductions, user incentives and implementation measures.

City of Lafayette General Plan

The *General Plan* addresses issues associated with complying with local air quality standards in the Open Space and Conservation Element, and outlines a series of goals and policies aimed at protecting air quality in Lafayette.

3.4.3 Environmental Analysis

3.4.3.1 Thresholds of Significance

CEQA Requirements

Air quality impacts resulting from implementation of the proposed project would be considered significant if they 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 in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Federal Requirements

For purposes of this air quality analysis, actions that violate federal standards for criteria pollutants (i.e., primary standards designed to safeguard the health of people considered to be sensitive receptors, and outdoor and secondary standards designed to safeguard human welfare) would be considered significant impacts. Additionally, actions that violate state standards developed by the CARB or criteria developed by the BAAQMD, including thresholds for criteria pollutants, would be considered significant impacts. Table 3.4-3 (Construction and Operational Air Emissions Thresholds) provides the thresholds set forth by the BAAQMD.

Table 3.4-3 Construction and Operational Air Emissions Thresholds

Pollutant	Emissions Threshold (pounds/day)
	Daily
Reactive Organic Gases (ROGs)	80 pounds
Nitrogen Oxides (NOx)	80 pounds
Particulate Matter (PM_{10})	80 pounds
Source: Bay Area Air Quality Management District, *CEQA Guidelines,* December 1999.	

In addition to the pounds-per-day thresholds cited above, the BAAQMD has thresholds applicable to CO emissions that require projects to perform localized CO modeling.

The BAAQMD's approach to analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions. The BAAQMD has identified a set of feasible PM_{10} control measures for construction activities. These control measures are listed in Table 3.4-4 (Bay Area Air Quality Management District [BAAQMD] Control Measures). As noted in Table 3.4-4, "Basic Measures" should be implemented at all construction sites, regardless of size. Additional "Enhanced Measures" should be implemented at larger construction sites (greater than four acres) where PM_{10} emissions generally will be higher. Table 3.4-4 also lists other PM_{10} controls ("Optional Measures") that may be implemented if further emission reductions are deemed necessary by the lead agency.

The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. According to the BAAQMD, quantification of construction emissions is not necessary (although a lead agency may elect to do so). The lead agency should review Table 3.4-4. If a project implements all of the control measures indicated in Table 3.4-4 (as appropriate, depending on the size of the project area), then air pollutant emissions from project construction activities would be considered a less than significant impact.

Table 3.4-4 Bay Area Air Quality Management District (BAAQMD) Control Measures

Basic Control Measures - The following controls should be implemented at all construction sites.
• Water all active construction areas at least twice daily. • Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least two feet of freeboard. • Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. • Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. • Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures - The following measures should be implemented at construction sites greater than four acres in area.
• All "Basic" control measures listed above. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

• Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.) • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff onto public roadways. • Replant vegetation in disturbed areas as quickly as possible.
Optional Control Measures - The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reductions.
• Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site. • Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour (mph). • Limit the area subject to excavation, grading and other construction activity at any one time.
Source: Bay Area Air Quality Management District, *CEQA Guidelines*, December 1999.

3.4.3.2 Potential Impacts and Mitigation

Potential Impact 3.4-1: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

In formulating its compliance strategies, the BAAQMD relies on planned land uses established in local general plans. When a project proposes to change planned uses assumed in an adopted general plan (by requesting a general plan amendment), the project may depart from the assumptions used to formulate BAAQMD plans in such a way that the cumulative results of incremental changes may hamper or prevent the BAAQMD from achieving its goals. Land use patterns influence transportation needs, and motor vehicles are the primary source of air pollution. Projects proposed in jurisdictions with general plans that are consistent with the BAAQMD's Clean Air Plan and projects that conform to those general plans would not have cumulative impacts.

The proposed project, both in terms of land use and density, would be consistent with the land uses established in the *General Plan* and, as such, traffic volumes representing buildout of the project area were used to develop projections in the Clean Air Plan. Therefore, the project would not conflict with the Clean Air Plan and would result in no related impacts. No mitigation is required.

Potential Impact 3.4-2: Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Less Than Significant Impact)

The proposed project would not individually generate the emission of criteria pollutants at levels that would exceed established standards. Within the regional context, the proposed project would incrementally contribute criteria pollutants for which the San Francisco Bay Area Basin is in violation of established criteria. However, the level of specific emissions generated by the proposed project would not exceed established air quality standards, and would not contribute substantial amounts of criteria

pollutants to the region's air basin. Thus, the project would result in a less than significant impact and no mitigation is required.

Potential Impact 3.4-3: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Less Than Significant Impact With Mitigation)

Construction

Project construction could generate substantial amounts of dust (including PM_{10} and $PM_{2.5}$) from sources such as grading activities and vehicle travel over unpaved surfaces. Less than significant amounts of other criteria pollutants would be emitted from the operation of heavy equipment (primarily diesel powered) and construction worker automobile trips (primarily gasoline powered).

The project area is considerably below the state and federal pollutant threshold level for all constituents except particulate matter (PM_{10}) and ozone. PM_{10} is the pollutant of greatest concern with respect to construction activities, including excavation, grading, vehicle travel on paved and unpaved roads, and vehicle and equipment exhaust. Particulate emissions can lead to adverse health effects as well as nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Project construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil and the weather. Larger dust particles would settle out of the atmosphere close to the construction site resulting in potential soiling nuisances for adjacent land uses.

As shown in Table 3.4-5 (Project Construction Air Emissions), the proposed project would be below the BAAQMD thresholds. A listing of mobile and stationary construction equipment is included in the air quality modeling, contained in Appendix B. The project emissions were compared to the BAAQMD operational thresholds because the BAAQMD does not have construction thresholds. The proposed project would be required to implement both Basic and Enhanced Control Measures recommended by the BAAQMD. Implementation of Mitigation Measure 3.4-3, which incorporates the BAAQMD Basic and Enhanced Control Measures, would ensure that impacts would be less than significant.

Table 3.4-5 Project Construction Air Emissions

Emissions[2]	Pollutant (pounds/day)[1]				
	ROG/VOCs	NO_X	CO	SO_X	PM_{10}
Unmitigated Emissions[3]	11.08	76.09	84.16	0.03	23.26
BAAQMD Thresholds	80	80	NA	NA	80
Are thresholds exceeded?	***No***	***No***	***NA***	***NA***	***No***
Mitigated Emissions[3]	11.08	76.09	84.16	0.03	6.39
BAAQMD Thresholds	80	80	NA	NA	80
Are thresholds exceeded?	***No***	***No***	***NA***	***NA***	***No***

CO = carbon monoxide; NO_X = nitrogen oxides; ROG = reactive organic gases; VOCs = volatile organic compounds; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns in diameter or less.

1. Emissions calculated using the URBEMIS 2002, V 8.7 Computer Model, as recommended by the BAAQMD. Refer to Appendix B (Air Quality Data), for assumptions used in this analysis, including quantified air emissions reduction by mitigation measures.
2. Calculations include emissions from numerous sources, including site grading, construction worker trips, stationary equipment, diesel mobile equipment, and asphalt off-gassing using a maximum amount of grading per day of 1.5 acres and 22 working days per month. Results are based on the maximum amount of site grading, construction and paving activity that would occur in one day.
3. The reduction credits for construction emission mitigations are based on mitigations included in the UREBMIS 2002 computer model and as typically required by the BAAQMD. The mitigations include the following: proper maintenance of mobile and other construction equipment; speed limitation on unpaved roads of 15 miles per hour (mph); and watering of exposed surfaces.

Mitigation Measure 3.4-3: Prior to Final Map approval or issuance of a grading permit, whichever occurs first, the project sponsor shall submit a grading plan to the City's Engineering Services Manager for review and approval. The grading plan shall include measures to reduce emissions from construction equipment and wind blown soils and shall be followed for all construction activities for the project. The following measures shall be incorporated into the grading plan:

a. Water all active construction areas at least twice daily.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.

c. Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.

d. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

e. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).

f. Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).

g. Limit traffic speeds on unpaved roads up to 15 miles per hour (mph).

h. Install sandbags or other erosion control measures to prevent silt runoff onto public roadways.

i. Replant vegetation in disturbed areas as quickly as possible.

Emission levels for construction activities vary depending on the type of equipment, duration of use, operation schedules and the number of construction workers. Although these emissions could temporarily contribute to local air quality degradation, the BAAQMD does not consider construction exhaust emissions significant because they have already been included in the District's regional planning inventories and are not expected to impede regional attainment or maintenance of air quality standards. Therefore, impacts would be less than significant and no mitigation is required.

Post-Construction and Operation

The *BAAQMD CEQA Guidelines* provide a screening procedure to determine whether a project would result in exceedances of NO_x standards. Table 6 of the *BAAQMD CEQA Guidelines* provides size or activity levels for various types of land uses that, based on default assumptions, would result in mobile source air emissions exceeding the District's threshold of significance for NO_x (80 pounds [lbs.]/day). According to Table 6 of the *BAAQMD CEQA Guidelines*, 320 single-family units would result in exceedances of NO_x standards. The BAAQMD recommends that a more detailed analysis be conducted

for any project whose size is within 20 percent of the values indicated in Table 6. The District generally does not recommend a detailed air quality analysis for projects generating less than 2,000 vehicle trips per day, unless warranted by the specific nature of the project or project setting. Implementation of the proposed project would result in construction of eight residential units generating 114 daily trips. Therefore, air quality impacts associated with long-term use of the project would be less than significant. No mitigation is required

Localized Carbon Monoxide

The BAAQMD requires proposed projects to analyze the potential for localized CO hotspots. Pursuant to the BAAQMD CO screening guidelines, a project would have CO impacts if the following were to occur:

- Project traffic would impact intersections or roadway links operating at level of service (LOS) D, E or F or would cause LOS to decline to D, E or F.
- Project traffic would increase traffic volumes on nearby roadways by 10 percent or more.
- Project would contribute to CO concentrations exceeding the State Ambient Air Quality Standard of nine parts per million (ppm) averaged over 8 hours and 20 ppm for one hour.

According to the *Traffic Impact Analysis,* the current LOS at nearby intersections is LOS A. Future projections with the proposed project would not change the LOS, which would remain at LOS A. In addition, the project would not significantly increase traffic along the area roadways. Therefore, impacts would be less than significant and no mitigation is required.

Potential Impact 3.4-4: Would the project expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant Impact)

The closest sensitive receptors to the project site would be adjacent residential uses. As indicated in the discussion of short-term construction impacts, the primary pollutant of concern is PM_{10}. However, implementation of the dust control measures specified in Mitigation Measure 3.4-3 would reduce potential PM_{10} emissions from construction activities to a less than significant level. Additionally, long-term operation of the proposed project would not result in a significant increase in emissions of criteria pollutants Therefore, impacts on sensitive receptors would be less than significant. No mitigation is required.

Potential Impact 3.4-5: Would the proposed project create objectionable odors affecting a substantial number of people? (No Impact)

The project does not propose any uses that would produce objectionable odors and no impact would result.