SECTION 4.3
AIR QUALITY

This section evaluates the potential impacts of the project on air quality. Potential impacts include emissions of dust and other pollutants from the plants and other activities on the project site, and traffic emissions. The impact analysis is based upon an air quality study conducted by Air Permitting Specialists, which is attached to this document as Appendix C.

4.3.1 SETTING

LOCAL CLIMATE

The project is located in northeastern Shasta County, northeast of the community of Burney. The area consists of hilly and mountainous terrain. The project elevation is approximately 3,000 feet above sea level. Principal geographic features include Soldier Mountain to the north (elevation 5,540 ft) and Chalk Mountain to the west (elevation 5,880 ft)

The area is characterized by warm summers and cool, wet winters. The average rainfall in Burney is approximately 28 inches. The predominant regional winds are aligned along a northwest-southeast axis. Annual wind speeds in the region average 7.5 miles per hour. Seasonally, the winds are strongest in the winter and weakest in summer.

EXISTING AIR QUALITY

Currently, no ambient air quality monitoring data near the project site are available. However, the Shasta County Air Quality Management District (SCAQMD) operated a monitoring site in Burney until March 1993. The site measured concentrations of ozone, carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM_{10}). Data reported during 1992 indicate that, with the exception of 24-hour PM_{10}, ambient concentrations of measured pollutants were below State and Federal air quality standards. The 24-hour PM_{10} concentration was 86 micrograms per cubic meter (ug/m^3), which was above the State standard of 50 ug/m^3.

4.3.2 REGULATORY FRAMEWORK

FEDERAL CLEAN AIR ACT

Under the Federal Clean Air Act (FCAA) of 1970, the Environmental Protection Agency (EPA) established ambient air quality standards for several air pollutants, referred to as "criteria pollutants." The six criteria pollutants are ozone, carbon monoxide (CO), PM_{10}, nitrogen oxides (NO_x), sulfur dioxide (SO_2) and lead. The specific standards are based on medical evidence that indicates that exposure to certain air pollutants is harmful to public health. The ambient standards are two-tiered. Primary standards are designed to protect public health, while secondary standards are designed to protect the environment (e.g., damage to vegetation or property). Both primary and secondary standards are keyed to averaging periods that range from one hour to one year. **Table 4.3-1** lists the federal ambient air quality standards.

TABLE 4.3-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Primary[a]	Federal Secondary[a]	California[b]
Ozone	1 Hour	0.12 ppm	0.12 ppm	0.09 ppm
Carbon Monoxide	8 Hour	9 ppm	--	9 ppm
	1 Hour	35 ppm	–	20 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.053 ppm	–
	1 Hour	--	--	0.25 ppm
Sulfur Dioxide	Annual	0.03 ppm	–	–
	24 Hour	0.14 ppm	–	0.04 ppm
	3 hour	--	0.5 ppm	--
	1 hour	–	--	0.25 ppm
Fine Particulate Matter (PM_{10})	Annual[c]	50 ug/m^3	50 ug/m^3	30 ug/m^3
	24 Hour	150 ug/m^3	150 ug/m^3	50 ug/m^3
Sulfates	24 Hour	--	--	25 ug/m^3
Lead	30 Day	--	--	1.5 ug/m^3
	Calendar Qtr	1.5 ug/m^3	1.5 ug/m^3	--
Hydrogen Sulfide	1 Hour	--	--	0.03 ppm
Vinyl Chloride	24 Hour	--	--	0.01 ppm
Visibility-Reducing Particles	8 Hour (10 am - 6 pm PST)	--	--	(d)

ppm - parts per million
ug/m^3 - micrograms per cubic meter
a) National standards, except ozone and those based on annual averages, are not to be exceeded more than once per year. The ozone standard is attained when the number of days per calendar year with max. ozone concentration is less than or equal to 1.
b) California standards are not to be exceeded for any air pollutant except sulfates, lead, hydrogen sulfide, and vinyl chloride. The latter are not to be equaled or exceeded.
c) Annual geometric mean concentration is used in California; annual arithmetic mean concentration is used in federal standards.
d) Insufficient amount to produce an extinction coefficient of 0.23 per km due to particles when relative humidity is less than 70%.
Source: California Air Resources Board, *California Air Quality Data, Annual Summary*, 1996.

The EPA has recently issued new standards for ozone and for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). For ozone, the new federal standard is 0.08 parts per million (ppm) for an 8-hour average. For $PM_{2.5}$, the federal standards are an annual average of 15 micrograms per cubic meter ($\mu g/m^3$) and a 24-hour average of 65 $\mu g/m^3$. Although currently in effect, the planning process to determine compliance with these new standards and the development of control programs to meet these standards, if needed, will not be completed until after the year 2000. Implementation of the new standards has been further complicated by a recent court decision. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit ruled that the application of the Clean Air Act, in setting the new public health standards for ozone and particulate matter, was an improper delegation of legislative authority to the EPA, and thus unconstitutional. The decision is currently being reviewed by the U.S. Supreme Court, and a ruling will likely be made next year.

STATE REGULATIONS

In 1988, California passed the California Clean Air Act (CCAA). Like its federal counterpart, the CCAA establishes ambient air quality standards. The state standards differ from the federal standards in two ways: (1) the standards are more stringent; and (2) the list of criteria pollutants includes sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility reducing particles. As with federal standards, California standards are keyed to certain averaging periods. **Table 4.3-1** lists the state ambient air quality standards. The California Air Resources Board (CARB) is responsible for establishing the air quality standards. CARB also regulates mobile emission sources and oversees the activities of the air pollution control districts (APCDs) and the air quality management districts (AQMDs).

In 1994, the EPA approved the State Implementation Plan (SIP) for Ozone. The SIP includes new control strategies to be developed and implemented over the ten years following adoption of the plan. The strategies are designed to reduce air pollution throughout the state and ensure continued progress toward meeting both federal and state ozone standards. The CARB determined that Shasta County's air district would not be required to prepare a comprehensive update of its air quality plan. Instead, the district was directed to focus on implementing its existing control strategies and SIP commitments.

COUNTY REGULATIONS

Within Shasta County, the air quality regulating authority is the Shasta County Air Quality Management District (SCAQMD). The SCAQMD monitors air quality at several sites throughout the county, and it serves as the lead agency responsible for implementing and enforcing federal, state and county air quality regulations. The agency also issues an "Authority to Construct" and a "Permit to Operate" for stationary air pollution sources.

The SCAQMD Rulebook sets standards of operation, defines permit requirements and sets emission limits. Collectively, these regulations and requirements are aimed at protecting public health and welfare. One of the most significant regulations in the Rulebook is Rule 2:1, New Source Review. This rule requires new and modified stationary sources of air pollution to apply the best available control technology (BACT) for emissions. Another significant rule, Rule 3:2, sets limits on emissions of particulate matter, NO_x and SO_x.

In 1997, the air districts within the Northern Sacramento Valley Air Basin, of which SCAQMD is one, updated the 1994 Air Quality Attainment Plan prepared for the purpose of attaining the state ambient air quality standard for ozone. The 1994 Plan proposed several feasible control measures for stationary sources of emissions. **Table 4.3-2** shows the proposed measures and adoption status by SCAQMD.

TABLE 4.3-2
CONTROL MEASURES AND ADOPTION STATUS

Control Measures	Adopted by SCAQMD
Indirect Source Review	
Air Quality Element General Plan	April 1994
Transportation Control Measure (Extent varies)	January 1993
NO_x Control Measures	
Gas Turbines	Not adopted
Industrial Boilers	March 1995
Internal Combustion Engines	June 1997
ROG Control Measures	
Architectural Coatings	Not adopted
Automobile Finish Coatings	June 1997
Cutback Asphalt	February 1994
Disposal of Organic Waste	June 1995
Polyester Resin Operations	March 1995
Soil Decontamination (VOC)	Not adopted
Solvent Degreasing	March 1995
Vapor Recovery Systems for Gasoline Distributors	June 1997
Other Control Measures	
Residential Wood Combustion	March 1995
Smoking Vehicle Program	February 1997

Source: *1997 NSVAB Air Quality Attainment Plan*

SHASTA COUNTY GENERAL PLAN

The County General Plan contains the following objectives and policies concerning air quality that pertain to the project:

Air Quality

Public Health

Objective

AQ-1. To protect and improve the County's air quality in accordance with Federal and State clean air laws in order to (1) safeguard human health, and (2) minimize crop, plant and property damage.

Policies

AQ-1c. The County will work with the AQMD to develop standards to minimize exposure of the public to toxic air pollutant emissions and noxious odors from industrial, manufacturing and processing facilities.

AQ-1e. The County shall require new air pollution point sources such as, but not limited to, industrial, manufacturing and processing facilities to be located an adequate distance from residential areas and other sensitive receptors.

4.3.3 IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines state that a project would have significant impacts on air quality if it does any of the following:

1) Conflicts with or obstructs implementation of the applicable air quality plan.

2) Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

3) Results 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).

4) Exposes sensitive receptors to substantial pollutant concentrations.

5) Creates objectionable odors affecting a substantial number of people.

Rule 2.1 of the SCAQMD Rulebook establishes emission thresholds for new stationary sources. Should a new stationary source meet or exceed any of these thresholds, it would be required to apply Best Available Control Technology (BACT) for the emissions. Table 4.3-3 lists the emission thresholds established by Rule 2.1. For this project, impacts are significant if emissions generated by stationary sources meet or exceed any of the thresholds established by Rule 2.1.

SCAQMD has established quantitative vehicle emission thresholds for projects, which when exceeded trigger a requirement for further air quality analysis and mitigation. Two types of thresholds are established - Level "A" and Level "B", with "A" being the lower level. Project emissions that meet or exceed Level "A" thresholds are required to implement a set of Standard Mitigation Measures (SMMs) that are designed to reduce the total vehicle emissions generated by the project. Appendix C contains a list of SMMs. The Level "A" emission thresholds are as follows:

- 25 pounds per day of nitrogen oxides (NO_x).
- 25 pounds per day of reactive organic gases (ROG).
- 80 pounds per day of inhalable particulate matter (PM_{10}).

TABLE 4.3-3
SCAQMD EMISSION THRESHOLDS FOR STATIONARY SOURCES

Pollutant	Emission Threshold (pounds/day)
Reactive organic compounds	25.0
Nitrogen oxides (NOx)	25.0
Sulfur oxides (SOx)	80.0
Particulate matter (PM10)	80.0
Carbon monoxide (CO)	500.0
Lead	3.2
Asbestos	0.03
Beryllium	0.002
Mercury	0.5
Vinyl chloride	5.0
Fluorides	15.0
Sulfuric acid mist	35.0
Hydrogen sulfide	50.0
Total reduced sulfur compounds	50.0

Project emissions that meet or exceed Level "B" emission thresholds are required to implement any of a list of Best Available Mitigation Measures (BAMMs) that are applicable to the project. Appendix C contains a list of BAMMs. Level "B" emission thresholds are as follows:

- 137 pounds per day of nitrogen oxides.
- 137 pounds per day of reactive organic gases.
- 137 pounds per day of inhalable particulate matter.

For this project, impacts are significant if vehicle emissions generated by the project meet or exceed Level "A" emission thresholds.

Currently, there are no regulations defining acceptable levels of cancer risk. However, under California's Proposition 65, public notification is required only if cancer risks exceed 10 cancers per million. In addition, CARB's Risk Management Guidelines do not require any mitigation of toxic air pollutants if cancer risks are below 10 cancers per million. These guidelines are used in this analysis to determine the significance of potential air quality impacts on human health.

METHODOLOGY

Air Permitting Specialists conducted an air quality analysis of the project. Emission rates of various regulated air pollutants and an air dispersion model were used to estimate the concentration of these pollutants. Emissions were modeled as a single area source 111 acres in size. An EPA/CARB approved air dispersion model (SCREEN3) was utilized to calculate worst case concentrations of various regulated air pollutants. Since current background air quality data are not available, the resulting impacts are presented in terms of percent of applicable air quality standards. **Table 4.3-4** summarizes the estimated amount of emissions from specific project operations. Detailed calculations of these emission estimates are available in the air quality study, which is in Appendix C of this document. **Table 4.3-5** shows estimates of the air quality impacts of project operations, based upon Federal or State ambient air quality standards, whichever are more stringent. Emissions from vehicular traffic were estimated based upon emission factors for the summer months from the EMFAC7 model, assuming an average vehicular speed of 40 miles per hour. The EMFAC7 factors used in this analysis are the same as those incorporated in the most current version of URBEMIS, an air quality model commonly used to estimate vehicle emissions generated by land use projects. URBEMIS produces its estimates using factors linking number of vehicle trips per given unit associated with a land use (e.g., square feet, acres, number of employees), then applying the EMFAC7 factors. Since trip estimates were already available for the project (see Appendix B), it was decided to use the EMFAC7 model directly.

As discussed later in this section, the asphalt batch plant would likely release small amounts of hazardous air pollutants (HAPs). The concentration of HAPs was estimated using the SCREEN3 dispersion model and the HRA96 risk model. Emissions of toxic air contaminants were modeled as a point source, and maximum one-hour concentrations were estimated. Annual concentrations were assumed to equal 10 percent of the maximum one-hour concentrations. A copy of the SCREEN3 model output is included in Appendix C. The HRA96 risk model was developed by CARB to estimate cancer risk from lifetime (70 years) exposure to carcinogens. The results of the HRA96 model are presented in terms of a probability of an individual contracting cancer 1,000 meters, or approximately 0.5 miles, from the project site. The distance includes the location of the closest residences. Emission rates for HAPs were calculated using California Air Toxics Emission Factors (CATEF) as published by CARB. Detailed emission calculations, including a copy of the HRA96 model output, are available in Appendix C of this document.

TABLE 4.3-4
ESTIMATED EMISSIONS FROM PROJECT OPERATIONS

Source	Emission Rates (pounds/day)			
	CO	PM_{10}	NO_x	SO_2
Quarry	Negligible	8.03	Negligible	Negligible
Crushing and Screening Operation	Negligible	7.03	Negligible	Negligible
Asphalt Plant	31.50	1.47	9.60	9.93
Concrete Plant	Negligible	0.30	Negligible	Negligible
Diesel Generator	18.70	6.16	86.80	5.74
Total ~~Project~~ Stationary Source Emissions	50.20	22.99	96.40	15.67
Vehicular Emissions	**85.71**	**6.58**	**55.85**	**5.47**
Total Emissions from Project	**135.91**	**29.57**	**152.25**	**21.14**

TABLE 4.3-5
ESTIMATED AIR QUALITY IMPACTS FROM PROJECT OPERATIONS

Pollutant	Averaging Time	Project Impact*	Air Quality Standard*	Percent of Standard
PM_{10}	24-hour	50	50	(1)
	Annual	13	30	43
CO	1-hour	234	23,000	1
	8-hour	163	10,000	1.6
NO_x	1-hour	71	470	(1)
	Annual	7	100	7
SO_2	1-hour	55	655	8
	3-hour	49.4	1,300	0.4
	24-hour	21.9	105	21
	Annual	5.49	80	6.8

* Figures in micrograms per cubic meter.
(1) Modeling used worst case meteorological data, resulting in violation of standard. Use of onsite data would show a substantial reduction in potential impacts.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 4.3.1 **The project would involve emissions of some pollutants from stationary sources that would exceed thresholds established by Rule 2.1 of the SCAQMD Rulebook. [SM]**

Various parts of the project would be expected to produce emissions of air pollutants. A discussion of the contribution of each operation to these emissions follows:

Quarry

Quarry operations involve overburden removal and loosening of rock using bulldozers and breakers. In a few cases, explosives would be used to loosen rock and compacted soil. It is estimated that blasting would be used only six times per year. Loose rock would be transported to the processing area where it would be either stock piled or would be crushed and screened to different sizes. Each of these operations would generate some fugitive dust. Emission rates are based upon empirical data from dust emissions from mining and crushed aggregate plants collected by the Environmental Protection Agency (EPA). Additional measurements were conducted in 1995 by the National Stone Association. On the basis of this information, approximately 0.48 tons of PM_{10} per year would be released, or 8.03 pounds per day. The amount of other criteria pollutants released by quarry operations would be negligible.

Crushing and Screening Operation

Rock crushing and screening operations involve the use of jaw and cone type rock crushers. Crushed rock is screened to separate the rock into different sizes. Rock crushers and screens would be equipped with water sprays to mitigate dust. It is estimated that 0.42 tons of PM_{10} would be released annually, or approximately 7.03 pounds per day. The amount of other criteria pollutants released by this operation would be negligible.

The operation would use a 1150 KW electric generator. The generator would be powered by a diesel engine. The choice of the generator has not been finalized; therefore, emissions were estimated for a typical 1150 KW diesel fueled generator. Emissions from the diesel generator are summarized separately in **Table 4.3-4**. The generator would emit approximately 86.8 pounds per day of NO_x and smaller amounts of other pollutants.

Concrete Batch Plant

Concrete from the concrete batch plant would be produced by mixing measured amounts of water, cement, sand and aggregate. The process involves storing, conveying, measuring and mixing these constituents prior to being discharged into trucks for transport to job sites. The proposed concrete batch plant would produce on average 8,000 cubic yards of product per year. The main air pollutant released from this operation is fugitive dust. It is estimated that 0.02 tons per year of PM_{10} would

be released from the concrete batch plant, or approximately 0.3 pounds per day. The amount of other criteria pollutants released by this operation would be negligible.

Asphalt Plant

Emissions from the asphalt plant occur from two main operations: rotary drum dryer and fugitive dust emissions from material handling. Emissions from the rotary drum dryer consist of water evaporated from the aggregate, dust emissions from the aggregate and trace amounts of VOCs derived from the combustion gases. The latter include compounds regulated as hazardous air pollutants (HAPs). Emissions from this process would be controlled using fabric filters (baghouse) prior to being sent into the atmosphere from a stack or vent. Fabric filters control over 99 percent of dust and aerosol emissions. However, such filters do not control gaseous air pollutants. The operation of an asphalt plant would also involve vehicular traffic on paved and unpaved roads, wind erosion from aggregate piles and aggregate handling. Water sprays are typically used to mitigate dust from these sources.

It is estimated that the asphalt plant would produce approximately 0.066 tons of PM_{10} per year, or 1.09 pounds per day. The plant would also produce approximately 31.45 pounds per day of carbon monoxide, 9.6 pounds per day of nitrogen oxides, and 9.93 pounds per day of sulfur dioxide.

The total emissions from stationary sources would exceed SCAQMD Rule 2.1 thresholds for NO_x emissions. Most of these emissions would come from the diesel generator. It should be noted that newer diesel generators emit lower quantities of NO_x. However, since project emissions have been calculated to exceed NO_x thresholds, this impact is ***significant and subject to mitigation***. Moreover, starting this year, the State is regulating diesel generators as a source of toxic emissions. Therefore, mitigation action focuses on the use of the diesel generator in the project.

Mitigation Measures

Rule 2.1 of the SCAQMD Rulebook states that projects that exceed thresholds are required to apply Best Available Control Technology (BACT) to new emission units. However, the following mitigation measure is also recommended:

MM 4.3.1a The project applicant shall use electrical power provided by existing power lines in the project vicinity for the crushing and screening operation.

Timing/Implementation: Upon installation of crushing and screening operation.
Enforcement/Monitoring: Shasta County Air Quality Management District.

The following mitigation measures are standard mitigation measures applicable to all projects in the County:

MM 4.3.1b Alternatives to open burning of vegetative material on the project site shall be used by the project applicant unless otherwise deemed infeasible by the SCAQMD. Suitable alternatives include, but are not limited to, chipping, mulching and conversion to biomass fuel.

Timing/Implementation: Upon commencement of grading activities.
Enforcement/Monitoring: Shasta County Air Quality Management District

MM 4.3.1c All material excavated, stockpiled or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance. Watering shall occur at least twice daily with complete grading and construction site coverage, preferably in the mid-morning and after work is completed for the day.

Timing/Implementation: Upon commencement of grading and construction activities.
Enforcement/Monitoring: Shasta County Air Quality Management District

MM 4.3.1d All land clearing, grading, earth moving or excavation activities shall be suspended when winds are expected to exceed 20 miles per hour.

Timing/Implementation: Upon commencement of grading and construction activities.
Enforcement/Monitoring: Shasta County Air Quality Management District

MM 4.3.1e All inactive portions of the project site shall be seeded and watered until a suitable grass cover is established. The applicant shall be responsible for applying non-toxic soil stabilizers (according to manufacturer's specifications) approved by the County Department of Public Works to all inactive construction areas in accordance with the Shasta County Grading Ordinance. "Inactive construction areas" are defined as previously graded areas which remain inactive for 96 hours.

Timing/Implementation: Upon commencement of grading and construction activities.
Enforcement/Monitoring: Shasta County Air Quality Management District

MM 4.3.1f Paved public roadways adjacent to the project site shall be swept at the end of each day if substantial volumes of soil materials have been carried onto them. A water sweeper with reclaimed water is recommended.

Timing/Implementation: Upon commencement of grading and construction activities.

Enforcement/Monitoring: Shasta County Air Quality Management District

MM 4.3.1g The project applicant shall re-establish ground cover on the project site through seeding and watering, in accordance with the Shasta County Grading Ordinance.

Timing/Implementation: Prior to final occupancy.
Enforcement/Monitoring: Shasta County Department of Resource Management - Planning Division.

In addition, these mitigation measures are proposed:

MM 4.3.1h The project applicant shall install water sprays in each rock crusher and screen.

Timing/Implementation: Prior to start of crushing and screening operation.
Enforcement/Monitoring: Shasta County Air Quality Management District.

MM 4.3.1i The project applicant shall install a fabric filter in each cement storage silo. Also, cement shall be transferred pneumatically from silo to mixing hopper and from the transfer truck to the silo.

Timing/Implementation: Upon commencement of project operations.
Enforcement/Monitoring: Shasta County Air Quality Management District.

Implementation of the above mitigation measures would reduce the amount of dust emissions from project construction and operations. They also would eliminate emissions that would be generated by the diesel generator, which is the main source of NO_x emissions and a significant source of other emissions. Impacts after mitigation would be ***less than significant***.

Impact 4.3.2 **The asphalt plant would release a small amount of hazardous air pollutants (HAPs), which in larger amounts are considered a risk to human health. [LS]**

The asphalt batch plant would release small amounts of HAPs. The emission rates of HAPs is summarized in Table 4-7 of Appendix C. The concentration of HAPs was estimated using the methodology described earlier. The results of the analysis shows that the maximum (70 year) cancer risk would be 0.00027 cancers per million people exposed. This level of risk is extremely small and can be considered as being zero. Moreover, the lifetime of the project is 30 years, not 70, so the risk level would likely be lower. Under the significance criteria used in this analysis to determine health impacts, emissions from the proposed project would result in a ***less than significant*** impact to public health.

Impact 4.3.3 **Vehicular trips to and from and within the project site would generate emissions, particularly PM_{10}. [PSM]**

As part of the operation, the proposed project would use trucks to transport asphalt, concrete and crushed/screened rock. The movement of trucks on-site and off-site would result in fugitive dust and gaseous emissions. In addition to truck traffic, there would be employee and miscellaneous vehicles. **Table 4.3-4** shows the estimated emissions from project-generated traffic. Vehicle traffic emissions would exceed the Level "A" threshold for NO_x. Moreover, fugitive dust emissions from driving on unpaved roads are not taken into account, and trucks may transport materials that may emit dust if the materials are not covered. Impacts from fugitive dust emissions are considered ***potentially significant and subject to mitigation***.

Mitigation Measures

Under SCAQMD rules, the project would be required to implement SMMs if emissions exceed Level "A" thresholds (see Appendix C for SMMs). Mitigation Measure 4.6.1a in Section 4.6, Hazards and Hazardous Materials, recommends the placement of an all-weather access road within 150 feet walking distance of the exterior of any structure built as part of Use Permit 99-17, which includes the plants. In addition, the following mitigation measures are recommended, which are standard mitigation measures applicable to all projects located within the County:

MM 4.3.3a All areas with vehicle traffic, including unpaved roadways, shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

Timing/Implementation: Upon commencement of project operations.
Enforcement/Monitoring: Shasta County Air Quality Management District.

MM 4.3.3b All traffic on unpaved roadways within the project site shall be limited to a maximum speed of 15 miles per hour.

Timing/Implementation: Upon commencement of project operations.
Enforcement/Monitoring: Shasta County Air Quality Management District.

MM 4.3.3c All trucks hauling dirt, sand, soil or other loose material shall be covered or shall maintain at least two feet of freeboard (the minimum vertical distance between top of load and the trailer), in accordance with the requirements of California Vehicle Code Section 23114.

Timing/Implementation: Upon commencement of project operations.
Enforcement/Monitoring: Shasta County Sheriff's Office, California Highway Patrol

MM 4.3.3d All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.

Timing/Implementation: Upon commencement of project operations.
Enforcement/Monitoring: Shasta County Air Quality Management District

Implementation of these mitigation measures would reduce the amount of dust that would be emitted by vehicle operations. Impacts after mitigation would be ***less than significant***.

Impact 4.3.4 **The asphalt plant may generate odors which may be detected by offsite residences. [PSM]**

Asphalt plants are considered by many people to be odor-producing operations. With the air emission controls placed on newer plants, odor emissions are less than those from older plants. However, odor emissions may still occur, particularly if rubberized asphalt is produced. Also, storage of the finished product on the site tends to increase the overall intensity of operational odors in the area. Odor impacts are considered ***potentially significant and subject to mitigation***.

Mitigation Measures

MM 4.3.4a If complaints are received regarding the emission of odors from the asphalt plant, the plant shall be required to use odor counteractants which shall be introduced into the stack flue gas to neutralize any odors that may be produced. This mitigation shall be incorporated as a condition for approval of a "Permit to Operate" by SCAQMD.

Timing/Implementation: During asphalt production.
Enforcement/Monitoring: Shasta County Department of Resource Management - Planning Division, Shasta County Air Quality Management District.

Implementation of the mitigation measures would reduce or eliminate odors that could potentially be generated by asphalt production. Impacts after mitigation would be ***less than significant***.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 4.3.5 **The project, in conjunction with other proposed projects, may contribute to a degradation of air quality in the Burney Valley area. [LS]**

Table 4.3-6 compares the total emissions generated by the project, including vehicular emissions, with the 1996 estimated annual average emissions within Shasta County. As seen in **Table 4.3-6**, the contributions of the project are minimal compared with the total County emissions.

TABLE 4.3-6
COMPARISON OF PROJECT EMISSIONS TO TOTAL COUNTY EMISSIONS

Source	Emission Rates (tons/day)			
	CO	PM_{10}	NO_x	SO_2
Total County emissions (1996)	250	33	31	2
Estimated project emissions*	0.068	0.015	0.076	0.011
Percent of County emissions	0.03%	0.05%	0.2%	0.6%
Percent without generator emissions	0.02%	0.04%	0.1%	0.4%

* Includes vehicular emissions and emissions from proposed diesel generator. As part of proposed mitigation, diesel generator would not be used.

The project may contribute to the existing violation by Shasta County of State PM_{10} ambient air quality standards, in conjunction with other possible projects in the area. Chief among these other projects is the proposed Three Mountain Power Plant northeast of Burney. The California Energy Commission is currently evaluating an application for a permit by the Three Mountain project, and approval of the project is not certain. However, if the project is approved, it may contribute a significant quantity of emissions. For the cumulative impact analysis, the following existing or planned projects were evaluated:

- Burney Mountain Power
- Sierra Pacific Industries (Burney Mill)
- PG&E Gas Transmission Facility
- Dicalite Corporation
- Burney Mountain Power
- Three Mountain Power (Planned)

A comparison of project emissions with emissions from the above noted projects is summarized in Table 4.3-7. When compared with the other projects, the proposed project would not contribute a significant amount of emissions.

Cumulative air quality impacts are related to cumulative emissions (i.e., lbs/hr or tons/year) and the location of emission sources. To assess the location of point of maximum concentration from the various projects, the SCREEN3 model was run for each source and the location of maximum concentration was determined. The results are also shown in Table 4.3-7 and show that impacts from each projects are highest within 100 meters of each facility. This means that there would not be any significant contribution from existing projects to air quality impacts already estimated for the Hat Creek project, since the nearest source (Sierra Pacific Industries) is located more than 5 miles (8 km) away. On the basis of this analysis and the mitigation measures recommended under Impact 4.3.1, the cumulative air quality impacts of the proposed project are considered ***less than significant.***

TABLE 4.3-7
CUMULATIVE EMISSIONS IN BURNEY VALLEY AREA

Facility	Emission Rates (tons/year)			Location of Max (meters)[1]
	PM_{10}	NO_x	VOC	
Burney Forest Products	47	132	1	-
Sierra Pacific Industries	24	25	79	953
Burney Mountain Power	30	104	10	430
Dicalite	5	5	7	1,000
Three Mountain Power	105	131	22	1,071
PG&E Facility	5	229	Neg.	764
Subtotal	216	626	119	-
Proposed Project	1.41	3.93	0.552	-
Total Cumulative Emissions	217.4	629.9	119.6	-

1. Location of maximum ground level concentration (GLC) based upon SCREEN3 model output.

REFERENCES

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