3.6 AIR QUALITY

This section discusses air quality throughout Napa County and how it may be affected by the proposed transportation improvement expenditure plan programs. Information provided in this section includes identification of existing air quality conditions and applicable laws and regulations governing air emissions and air quality standards. Information presented in this section is derived from the Bay Area Air Quality Management District's (BAAQMD) *CEQA Guidelines* and county and city general plans.

Environmental Setting

Climate and Topography

The San Francisco Bay Area's regional meteorological conditions are dominated by the semi-permanent high pressure area in the eastern Pacific Ocean, which is in large part responsible for the cool, dry summers and mild, moderately wet winters. This pressure system is also responsible for the daytime sea breeze that tends to provide fresh air to the Bay Area. Region-wide temperature inversions, caused by warm air positioned above the cool daytime surface air, prohibit vertical mixing of air. Thermal inversions may be caused by flows of cool marine air at the surface moving inland from the Golden Gate or by rapid cooling of the surface after sunset, which causes the air close to the surface to rapidly cool. Air pollution potential in the region is highest when inversions are strong and winds are light.

The proposed transportation improvements would be located primarily within the Napa Valley climatological subregion. Napa Valley extends from the Mayacamas Mountains to the west and the Vaca Mountains to the east. These mountains act as barriers to the prevailing northwesterlies. The valley is 27 miles long with American Canyon and Calistoga defining its southern and northern ends, respectively. It is widest at its southern end, 4.75 miles, and narrows northward to less than a mile at Calistoga.

Within the Napa Valley, an upvalley wind frequently develops during warm summer afternoons drawing from air flowing through the San Pablo Bay. During the evening, especially in the winter, downvalley drainage flow can occur. The prevailing winds in the area are upvalley and are generally low speed with an average wind speed of about 5 miles per hour (mph). The valley areas have a high potential for air pollution, since the prevailing winds can transport pollutants northward up the valley where it narrows, effectively trapping and concentrating pollutants under stable conditions. The light winds and associated stable conditions contribute to the buildup of air pollutant emissions from motor vehicles and stationary sources.

Average maximum temperatures during summer range from the low-80s Fahrenheit (F) in the southern end of the valley to the high-90s F in the northern end, while minimum winter temperatures are approximately high- to mid-20s F with the cooler temperatures favoring the northern end.

Air Pollutant Standards and Existing Emissions Concentrations

Ambient Air Quality Standards

National ambient air quality standards and state-level ambient air quality standards exist for ozone, CO, NO_2, SO_2, PM_{10}, and lead. The federal and State standards for these pollutants are summarized in Table 3.6-1. These ambient air quality standards establish upper limits designed to protect all segments of the population, including those most susceptible to a pollutant's adverse effects. The potential human health effects of these air pollutants are presented in Table 3.6-2. Pollution potential in the project vicinity are considered high because of the prevailing winds into the valley and sheltering effects of the two mountain ranges.

Table 3.6-1
Federal and State Air Quality Standards

Pollutant	Averaging Time	California Standard[1]	Federal Standard[2]
Ozone	1-hour	0.09 parts per million	0.12 parts per million
	8-hour	—	0.08 parts per million
Carbon Monoxide (CO)	1-hour	20.00 parts per million	35.00 parts per million
	8-hour	9.00 parts per million	9.00 parts per million
Nitrogen Dioxide (NO_2)	1-hour	0.25 parts per million	—
	Annual Average	—	0.053 parts per million
Sulfur Dioxide (SO_2)	1-hour	0.25 parts per million	—
	3-hour	—	0.5 parts per million
	24-hour	0.04 parts per million	0.14 parts per million
	Annual Average	—	0.03 parts per million
Particulate Matter (PM_{10})	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$
	Annual Geometric Mean	20 $\mu g/m^3$	—
	Annual Arithmetic Mean	—	50 $\mu g/m^3$
Fine Particulate Matter ($PM_{2.5}$)	24-hour	—	65 $\mu g/m^3$
	Annual Arithmetic Mean	12$\mu g/m^3$	15 $\mu g/m^3$
Lead (Pb)	30-day Average	1.5 $\mu g/m^3$	—
	Calendar Quarter	—	1.5 $\mu g/m^3$

Source: Summarized by EIP Associates from *BAAQMD CEQA Guidelines*, 1996, revised 1999.

Notes:

parts per million = parts per million by volume

$\mu g/m^3$ = micrograms per cubic meter

— = No standard exists for this category

1 California standards for ozone, CO, NO_2, SO_2, and particulate matter PM_{10} are values that are not to be exceeded.

2 Federal standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.08 parts per million or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of the monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentile is less than 65 $\mu g/m^3$.

Table 3.6-2
Health Effects Summary of the Major Criteria Air Pollutants

Air Pollutant	Adverse Effects
Ozone	eye irritation respiratory function impairment
Carbon Monoxide	impairment of oxygen transport in the blood stream aggravation of cardiovascular disease impairment of central nervous system function fatigue, headache, confusion, dizziness fatal in the case of very high concentrations in enclosed places
Nitrogen Dioxide	risk of acute and chronic respiratory illness
Sulfur Dioxide	aggravation of chronic obstruction lung disease increased risk of acute and chronic respiratory illness
Lead	impairment of blood functions and nerve constriction behavioral and learning problems in children
Particulate Matter	may be inhaled and lodge in and irritate the lungs increased risk of chronic respiratory disease with long exposure altered lung function in children may produce acute illness with sulfur dioxide

Source: *BAAQMD CEQA Guidelines*, April 1996, revised December 1999.

Regional Air Quality

With the assistance of BAAQMD, the California Air Resources Board (CARB) compiles inventories and projections of emissions of major pollutants. Air quality conditions are reported in the San Francisco Bay Area for both "criteria air pollutants" and "toxic air contaminants." Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards and pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter, and lead. Reactive organic compounds and gases (ROG) are also regulated pollutants because they are precursors to ozone formation. A subset of particulate matter is regulated as inhalable particulate matter less than ten microns in diameter (PM_{10}). Toxic air contaminants (TACs) refer to a category of air pollutants that poses a present or potential hazard to human health, but which tend to have more localized impacts than criteria air pollutants.

The San Francisco Bay Area air basin has a history of recorded violations of federal and state ambient air quality standards for ozone, CO, and particulate matter. Since the early 1970s, substantial progress has been made toward controlling these pollutants. Although the region has made considerable progress to meet the standards, violations of ambient air quality standards for particulate matter and ozone still occur. Table 3.6-3 presents a summary of the emissions inventory and trends of criteria air

pollutants for the Bay Area and Napa County. Estimates of substantial reductions in CO emissions projected from 2004 to 2010 are primarily based on projections of motor vehicle emissions reducing over time as older vehicles are retired. PM_{10} and SO_2 are forecast to increase slightly, due to growth in stationary sources and industrial activities. PM_{10} would also increase due to increased vehicle traffic

Table 3.6-3
Bay Area and Napa County Criteria Pollutant Emissions Inventory and Projections, 2004, 2010, and 2020 (Tons/Day - Annual Average)

	CO	ROG[1]	NO_x	SO_x	PM_{10}[2]
Bay Area					
2004 Estimated					
Total Emissions	2,321	413	560	71.6	189
On-Road Motor Vehicle Emissions	1,594	162	299	2.3	10
2010 Estimated					
Total Emissions	1,766	340	446	76.2	193
On-Road Motor Vehicle Emissions	1,105	113	217	1.1	10
2020 Forecasted					
Total Emissions	1,727	289	316	14.3	200
On-Road Motor Vehicle Emissions	1,125	61	101	1.2	10
Napa County					
2004 Estimated					
Total Emissions	65	11.1	11.6	.11	6.0
On-Road Motor Vehicle Emissions	39	4.3	6.8	.05	.19
2010 Forecasted					
Total Emissions	50	8.6	8.8	.07	6.1
On-Road Motor Vehicle Emissions	26	2.9	4.8	.02	.21
2020 Forecasted					
Total Emissions	36	6.8	5.2	.08	6.3
On-Road Motor Vehicle Emissions	12	1.6	2.2	.03	.22

Source: CARB, Emissions by Category, available at: www.arb.ca.gov/emisinv/eib.htm, accessed on August 18, 2005.

Notes:
1 Reactive organic gases exclude emissions from natural vegetation.
2 On-road motor vehicle emissions category in this table includes paved road dust generated by traffic.

Local Air Quality

The BAAQMD operates only one air quality monitoring station in Napa County. This station is located at 2552 Jefferson Avenue in the City of Napa. Data compiled from this monitoring station for the past three years (2002 through 2004) are used by CARB to estimate annual air emission averages and number of days a region is above State or federal standards. During the period of 2002 through 2004 for this station, the State 1-hour ozone standard was exceeded on three days, and the federal 1-hour and 8-hour standards were not exceeded at this station. During the period of 2002 through 2004 at the Napa-Jefferson Avenue station, the measured State 24-hour PM_{10} standard was exceeded four

times (all in 2002) and the federal 24-hour standard was not exceeded at all. The State annual average standard was also exceeded in 2002 and the federal annual standard was not exceeded at all.

The regional and local air quality data show that while the region has made considerable progress to meet the State and federal standards, violations of particulate matter and ozone standards still occasionally occur. The violations that typically occur in Napa County are caused by a combination of locally generated emissions and pollutants transported into the area from upwind sites. In this respect, the air quality conditions in the project area would continue to benefit from local and region-wide efforts to control emissions.

Most ambient air quality violations in the San Francisco Bay Area occur in central Contra Costa County, eastern Alameda County, and Santa Clara County. At locations throughout the Bay Area, the BAAQMD and CARB measure ambient levels of a variety of TACs. The BAAQMD conducts toxic monitoring at the Napa-Jefferson Avenue monitoring station. Commonly occurring TACs are benzene, 1,3-butadiene, toluene, and xylenes. Each of these compounds is commonly associated with automobile emissions. The monitored air quality conditions characterize the combined impacts of TACs emitted from various sources, including stationary (e.g., industry) and mobile sources.

Existing Sources of Emissions

Air pollution sources can be grouped into the following three categories: mobile source or "indirect source" emissions, "area source" emissions, and "stationary source" or "point source" emissions. Mobile source emissions include all on-road vehicles as well as off-road mobile equipment, aircraft, and trains. Area source emissions are stationary but typically occur throughout developed areas, including use of consumer products such as fertilizers, paints and sprays, and heating and cooling equipment. Although most area source emissions are stationary, the term "stationary source" generally refers to equipment operating at industrial or commercial facilities. Additional emissions are generated by natural sources such as wildfires. The inventory of emissions for each of the state's air basins is maintained by CARB and the local air district (e.g., BAAQMD).

Exhaust emissions from on-road motor vehicles are the primary source of reactive organic gases, nitrogen oxides, and carbon monoxide in the San Francisco Bay Area, and road dust sent airborne by traveling vehicles is a primary source of particulate matter. Area sources and stationary sources make up the remainder of the emission inventory in the region. The BAAQMD inventory of TAC sources identifies 19 sources within Napa County. These sources include two landfills, sanitary, waste, and a variety of other industrial and commercial services such as dry cleaners and funeral services.

Sensitive Receptors

BAAQMD defines sensitive receptors as facilities or land uses most likely to be used by people that are particularly sensitive to the effects of air pollutants (i.e., the very young, the elderly, people weak from illness or disease, or persons doing heavy work or exercise). Residential areas, schools, child care

centers, hospitals, retirement homes, and convalescent homes are each considered sensitive to air pollution.

Regulatory Setting

Air Quality Management Plans

Napa County is wholly within the San Francisco Bay Area air basin, which is under the jurisdiction of BAAQMD. This air basin also includes Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and parts of Solano and Sonoma Counties. The San Francisco Bay Area air basin does not meet the state ambient air quality standards for ozone and PM_{10}.

The federal Clean Air Act, as amended, and the California Clean Air Act (CCAA) provide the legal framework for attaining and maintaining the ambient air quality standards. Both the federal and state acts require that CARB designate as "nonattainment areas" portions of the state where federal or state ambient air quality standards are not met. Where a pollutant exceeds standards, air quality management plans must be formulated that demonstrate how the standards will be achieved. These laws also provide the basis for the implementing agencies to develop mobile and stationary source performance standards.

The BAAQMD is primarily responsible for planning, implementing, and enforcing the federal and state ambient air quality standards in the Bay Area. The BAAQMD adopted the *Bay Area '91 Clean Air Plan* to implement the requirements of the CCAA of 1988. Since the state ozone standard and the state PM_{10} standard are exceeded in the Bay Area region, the BAAQMD adopted the *2000 Clean Air Plan* on December 20, 2000, and submitted it to the CARB as required by the CCAA. The *2000 Clean Air Plan* includes a control strategy review to ensure that the plan continues to include "all feasible measures" to reduce ozone. No state plan is required to meet state PM_{10} standards.

Toxic Air Contaminants

TACs, which may have the potential to cause cancer or may pose a present or potential hazard to human health, are considered separately from the criteria pollutants in the regulatory process. Unlike criteria pollutants, there are no ambient standards for TACs; this is partially due to the localized nature of the adverse health impacts caused by TAC emissions. Stationary sources of TACs are regulated directly through emission standards and risk reduction strategies implemented at the sources of the emissions. When a new source of TACs is proposed, a health risk assessment may be needed to estimate the project's potential health risks. Individual TACs vary greatly in the risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. Where data are sufficient to do so, a "unit risk factor" can be developed for cancer risk. The unit risk factor expresses assumed risk to a hypothetical population in terms of the estimated number of individuals in a million who may develop cancer as the result of continuous, lifetime (70-year) exposure to 1 microgram per cubic meter ($\mu g/m^3$, equal to one part per million) of the TAC. Unit risk factors

provide a standard that can be used to establish regulatory thresholds for permitting purposes. However, they are not a measure of actual health risk because actual populations do not experience the extent and duration of exposure that the hypothetical population is assumed to experience. A project that passes this risk screening is judged to have an insignificant impact on public health. If a project fails this risk screening, this does not necessarily constitute a significant impact, but the project would require further review. Further review usually consists of more detailed dispersion modeling.

Federal, state, and local regulations and guidelines govern the level of analysis necessary for sources which appear to have the potential for high TAC emissions. The state Air Toxics Hot Spots Program and the BAAQMD Risk Management Policy require public notification, reporting, and risk assessments for facilities that have the potential to emit TACs that may cause substantial health risks. Many sources of TACs such as gasoline stations and dry cleaning businesses emit levels that are below the thresholds for public notification and reporting and would not be expected to cause substantial health risks.

There are no standards currently regulating the air toxics emitted by diesel engines at construction sites or making deliveries. However, the state has adopted various regulations, such as Title 13 California Code of Regulations (CCR) Section 1956.1-1956.4, 1956.8 and Title 13 CCR Section 2420 *et seq.*, that would reduce diesel emissions in the overall fleet of diesel-fueled vehicles. These regulations include new standards for diesel fuel, emissions standards, and inspection and maintenance requirements. In particular, the reformulated fuel requirements that have already been adopted by EPA and CARB are expected to reduce, but not eliminate, mobile source TAC emissions.

The major concern with air toxics from diesel exhaust is along heavily traveled transportation corridors and around permanent facilities, such as truck depots and distribution centers, with a high concentration of diesel-fueled vehicles. According to EPA's *Diesel Health Assessment Document* (July 2000), diesel vehicles account for a large portion of the toxic air contamination in the state, and the risk is highest where these vehicles concentrate (such as along freeways or in depots). For this reason, the state is taking an active role in devising new standards for these vehicles, for the fuel itself, and for alternative fuels.

CARB's *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Risk Reduction Plan) (approved on September 28, 2000 represents the state's comprehensive blueprint to substantially reduce diesel particulate emissions throughout the state. The plan contains the following components:

- New regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce diesel PM emissions by about 90 percent overall from current levels;
- New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost effective; and

- New phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 parts per million to provide the quality of diesel fuel needed by the advanced diesel PM emission controls.

The Risk Reduction Plan shows that on-road mobile sources comprise a good portion of the past, existing, and future (through 2010) diesel PM_{10} emission inventory within the state. Therefore, the risks associated with on-road diesel vehicles have been addressed by the state and will be substantially reduced by statewide programs over the next decade. There are no specific timelines for components of the Risk Reduction Plan, but CARB will implement proposed control measures and amendments to current regulations presented in the Plan over the next decade to reach the ultimate goal of reducing California's diesel PM emissions and associated cancer risk by 85 percent by 2020. In addition, it is now recognized that the maintenance of the truck fleet is a major determinant of the amount of emissions, as critical as the number of truck trips and the size of the trucks. Consequently, a primary means of reducing diesel exhaust emissions will be statewide efforts to retrofit and maintain the truck fleet.

CARB's Risk Reduction Plan indicates that total exposure estimates (outdoor and indoor) for diesel particulates resulted in a statewide risk of 380 excess cancer cases per million in the year 2000. The standards and requirements adopted in the Risk Reduction Plan would reduce this risk to 315 per million in 2010 and to 252 per million in 2020.

Regional Conformity

The federal 1990 Clean Air Act Amendments were enacted by EPA to ensure that federal actions do not cause or contribute to air quality violations in areas that do not meet federal standards. The EPA enacted a transportation conformity rule and a general conformity rule to ensure that all federally-funded transportation and non-transportation projects would not conflict with the applicable plans. For transportation projects in the Bay Area, the Metropolitan Transportation Commission (MTC) studies the conformity of the Regional Transportation Plan (RTP) to the State Implementation Plan (SIP).

The RTP is a long-range plan for transportation improvements, the most recently approved was the 2001 RTP. The RTP would be in conformity if it meets the approved emissions budget of the attainment plan. The plans are approved by the U.S. Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) should they meet the standards. Prior to project funding, approval, or implementation of any proposed transportation improvement expenditure plan project that includes federal funds would need to be in compliance with the SIP.

Local Regulations

The Napa County *General Plan* and the general plans of incorporated cities and towns in the county develop policies to help reduce local air emissions. The Napa County *General Plan* encompasses all of the unincorporated areas in the county. The local jurisdictions have the authority and responsibility to reduce air pollution through their policy power and decision-making authority. Specifically, they are

responsible for the assessment and mitigation of air emissions resulting from land use decisions. They are also responsible for the implementation of transportation control measures as outlined in the Clean Air Plan. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals.

Impacts and Mitigation Measures

Methodology

The analysis of potential air quality impacts resulting from the proposed transportation improvement expenditure plan programs has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the BAAQMD.[1]

Construction-related activities are generally short term in duration, and the BAAQMD does not recommend any significance criteria for their associated emissions. Instead, the BAAQMD bases the determination of significance on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by the *BAAQMD CEQA Guidelines* are implemented for a project, then construction emissions are not considered significant. Currently these control measures only apply to emission of fugitive dust. Emission controls are not required for the emissions generated by construction vehicle engines.

One reason that construction-level air quality emissions are not subjected to quantified thresholds is that the construction industry is an existing source of emissions within the Bay Area and the entire state. In general, construction equipment operates at one site for a short time, and when finished, moves on to a new construction site. The same situation occurs for the construction employees who make a living going from one site to another doing similar construction work. For those reasons, construction exhaust emissions are included in the regional emission inventory that is the basis for regional air quality plans. The construction vehicle emissions from this project are not considered to have a significant impact as they are included in the regional emission inventory and regional planning.

The BAAQMD currently recommends that projects with operational emissions that exceed any of the following thresholds be considered significant. These thresholds apply to the operational emissions associated with individual projects only; they do not apply to the construction-related emissions. The operational emissions that are generated by individual projects and exceed these thresholds are also considered to be cumulatively considerable by the BAAQMD:

- 80 pounds per day and/or 15 tons per year for NO_x, ROG, and PM_{10}[2]
- 550 pounds per day or 100 tons or more on an annual basis of CO emissions

---

[1] Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, April 1996, Revised December 1999.

[2] BAAQMD, *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, p. 16, April 1996, revised December 1999.

- CO concentrations exceeding the state ambient air quality standard of 9 parts per million (ppm) averaged over eight hours or 20 ppm for one hour

The BAAQMD also recommends that projects which have the potential to expose the public to TACs in excess of the following thresholds be considered significant:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million
- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

Detailed air impact analyses would be required for environmental review of each of the projects proposed under the transportation improvement expenditure plan. The individual projects would be required to evaluate project-specific air emissions for operational activities according to these BAAQMD thresholds.

Significance Criteria

The proposed transportation improvement expenditure plan programs would have significant environmental impacts related to air quality if they would:

- 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 nonattainment under 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.
- Create objectionable odors affecting a substantial number of people.

Impacts and Mitigation Measures of the Jamieson Canyon Corridor Program

AQ-1. Implementation of the proposed Jamieson Canyon Corridor Program projects could have potential short-term increases in PM_{10} emissions related to construction activities that would violate BAAQMD standards. (PS)

Implementation of the Jamieson Corridor Program includes the Jamieson Canyon widening of SR 12, the airport interchange at the intersection of SR 12/Airport Boulevard and SR 29, and the Soscol Flyover to connect southbound SR 221 to southbound SR12/29. Construction of these projects could require grading, excavation, placement of foundations for flyover structures, fabrication of structures, and paving. These activities would require the use of heavy trucks, grading equipment, concrete mixers, and other mobile and stationary

construction equipment. Emissions of air pollutants during construction of these projects would be caused by material handling, traffic on unpaved or unimproved surfaces, use of paving materials, exhaust from construction worker vehicle trips, and exhaust from diesel-powered construction equipment. In addition, any heavy construction activity on exposed dry soil could cause emissions of dust (usually monitored as PM_{10}). Without dust control measures, the impacts from construction would be considered potentially significant.

ROGs, NO_x, CO and additional particulate matter emissions would be created from the combustion of diesel fuel by heavy equipment and construction worker vehicles that may be used during construction of these projects. According to the BAAQMD thresholds, construction related air emissions that result from the operation of construction equipment and the transportation of the construction workers would be included in the regional emissions inventories that are used for the air quality management plans; therefore, this impact is considered less than significant.

MITIGATION MEASURE. Implementation of the following dust control measures by lead agencies of a specific project for each proposed transportation improvement expenditure plan program, based on the level of construction activity, in accordance with BAAQMD standard mitigation requirements for all construction projects would reduce construction-related emissions of PM_{10} to a less-than-significant level. (LTS)

AQ-1.1 *Implement BAAQMD Construction Dust Control Measures*. The following practices shall be included in the individual construction projects as follows:

For all construction projects:

- 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 the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

For construction sites greater than four acres in area:

- All of the 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 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

For construction sites that are large in area, located near a sensitive receptor, or any other reason that 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 construction site.
- Install wind breaks at the windward sides of the construction areas.
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

AQ-2. Implementation of the proposed Jamieson Canyon Corridor Program projects would not result in significant air emissions related to roadway operation. (LTS)

The Jamieson Canyon Corridor Program projects would include road widening, addition of turn lanes, interchange improvements, and construction of aerial ramps. These road and interchange improvements are designed to reduce congestion and increase safety on the roadway. The projects themselves would not cause a direct increase in vehicles on the roadway; however, the project could increase future roadway capacity. Current predictions of roadway traffic, discussed in Section 3.5, Transportation, indicate that future traffic increases would be due to population and employment increases in the area and cannot be attributed to the proposed transportation improvements expenditure plan programs. Therefore, increased emissions from mobile sources are considered less than significant.

AQ-3. Implementation of the proposed Jamieson Canyon Corridor Program projects could expose sensitive receptors to substantial pollutant concentrations. (PS)

Implementation of the Jamieson Canyon Corridor Program projects could include construction-related activities that are close to sensitive receptors, especially residents that live along Jamieson Canyon Road and users of the Chardonnay and Eagle Vines golf courses. The potential for these projects to emit increased levels of pollutants, could range from dust and odors, which are considered nuisances, to the creation of CO "hotspots" or the release of TACs which are known to increase the risk of cancer.

Construction-related impacts as described in Impact AQ-1.1, above, could expose nearby sensitive receptors to substantial PM_{10} concentrations. Odors associated with construction activities would be limited to areas close to construction sites and would be temporary in nature.

The Jamieson Canyon Corridor Program projects are designed to reduce congestion, and as shown in Section 3.5, Transportation, the vehicle miles traveled at LOS E or F would decrease with the project compared to conditions without the project. As CO "hotspots" are generally associated with intersections with LOS D or greater, the Jamieson Canyon Corridor Program projects would not lead to the creation of new CO "hotspots."

The proximity of high traffic roadways and sensitive land uses has been shown to increase both exposure and the potential for adverse health effects from diesel particulate matter, a known TAC. CARB has released a handbook that recommends a minimum of 500 feet between sensitive land uses and high traffic roadways.[3] This includes freeways or urban roads with 100,000 vehicles per day or more and rural roads with 50,000 vehicles per day or more. As the CARB handbook recognizes 500 feet as the distance which would have the potential for significant impacts, should a Jamieson Canyon Corridor Program project result in a roadway with a capacity over 50,000 vehicles per day or more, it would be considered to have potentially significant impacts to any sensitive land uses within 500 feet of the roadway. The project would not cause a direct increase in vehicles on the roadway; however, the Jamieson Canyon Corridor Program projects may decrease the distance from the emission source to the receptor. If the distance to potential sensitive receptors decreases, there would be subsequent increases in the exposure level which could exceed significance thresholds. Without project-specific roadway design information, this impact is considered potentially significant.

MITIGATION MEASURE. Implementation of Mitigation Measure AQ-1.1, by lead agencies of a specific project, to address substantial PM_{10} concentrations during construction, in addition to the exposure assessment, below, would identify project-specific impacts and appropriate mitigation measures. In some cases, these mitigation measures may not reduce the impact to a less-than-significant level. As such, this impact would remain significant and unavoidable. (SU)

AQ-3.1 *Conduct an Exposure Assessment to Determine Significance of Potential Impacts.* As part of the project-specific environmental review, the lead agency shall conduct an exposure assessment for any sensitive receptors that are located within 500 feet of any proposed roadway project that would result in the traffic flow of 50,000 vehicles per day or more. The results of the exposure assessment would determine a specific project's significance based on BAAQMD significance thresholds and

[3] CARB, Air Quality and Land Use Handbook, A Community Health Perspective, April 2005, Table 1-1, page 4.

identify appropriate mitigation measures. The lead agency would implement all feasible mitigation measures recommended by the exposure assessment.

Impacts Related to the Transportation Demand Management Program

The construction of the Napa VINE Transit Center proposed under the TDM Program could require grading, excavation, placement of foundations, fabrication of structures, and paving. These activities would require the use of heavy trucks, grading equipment, concrete mixers, and other mobile and stationary construction equipment. Without dust control measures, these construction impacts would be considered potentially significant. Impacts from construction of this proposed component of the TDM Program would not differ from those described above for the Jamieson Canyon Corridor Program projects. Therefore, implementation of Mitigation Measure AQ-1.1, above, would reduce construction-related impacts of the Napa VINE Transit Center to a less-than-significant level.

The operation of the Napa VINE Transit Center could result in air emissions that are in excess of the BAAQMD thresholds due to new vehicular travel to and from the facilities and idling of vehicles. The new facilities could potentially reduce the regional air emissions by encouraging carpools and public transit use; however, there may be a localized increase in emissions of CO and TACs due to use of new facilities. Increases in local traffic may increase exposure levels to air emissions for sensitive receptors. As with the Jamieson Canyon Corridor Program projects, without project-specific information, this impact related to the proposed TDM Program is considered potentially significant. Implementation of Mitigation Measure AQ-3.1, described above, would reduce impacts, but not necessarily to a less-than-significant level. As a result, the impacts to sensitive receptors would be considered significant and unavoidable.

The other transit-oriented components of the TDM Program encourage use of non-vehicular modes of transportation and provision of transit services to seniors that would not result in construction or operation of any new facilities, and thus, would not result in potentially significant impacts that could degrade air quality.

Impacts Related to Safe Streets and Roads Maintenance and Congestion Relief Program

The proposed Safe Streets and Roads Maintenance and Congestion Relief Program projects could include maintenance, rehabilitation, and reconstruction activities, as well as the 20 star projects listed in Table 2-1. These activities would result in air quality impacts due to construction and potential impacts from operational emissions if they were to exceed a BAAQMD threshold. The construction and maintenance proposed under the Safe Streets and Roads Maintenance and Congestion Relief Program projects could require the use of heavy trucks, grading equipment, concrete mixers, and other mobile and stationary construction equipment. Without dust control measures, the impacts from construction would be considered potentially significant. Impacts from construction of Safe Streets and Roads Maintenance and Congestion Relief Program projects would not differ from those described for the Jamieson Canyon Corridor Program projects. Therefore, implementation of Mitigation Measure AQ-1.1, described above, would reduce impacts to a less-than-significant level.

Projects that would result in an increased roadway capacity could lead to an indirect increase in future traffic flow, and therefore increased air emissions. As discussed in Section 3.5, Transportation, projections of roadway traffic indicate that future traffic increases would be due to population and employment increases in the area and cannot be attributed to the proposed transportation improvement expenditure plan programs. Therefore, the impacts to air emissions are considered less than significant.

As with the Jamieson Canyon Corridor Program projects, any projects under the Safe Streets and Roads Maintenance and Congestion Relief Program that would decrease the distance between the roadway and receptors would have potentially significant impacts to the receptors. If the Safe Streets and Roads Maintenance and Congestion Relief Program projects were proposed for a street that would result in a roadway with a capacity over 50,000 vehicles per day or more, it would be considered to have potentially significant impacts to any sensitive land uses within 500 feet of the roadway. These impacts would not differ from those described above under impacts related to the Jamieson Canyon Corridor Program projects. Therefore, implementation of Mitigation Measure AQ-3.1, described above, would reduce impacts, but not necessarily to a less-than-significant level. As a result, the impacts to sensitive receptors would be considered significant and unavoidable.