
4.2 AIR QUALITY

This section addresses potential impacts to air quality associated with the projected air emissions generated from implementation of the Updated Plan. The analysis also addresses the consistency of the Updated Plan with the air quality policies set forth in the Air Quality Management Plan for the Town of Mammoth Lakes (AQMP). The analysis of implementation of the Updated Plan focuses on whether the Updated Plan would cause an exceedance of an ambient air quality standard or a significance threshold established by the Great Basin Unified Air Pollution Control District (APCD).

4.2.1 EXISTING CONDITIONS

Air quality in any location is dependent on the regional air quality and local pollutant sources. Regional air quality is primarily a function of local topography and wind patterns, which tend to contain primary pollutants as they react with each other and sunlight to form existing emissions of pollutants. The State of California is divided into multiple air basins that are grouped into geographical areas with similar climate, topographical and meteorological conditions. Mono County is located in the Great Basin Valleys Air Basin (GBVAB), which also encompasses Alpine and Inyo Counties. The GBVAB is defined by the Sierra Nevada mountain range to the west, the White, Inyo, and Coso ranges to the east, Mono Lake to the north, and Little Lake to the south.

The climate of Mono County is characterized by wide fluctuations in daily temperatures, clear skies, excellent visibility and ~~hot~~ warm summers. The Town is located at an average elevation of 8,000 feet amsl and receives an annual average snowfall greater than 200 inches per year. Typically, the majority of the precipitation occurs between December and February with an annual average of 43 inches of water (equivalent to approximately 29 feet of snowpack) recorded at Mammoth Pass. The average minimum temperature is in the upper 20s degrees Fahrenheit (F) with the average maximum temperatures in the mid to high 50s. Spring is the windiest season with fast-moving northerly weather fronts. Due to the increased elevation of the Town relative to some of the lower lying area in the basin, winds are primarily light and variable. Occasionally a westerly “Zephyr” wind blows beginning in the early afternoon until the early evening during the summer months.⁸ Summer winds are northerly at night as a result of cool air draining off the sides of the surrounding mountains. Southerly winds during the day result from

⁸ *Phone conversation with Howard Sheckter (MammothWeather.com Meteorologist), December 2006.*

~~strong solar heating of the mountain slopes causing up-slope circulation.~~ The mean annual wind speed in the Town is less than 11 miles per hour (mph). Mean annual wind speeds measured just outside of the Town at elevations of 8,900 feet amsl and 7,800 feet amsl are 21.7 and 11.5 mph, respectively.

The Town is located in the GBVAB and jurisdictionally governed by the Great Basin Unified Air Pollution Control District (APCD) and the California Air Resources Board (CARB). Under the provisions of the federal Clean Air Act (CAA), the Environmental Protection Agency (EPA) was required to classify each air pollution control district with respect to attainment or nonattainment status relative to the federal standards. The CARB has a similar responsibility relative to the state standards. Areas that violate federal or state ambient air quality standards are referred to as nonattainment areas for the respective pollutants. Effective July 23, 2005, the Mono County portion of the GBVAB has a nonattainment designation for O₃ (State standards only). All of the GBVAB is designated as nonattainment for PM₁₀ state standard. The Mammoth Lakes area is designated nonattainment of the federal PM₁₀ standard. The Mammoth Lakes area and Mono County are considered in attainment or are unclassified with regards to all other federal and State standards.

~~Although Mono County is categorized as nonattainment of the state O₃ standard, there is no ozone implementation plan for attaining the ozone standard in Mono County, nor is one required as outlined in the 2001 CARB Ozone transport review (CARB 2001, page 45). This document states that “Transport from the central portion of the (San Joaquin) Valley is responsible for ozone violations in Mammoth Lakes . . .” and that the impacts on the Town’s air quality from sources in the San Joaquin Valley were “overwhelming”.~~

Although Mono County is categorized as nonattainment of the state O₃ standard, there is no ozone implementation plan for attainment in Mono County, nor is one required under State law. As outlined in the 2001 CARB Ozone transport review, the CARB classifies the contribution of transported pollution from one air basin to another to be either overwhelming, significant, inconsequential, or some combination of the three. The CARB Ozone Transport Review is a statewide assessment of ozone transport between air basins. The study states that: “Transport from the central portion of the (San Joaquin) Valley is responsible for ozone violations in Mammoth Lakes,” and that the resulting impacts on the Town’s air quality were classified as “overwhelming”. According to the CARB ozone levels should improve in the air basin only when substantial mitigation measures are more fully implemented in upwind air basins. Local sources are not considered to have a considerable impact on ambient levels due to the climactic patterns of the eastern slopes of the Sierra Nevada Mountains.

The Air Quality Management Plan (AQMP) for the Town (adopted by the Town Council and APCD Board of Directors in November and December 1990) is the primary document for the Town to satisfy the CAA requirement to develop a State Implementation Plan (SIP) to

demonstrate how the Mammoth Lakes area will attain and maintain the National Ambient Air Quality Standards (NAAQS) for PM₁₀. The AQMP includes analyses of PM₁₀ sources, their impact, and the effectiveness of control measures to improve the PM₁₀ levels, concluding that the primary sources of PM₁₀ emissions in the Town are generated by wood smoke and road cinders. Control measures contained in the AQMP include, but are not limited to, vacuum street sweepers for cinders and road dust, reduction in vehicle traffic, wood stove replacement, opacity limits, fees, and penalties. A Progress Report on the Implementation of the Mammoth Lakes AQMP was prepared by the APCD in April 1995, which documents the progress of the 1990 Plan control measures.

Currently, most air quality management areas in California are not in attainment of the state PM₁₀ standard. ~~As of In December 2006, the GBUAPCD amended Rules 401 and 431 to comply with Senate Bill (SB) 656⁹. These amendments include application of BACT for reductions in fugitive dust, community designations for high wood smoke areas, and voluntary curtailment in high wood smoke areas. August 2005 the implementation schedule required under Senate Bill 656 (SB656) (further discussed below) for the control measures has yet to be determined.~~

4.2.1.1 Ambient Air Quality

The APCD operates several air quality monitoring stations within the GBVAB. One air quality monitoring station is located within the Town. Air quality monitoring is performed by the APCD at the corner of Highway 203 and Old Mammoth Road. The site is equipped with a state of the art continuous-reading TEOM PM₁₀ monitor. However, the APCD continues to use a co-located Partisol PM₁₀ monitor operated every third day to demonstrate compliance with the ambient standards. Ozone and CO concentrations were monitored in the past, but these monitoring programs have been discontinued as well. A summary of the air quality data from 1991 to 2004 for the Mammoth Lakes Monitoring Station is provided in Table 4.2-1 on page 4-27. The following air quality information briefly describes the various types of pollutants and their monitored levels at the Mammoth Lakes Monitoring Station.

Carbon Monoxide

CO is a colorless and odorless gas. Motor vehicles are the primary source of this pollutant in the GBVAB. CARB and the EPA classify Mono County in attainment of the CO

⁹ ~~SB 656 requires each Air District to perform an annual assessment of Particulate Matter and conduct an evaluation of CARB's list of resources based on methods provided by the California Air Resource Board (CARB).~~

Table 4.2-1

Local Air Quality Levels

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration	Days State/Federal Standard Exceeded ¹			
Carbon Monoxide 1-Hour average	20 ppm	35 ppm	1991	--				
			1992	8.02	0/0			
			1993	13.0 ²	0/0			
			1994	9.0 ²	0/0			
			1995	10	0/0			
			1996	6.0	0/0			
			1997	8.2	0/0			
			1998	6.7 ²	0/0			
			1999	--				
			2000	4.2 ²	0/0			
			2001	15.4	0/0			
			2002		0/0			
			Carbon Monoxide 8-Hour average	9 ppm	9 ppm	1991	--	
						1992	4.4 ²	0/0
1993	4.5 ²	0/0						
1994	5.7 ²	0/0						
1995	5.4	0/0						
1996	3.0	0/0						
1997	3.4	0/0						
1998	3.0 ²	0/0						
1999	--	0/0						
2000	2.5 ²	0/0						
2001	2.5	0/0						
2002		0/0						
Ozone 1-Hour Average	0.09 ppm	0.12 ppm N/A ⁴				1991		
						1992	0.15 ²	5/3
			1993	0.09	0/0			
			1994	0.13	14/1			
			1995	0.11	2/0			
			1996	0.09	0/0			
			1997	0.09 ²	0/0			
			1998	0.08 ²	0/0			
			1999	--				
			2000	--				
			2001	0.10 ²	4/0			
			2002	0.10 ²	6/0			

Table 4.2-1 (Continued)

Local Air Quality Levels

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration	Days State/Federal Standard Exceeded ¹
Ozone 8-Hour Average	No State Standard has been promulgated ^{N/A}	0.08 ppm	1991	0.07	
			1992	0.10	-/9
			1993	0.08	-/0
			1994	0.09	-/3
			1995	0.10	-/2
			1996	0.09	-/1
			1997	0.08	-/2
			1998	0.08	-/2
			1999	--	
			2000	--	
			2001	0.08	-/2
			2002	0.07	-/1
PM ₁₀ -24 Hour Average	50 mg/m ³	150 mg/m ³	1991	134	
			1992	138	14/0
			1993	178	10/1
			1994	92	10/0
			1995	122	6/0
			1996	74	3/0
			1997	112	6/0
			1998	106 ²	3/0
			1999	--	
			2000	70 ²	2/0
			2001	134	4/0
			2002	129 ²	4/0
PM ₁₀ -Annual Average ⁵	20 mg/m ³	50 mg/m ³	1991	28	1/0
			1992	37	1/0
			1993	34 ³	1/0
			1994	30 ³	1/0
			1995	26 ³	1/0
			1996	25 ³	0/0
			1997	27 ³	0/0
			1998	24 ^{2,3}	0/0
			1999	--	
			2000	27 ^{2,3}	1/0
			2001	26	1/0
			2002	30 ³	1/0

Table 4.2-1 (Continued)

Local Air Quality Levels

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration	Days State/Federal Standard Exceeded ¹
PM_{2.5}-24 Hour hour Standard ⁵	No separate State Standard	35 65 mg/m ³	2000	31 ²	-/0
			2001	41 ²	-/0
			2002	--	
			2003	30 ²	-/0
PM _{2.5} -Annual Standard	12 mg/m ³	15 mg/m ³	2000	18.0 ²	-/-
			2001	10.3 ²	-/-
			2002	--	
			2003	6.7 ²	-/-

¹ The number of days above the standard is not necessarily the number of violations of the standard for the year. Data from CARB (<http://www.arb.ca.gov/adam/welcome.html>) unless otherwise noted.

² Years with incomplete data.

³ 1993-2002 Values posted from EPA (<http://www.epa.gov/air/data/>).

⁴ The NAAQS for one-hour Ozone was revoked on June 15, 2005 for all areas except Early Action Compact areas.

⁵ As of October 2006, the Federal annual PM₁₀ standard has been revoked, and the federal 24-hour PM_{2.5} standard was changed from 65 ug/m³ to 35 ug/m³. The data presented in this Table represents the standards that were applicable during those reporting years.

⁶ N/A refers to an item that is not applicable.

Source: PCR Services Corporation, 2005~~7~~

standards. CO monitoring in the Town was discontinued in 2002. The State one-hour standard of CO is 20.0 parts per million (ppm), while the federal standard is 35 ppm. The maximum one-hour concentration per calendar year has fluctuated at the Mammoth Lakes Monitoring Station from 4.2 ppm in 2000 to 15.4 ppm in 2001. Both the State and federal eight-hour standard for CO is 9.0 ppm. The maximum eight-hour concentration per calendar year has varied at the Mammoth Lakes Monitoring Station from 2.5 ppm in 2001 to 5.7 ppm in 1994.

Ozone

Ozone (O₃) is one of a number of substances called photochemical oxidants. These oxidants are formed when nitrogen oxides and hydrocarbons and related compounds, called volatile organic compounds and reactive organic compounds, both exhausted from internal combustion engines, interact in the presence of ultraviolet sunlight. O₃ is present in relatively high levels during warm sunny weather. The State standard for O₃ is 0.09 ppm averaged over one hour.

~~The federal standard is 0.12 ppm averaged over one hour.~~

The maximum O₃ concentration at the Mammoth Lakes Station has varied yearly from 0.15 ppm in 1992 to 0.08 ppm in 1998. State standard exceedances have occurred in five of the ten years of O₃ data presented in Table 4.2.1. An exceedance of the federal 8-hr standard occurs when the fourth highest value exceeds the standard. The federal 8-hr standard has not been surpassed more than ~~three-nine~~ times in any calendar year, so the Town remains in compliance with the federal standard. On April 15, 2004, EPA implemented the final designations of areas for the eight-hour ozone NAAQS. The GBVAB was designated in attainment. ~~The state has yet to promulgate an eight-hour ozone standard.~~

Particulate Matter (PM₁₀)

PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. The Owens Valley dry lake bed is a significant source of PM₁₀ in some areas of the GBVAB. The State 24-hour standard is 50 micrograms per cubic meter (ug/m³) averaged over 24 hours. The federal 24-hour standard is 150 ug/m³. Maximum concentrations on a calendar year basis at the Mammoth Lakes Monitoring Station ranged from 178 ug/m³ in 1993 to 92 ug/m³ in 1994. The annual number of exceedances of the State standard has varied from 18 exceedances in 1992 to three in 1996. The federal standard was exceeded once, in 1993. As of June 5, 2003, the State annual PM₁₀ standard is 20 ug/m³ based on the geometric mean of the monitored one-hour values. This is a reduction from the previous state annual standard of 30 ug/m³. ~~The federal standard¹⁰ is 50 ug/m³ based on the average of the one-hour values.~~—The State standard has been exceeded in all but one of the years for which there are PM₁₀ monitoring data. As of October 2006, the Federal annual PM₁₀ standard has been revoked. There has been were no exceedances of the federal annual standard during the last fifteen years.

Fine Particulate Matter

PM_{2.5} is primarily a result of combustion products emitted into the atmosphere as well as those particles that are formed in the atmosphere from gaseous pollutants as a result atmospheric chemistry (secondary formation). Generally, PM_{2.5} poses a greater health risk than the larger particulates because these particles can deposit deep in the lungs and contain chemicals that are particularly harmful to health. In addition to health impacts, these particles can reside in the

¹⁰ ~~As of October 2006, the Federal annual PM₁₀ standard has been revoked, and the federal 24-hour PM_{2.5} standard was changed from 65 ug/m³ to 35 ug/m³. It should be noted that the values presented in this table remain valid, as the new standards take affect after this data was published.~~

atmosphere for long periods of time and are the main contributors to reduced visibility and regional haze.¹¹

The State established a 24-hour standard for PM_{2.5} in 2003, coincident with the federal standard of 65 µg/m³. However, while the State standard which is not to be exceeded once per year, As of October 2006, the Federal 24-hour PM_{2.5} standard was changed from 65 ug/m³ to 35 ug/m³. The federal standard is met when the three-year average of the annual 98th percentile of the distributions of concentrations at each monitoring site does not exceed the standard. The APCD began monitoring for PM_{2.5} in 2000. With monitoring data through a portion of 2004, no exceedance of the State standard has been reported. The State PM_{2.5} annual standard is 12 µg/m³ (not to be exceeded), while the federal standard is 15 µg/m³ (averaged over three years). No full year of data collected from the monitor in the Town violates the State standard. EPA issued official designations for the PM_{2.5} standard on December 17, 2004 and made modifications in April 2005. Mono County is designated as unclassifiable/attainment.

Toxic Air Contaminants

The APCD implements Toxic Air Contaminants (TAC) controls through federal, state and local programs. Federally, the EPA regulates TACs under Title III of the CAA. At the state level, the CARB has designated all 189 federal hazardous air pollutants as TACs, under the authority of AB 1870. The Air Toxics Hot Spots Information and Assessment Act (AB 2588) requires inventories and public notices for facilities that emit TACs. SB 1731 amended AB 2588 to require facilities with “significant risks” to prepare a risk reduction plan (reflected in APCD Rules and Regulations). The APCD also regulates source-specific TACs.

Odor

The scent of Jeffrey pines and other vegetation is one of the natural resources that contributes to the ambiance of the Town, and protection of this resource is integral to the Vision Statement. Sources of odors within Mammoth Lakes include the MCWD wastewater treatment plant, odors associated with industrial operations in the Industrial Park, smoke from wood burning stoves and fireplaces, vehicle exhaust from tour buses, RVs, diesel powered vehicles, as well as, food odors from restaurant exhaust vents, exhaust from the chemistry labs at the local high school and college, and other land uses. The MCWD facility and the Industrial Park are located downwind of the developed part of the Town, at the easternmost boundary of the UGB. MCWD utilizes a variety of odor management practices, and odors from this source do not generally impact in-Town uses.

¹¹ <http://www.arb.ca.gov/aaqm/partic.htm>.

4.2.1.2 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations that are in proximity to localized sources of toxics and CO are of particular concern and are termed sensitive receptors. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Numerous existing sensitive receptors are located throughout the Town area.

4.2.2 REGULATORY FRAMEWORK

The Federal and California Clean Air Acts require that federal, State, and local authorities adopt air pollution reduction measures to meet health-based air quality standards (ambient air quality standards) for six specific (known as “criteria”) pollutants within certain timelines. The State standards are stricter than the federal standards. The current air quality planning efforts, and the responsibilities of agencies involved in these efforts, are described below.

4.2.2.1 Federal

In 1990, the U.S. Congress adopted the amendments to the CAA, which updated the nation’s air pollution control program. The amendments established a number of requirements, including new deadlines for achieving federal clean air standards.

The Environmental Protection Agency (EPA) is the federal agency charged with administering the CAA and other air quality-related legislation. As a regulatory agency, EPA’s principal functions include setting national ambient air quality standards (NAAQS); establishing minimum national emission limits for major sources of pollution; and promulgating regulations. The CAA requires the EPA to approve SIPs to meet and/or maintain the national NAAQS.

Title I of the CAA identifies attainment, nonattainment, and unclassifiable areas with regard to the criteria pollutants, and sets deadlines for all areas to reach attainment for the following criteria pollutants: ozone; nitrogen dioxide (NO₂); sulfur dioxide (SO₂); particulates (PM₁₀); carbon monoxide (CO); and lead (Pb). The CAA required each state with one or more nonattainment areas to prepare a SIP to describe how and when each area of the state would meet attainment for all criteria pollutants.

Title II of the CAA contains a number of provisions with regard to mobile sources, including requirements for reformulated gasoline, new tailpipe emissions standards for cars and

trucks, nitrogen oxides (NO_x) standards for heavy-duty vehicles, and a program for cleaner fleet vehicles. Identification and regulation of hazardous air pollutants are addressed in Title III. Under Title V, conditions for operating permits are specified. In July 1997, the EPA promulgated amendments to the NAAQS for ozone and particulate matter. EPA set the new ozone NAAQS at 0.08 ppm daily maximum eight-hour average. Under the new eight-hour standard, an area is in nonattainment whenever the average of the annual fourth highest daily maximum eight-hour ozone concentration exceeds 0.08 ppm. EPA established a new NAAQS for particulate matter having an aerodynamic diameter less than or equal to 2.5 micrometers, known as PM_{2.5}; and revised the NAAQS for particulate matter with an aerodynamic diameter less than or equal to 10 micrometers, known as PM₁₀. As of October 2006, the Federal annual PM₁₀ standard has been revoked, and the federal 24-hour PM_{2.5} standard was changed from 65 ug/m³ to 35 ug/m³.

4.2.2.2 State

In 1988, the State legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. The CCAA's requirements included annual emission reductions, increased development and use of low emission vehicles, and submittal of air quality attainment plans by air districts.

The CARB is the state agency responsible for coordinating both state and federal air pollution control programs in California. The ARB approves local air quality management plans (AQMPs) which address attainment and maintenance of state AAQS as mandated by the CCAA. The CARB also coordinates and approves local plans which eventually become part of the SIP for submittal to the EPA.

In 2003, the California Legislature enacted SB 656, codified as Health and Safety Code section 39614, to reduce public exposure to particulate matter (i.e., PM₁₀ and PM_{2.5}). SB 656 required the CARB to develop a list of the most readily available, feasible, and cost-effective control measures that could be employed to reduce PM emissions and thus make progress toward attainment of state and national PM₁₀ and PM_{2.5} standards. The CARB list of control measures is based on California rules and regulations existing as of January 1, 2004, and was adopted by the CARB Board in November 2004. Subsequently, under SB 656, each air district was required to perform an assessment of PM air quality and conduct an evaluation of CARB's list of measures. Upon identification of feasible and cost-effective measures, each air district was required to adopt an implementation schedule for locally appropriate control measures by July 31, 2005. The APCD has met those deadlines, and control measures designed to aid the Town in meeting the State PM₁₀ standard was approved at the September 2005 APCD Board meeting. ~~Proposed e~~Control measure RWC-2 calls for mandatory "No Burn" days for all wood-burning appliances during periods of poor air quality including EPA-certified wood burning stoves. ~~Proposed e~~Control measure FD-1 requires that all government agencies and contractors that use street

sweepers in the Town purchase PM₁₀ efficient sweepers compliant with Rule 1186 of the South Coast Air Quality Management District (SCAQMD) when buying or replacing street sweepers. The South Coast Air Quality Management District tests and certifies street sweeping equipment. Certification requires an 80 percent PM₁₀ collection efficiency under Rule 1186. The implementation schedule for the control measures has yet to be determined; however, these control measures are considered to be implemented in their current form in the analysis for this Revised Draft PEIR.

4.2.2.3 Local

The purpose of Chapter 8.30 of the Mammoth Lakes Municipal Code (Town Particulate Matter Ordinance) is to improve and maintain the level of air quality of the town so as to protect and enhance the health of its citizens by controlling the emissions of particulate matter into the air. Chapter 8.30 largely implements mitigation measures identified in the AQMP. Section 8.30.030 sets standards for regulation of solid fuel appliances and requires that such appliances installed within the town must be certified as meeting the emission requirements of the USEPA for Phase II certification. Section 8.30.040 allows no more than one solid fuel appliance to be installed in any new dwelling or nonresidential property and requires that the appliance be the primary form of heat in any new construction. Section 8.30.050 requires replacement of noncertified appliances upon the sale of property within the town. Section 8.30.080 prohibits burning of any fuels or materials other than untreated wood, uncolored paper, manufactured logs, pellets, and similar manufactured fuels.

- Section 8.30.090 requires the town council to appoint an air quality manager, in which the duty of the air quality manager shall be to determine when curtailment of solid fuel combustion in the town is necessary and to notify the community that curtailment is required, and to make such other determinations as are necessary to carry out the objective of the chapter. Determination that curtailment is required shall be made when PM₁₀ levels have reached one hundred thirty micrograms/m³ or when adverse meteorological conditions are predicted to persist. Should it be determined that one hundred thirty micrograms/m³ is not a low enough threshold to prevent the town from violating the National Ambient Air Quality Standard for twenty-four hours (NAAQS, 24 hours), that threshold may be lowered by resolution of the town council of the town.
- Section 8.30.100 requires that the town undertake public education programs.
- Section 8.30.110 requires that the town undertake a vacuum street sweeping program to reduce PM₁₀ emissions resulting from excessive accumulations of cinders and dirt. This program has been in effect since 1991 and requires a one-time payment of \$70.26 per unit towards the Town's street sweeper program to address road dust

impacts and has programmed two street sweepers to be funded 100 percent by new development through Development Impact Fees. In addition, the town shall, in its review of proposed development projects, incorporate such measures which reduce projected total vehicle miles traveled (VMT). The town's ~~goal~~ mandate is to limit peak VMT to 106,600 on any given day. Measures that reduce VMT include, but are not limited to, circulation system improvements, mass transit facilities, private shuttles and design and location of facilities to encourage pedestrian circulation.

4.2.3 THRESHOLDS OF SIGNIFICANCE

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. The APCD is responsible for establishing significance criteria for construction and operational activities within the Great Basin Valley Air Basin. The APCD does not have numerical thresholds for criteria pollutants to determine the significance of potential impacts associated with proposed projects. For construction impacts, the GBUAPCD requires that project proponents adopt comprehensive mitigation measures to mitigate fugitive dust impacts. With regard to emissions associated with the operation of stationary sources, the GBUAPCD considers stationary emissions to be less than significant if they are exempt from Rule 200, pursuant to Rule 209-A(B) (2) (see Section 3.3.3.3) (GBUAPCD, 2002). Based upon consideration of Appendix G in the CEQA Guidelines, implementation of the Updated Plan would be considered to have a significant impact on air quality if the project 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's region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

4.2.4 IMPACTS AND MITIGATION

Issue 4.2-1: Would development associated with implementation of the Updated Plan conflict with or obstruct implementation of the applicable air quality plan?

Discussion: The AQMP is the only SIP that applies to the Town. The purpose of the AQMP is to assist the Town in attaining the federal PM₁₀ standard. The AQMP includes a road dust reduction measure which limits peak day traffic loads to 106,600 vehicle miles traveled (VMT) and has been incorporated into the Municipal Code (Section 8.30.110). Traffic loads, in the Town were modeled for 2004, as well as for the buildout year (2024) for the average peak winter weekend traffic conditions (see Appendix F for the traffic study and Section 4.13, Transportation and Circulation, for a summary of the technical report). Based on the same set of roads used by the AQMP, the traffic engineer calculated a current average peak winter weekend day traffic load of 77,557 VMT. Based on the revised Traffic Study (October 2006), implementation of the Updated Plan is projected to produce a traffic load of 159,961-128,270 VMT at buildout, which would exceed the AQMP target by about 53,400-21,670 VMT.¹²

Implementation Measures in the Updated Plan:

The Updated Plan incorporates the following implementation measures that either directly or indirectly reduce PM₁₀ emissions:

- I.1.C.a.4 Town policies will support the utilization of fuel efficient vehicles and development of housing close to work, commercial services, recreation areas, and transit routes to reduce fuel consumption.
- I.7.B.a.2 The Town shall promote land use patterns that reduce the number and length of motor vehicle trips.
- I.7.B.a.3 To the extent feasible, the Town shall continue to provide and promote the development of workforce housing in-town so that Mammoth's workforce has ease of access to their places of employment.
- I.7.B.a.4 Higher density residential and mixed-use development shall be encouraged adjacent to commercial centers, mountain portals and transit corridors to reduce vehicle trips.

¹² Traffic circulation is discussed in greater detail in Section 4.13 of the EIR and detailed calculations of the VMT are provided in the revised traffic study in Appendix F (Mammoth Lakes Transportation Model Validation Report, Appendix C).

- 1.7.B.a.5 Employment areas should include a mix of support services to minimize the number of trips.
- I.7.B.b.1 New development shall be required to mitigate its impacts on air quality through design, participation in Town air pollution reduction programs, or other measures that assure compliance with adopted air quality standards.
- I.7.B.b.2 Developers shall implement best management practices to reduce air pollutant emissions associated with construction.
- ~~I.7.B.b.3 No solid fuel burning appliance shall be permitted to be installed within any multi-unit development within the Town of Mammoth Lakes. Exceptions will be made for pellet stoves or any other appliance of equal or lower emissions.~~
- I.7.B.c.1 The Town of Mammoth Lakes will conduct pilot projects and work with all applicable agencies to determine the feasibility of utilizing alternative traction control methods.
- I.7.B.c.2 The Town shall review and when needed modify the street sweeping program to reduce PM₁₀ emissions resulting from excessive accumulations of cinders and dirt.
- I.7.B.c.3 The Town shall, in its review of proposed development projects, incorporate measures that reduce projected total vehicle miles traveled. Examples of such measures include, but are not limited to, circulation system improvements, mass transit facilities, private shuttles and design and location of facilities to encourage pedestrian circulation.
- I.7.B.d.1 The Town shall continue to implement the Particulate Emissions Regulations and update them when needed to incorporate any technological advancement that would enhance and protect air quality within the Town of Mammoth Lakes.
- I.7.B.d.2 The Town shall continue to conduct public education programs to reduce particulate air pollution within the town, including particulate emissions from sources other than solid fuel burning devices.
- I.7.B.d.3 The Town shall review its street sweeping program and revise as necessary.
- II.1.B.b.1 Require that new development areas and associated community-wide facilities (open space resources, parks libraries, etc) be linked and oriented to existing

developed areas of the community through road networks, public transit systems, open space systems, bicycle and pedestrian systems.

- II.1.B.b.3 The Town shall revise zoning regulations to allow and encourage town residents to work from their homes provided that their home-based occupation does not create adverse impacts on adjacent residences (such as increased traffic, noise, exterior signage, or other nuisances).
- III.1.B.b.1 The Town shall promote, through development standards, mixed housing and commercial developments in commercial designations.
- V.1.A Maintain the Urban Growth Boundary to prevent sprawl and to maintain access to public lands and a compact urban area.
- VI.1.D.a.1 The Town, through development approvals and other Town programs shall support the development of land use patterns and mixed use developments that integrate residential and non-residential land uses, such that residents and visitors may easily walk to shopping, services and employment and leisure activities.
- VI.2.B.a.2 The Town shall continue to support the development of a town wide regional transit system designed to meet the needs of both Mammoth Lake's residents and workforce.
- VII.1.A.a.1 The Town shall work with the Parks and Recreation Commission to continue implementation of the *Mammoth Lakes Trail System Plan* and the *General Bikeway Plan* to establish a comprehensive and safe system of bicycle routes and pedestrian trails for short-range commuting, shopping trips, and for recreational use.
- VII.1.A.a6 The Town, through the development approval process, shall require developers to finance and install pedestrian walkways, and multi-use trails in new development, consistent with adopted plans and policies, or as appropriate and necessary to address circulation needs.
- VII.1.B.b.3 The Town shall implement improvements necessary to address the increase mitigation of significant project-related impacts may require improvements beyond those addressed by the Town of Mammoth Lakes Capital Improvement Program and the Town of Mammoth Lakes Air Quality Management Plan and Particulate Emissions Regulations.

- VII.1.F.a.5 Parking facilities shall be strategically located to promote visitors parking their vehicles and using alternate modes of transportation.
- VII.2.B.a.1 The Town shall require major traffic generators, including the school district and ski resorts, to develop and implement trip- reduction measures. In particular, ski area operations should be managed to reduce the overall P.M. peak traffic generation and to disperse these trips between the various mountain portals.
- VII.2.B.b.1 The Town shall encourage the clustering of land use density near established transit stops and the provision of convenient pedestrian connections to transit stops.
- VII.2.B.c.2 The Town shall, through development standards and conditions of development approval, provide for the development of a transportation and circulation system that maintains and preserves air quality in and around the Town. All new multi-family development shall be required to pay the street sweeping fee.

The implementation measures provided above would directly or indirectly reduce pollutant emissions. A number of the measures would serve to reduce vehicle trips and associated PM₁₀. As an example, higher density residential and mixed-use development adjacent to commercial centers, mountain portals and transit corridors would inherently reduce the number of vehicle trips, VMT, and encourage alternative modes of transportation.

Mitigation Measures

- 4.2-1 ~~The Town shall evaluate PM₁₀ levels on an annual basis using the AQMP model. The Town shall limit the total Town VMT to the level specified in Municipal Code Section 8.30.110, currently 106,600. that, when modeled, shows PM₁₀ levels are less than the federal standard of 150 µg/m³. Offset credits should be included from elimination or reduction in emissions from other sources (e.g., wood stoves, fire places, the use of any traction material, more suitable than cinders, that resists being milled into sub-10 micron diameter particles, etc.).~~ The Town shall require a VMT analysis for specific projects in those cases where the project would result in 500 daily vehicle trips for incorporation into the AQMP model. VMT analyses shall be required to demonstrate compliance with the federal standard of 150 µg/m³ and be conducted early in the environmental review process so that mitigation may be included in the project design.

Level of Significance After Mitigation

Incorporation of the implementation of the measures and mitigation measure provided above would ensure that the Updated Plan would not conflict with or obstruct implementation of the AQMP. The Town shall not grant approval to any project which would cause peak VMT to exceed the level specified in the Town ordinance, currently set at 106,600, which has been established as the maximum VMT level, which would not cause an exceedance of the federal PM₁₀ standard. If and when it can be reliably determined that a higher VMT level may be sustained without exceeding the NAAQS, due to reductions from other emission sources or to refined analytic inputs and/or methodologies, then appropriate amendments to the Town Municipal Code and AQMP may be considered. With the incorporation of mitigation, this impact would be less than significant.

Issue 4.2-2: Would development associated with implementation of the Updated Plan violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Discussion: The Mammoth Lakes portion of the GBVAB is designated as nonattainment for O₃ (State standard only). However, the O₃ impact is primarily the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevadas Mountains into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town activity. The State ~~24-hour~~24-hour PM₁₀ standard has been violated every year that adequate records have been maintained and the Town is also considered to be in nonattainment of the federal ~~24-hour~~24-hour PM₁₀ standard. Air quality impacts primarily consist of mobile (e.g., vehicles) source emissions from traffic and stationary source emissions (generated directly from fireplaces and stoves). Air quality impacts from vehicles as the majority source occur on winter weekends when visitor counts are the highest and traction materials have been applied to roads. Air quality impacts from wood burning activities as the majority source occur on cold, calm winter days with stagnant air conditions. Occasionally, these two events can coincide and have previously yielded two to six violations of the State 24-hour PM₁₀ standard per year for the last five years. The federal standard has not been violated since 1993 (see Table 4.2-1).

The AQMP model was based on monitored exceedances of the federal and State 24-hour PM₁₀ standard in the Town. The analysis employed in the AQMP, and this ~~Review Draft PEIR~~ Revised Final Program PEIR employs a technique called the “rollback method.” In the rollback method, total pollutant emissions are estimated for the maximum exceedence period, then the emission reductions are calculated by using a ratio of the pollutant’s regulatory standard to the exceedence. For example, if the monitored pollutant concentrations exceed the standard by

100 percent, then the emissions need to be reduced (rolled back) by at least 50 percent to meet the standard. The AQMP refined the method by weighing the relative impacts from the two dominant PM₁₀ sources recognized by analyzing the PM₁₀ particles collected in the samplers. The particulate matter that caused the monitored violation was primarily road dust and soot from wood combustion. The model incorporates daily VMT and the number and type of wood-burning devices being operated. The AQMP considered two scenarios: the impacts of pollutants 1) when conditions are such that air quality is strongly affected by wood burning; and 2) when air quality is primarily impacted by road dust. There are additional considerations, such as general background concentrations of the pollutant, but the rollback method is a common, EPA-accepted strategy for estimating the degree of emission reduction necessary to attain a standard, and the AQMP has been effective so far. The model predicts a high PM₁₀ value for the current (2004) conditions of 1432.4 ug/m³ (see Table 4.2-2 on page 4-42 and Appendix C). The highest monitored value for the years 2001 to 2004 is 134.0 ug/m³ (see Table 4.2-1), suggesting that on the whole, the model still provides reasonable predictions of air quality impacts.

In either scenario considered by the AQMP, tailpipe emissions constitute a minor or negligible component of the total impact. Tailpipe emissions from heavy duty diesel engines, such as those used in snow-removal equipment, have been greatly reduced since the analysis was completed for the AQMP. For example, the engines in vehicles purchased today emit less than 20 percent the amount of PM₁₀ that equivalent vehicles emitted during the AQMP's sample collection period. ~~State and federal programs, including the low sulfur diesel fuel requirements would be phased in starting in 2006 which would further reduce diesel particulate emissions.~~ When fully implemented in 2010, heavy duty on road diesel engines would be up to 95 percent cleaner than today's models (EPA 2002). The federal off-road engine program should be fully implemented by 2012. Once approved by the EPA, CARB would adopt the standard and estimates a 90 percent reduction in particulate emissions for new on and off-road engines as a result of these programs. CARB also has implemented programs to encourage retrofitting emission controls for existing heavy duty diesel engines.¹³

While it is likely that large sport utility vehicles (SUVs) constitute a larger portion of vehicle fleet in the Town now as compared to when the model was first created and larger vehicles tend to entrain (disperse) more particulate material up off the road in their wakes, there is no practicable way to access fleet data for comparison, nor is it clear that the difference would be meaningful at the reduced vehicle speeds common on high-traffic weekends. In addition, just as it would have been difficult to predict the characteristics of the 2004 vehicle fleet in 1990, it would be highly speculative to predict the size of vehicles that would be operating on the Town's roads in 2024.

¹³ <http://www.arb.ca.gov/diesel/factsheets/dieselpmfs.pdf>.

Table 4.2-2

Modeled 24-hour Impacts from the Updated Plan With Unlimited VMT Relative to the Federal Standard of 150 $\mu\text{g}/\text{m}^3$

	<u>Current (2004)^a</u>	<u>Updated Plan Unmitigated Updated Plan (2024)^b</u>
Wood burning dominated day ($\mu\text{g}/\text{m}^3$)	13428.7 <u>128.7⁺75.2</u>	<u>841.3</u>
Road dust dominated day ($\mu\text{g}/\text{m}^3$)	1432.4 <u>09.3</u>	<u>16216051.9</u>

^a ~~Considers EPA approved stoves exempt from burning ban. See Appendix C for details 2. Does not account for the benefits of recently promulgated mandatory "No Burn" days, in amended Rule 431.~~

Source: *Enviroscientists, 2005 and PCR Services Corporation 2007*

The Town is in the process of replacing equipment in the snow removal fleet and should have all of the older, more pollutant emitting, equipment off the road by 2008.¹⁴ Therefore, within the next few years all of the snow removal fleet would emit considerably less PM₁₀ per hour of operation than when the model was created, although actual hours of operation have, and would likely continue to increase. These vehicles are programmed in the Town's Capital Improvement Program, which was adopted with the updated Development Impact Fee Schedule and Master Facilities Plan in 2005. All vehicles are to be funded 100 percent by new development and the Town is currently collecting funds for vehicle replacement.

Mobile Sources: As discussed above, particulate matter along roadways disturbed during motor vehicle travel would constitute the primary source of fugitive dust emissions associated with buildout of the Project. Based on the same set of roads used by the AQMP, the traffic engineer calculated a current (2004) winter weekend day traffic load of ~~77,557~~ 74,051 VMT. The Updated Plan at buildout would produce a traffic load of ~~159,961~~ 128,270 VMT on an average peak winter weekend day.¹⁵

Stationary Sources: Wood combustion constitutes a secondary source of particulate emissions. While traffic loads would ~~more than double~~ increase under the Updated Plan relative to current conditions, emissions from wood burning stoves and fireplaces would decrease because of the prohibition of wood burning appliances in multifamily dwellings (Section 8.30.030 of the Municipal Code), the mandatory curtailment of solid fuel combustion on poor air quality days being implemented by the APCD (8.30.090 of the Municipal Code), ~~and the~~

¹⁴ Memo from Cashbaugh to Porter, June 30, 2005.

¹⁵ ~~For comparison purposes, the buildout of the existing General Plan would produce a traffic load of 154,471 VMT which is only 3.5 percent less than the Updated Plan. The actual unit numbers within the Traffic Analysis are 10 percent higher than the projected land use due to assumptions of density transfers.~~

ongoing wood burning stove replacement program (8.30.050 of the Municipal Code), and the mandatory “No Burn” days policy (GBUAPCD Rule 431 amendment).

Development: The difference in development style between high rise versus low rise could conceivably impact air quality in three different ways:

- High rise development could create microclimates that either lessen ground-level winds that can disperse gaseous pollutants, or funnel them into high-velocity corridors that could disperse fine particulates. Either impact would require a dense clustering of tall structures to be effective.
- High rise development can require larger boilers reflecting the greater living space per square foot of development. Boilers, if they burn propane or natural gas, produce little particulate pollution.
- High rise development would create more discrete destination centers that would tend to make public transportation more efficient.

Parking: Parking problems impact air quality via traffic congestion. People looking for parking spaces on streets impede traffic flow. Free flowing traffic would produce fewer gaseous (tailpipe) emissions; however, as discussed above tailpipe emissions are a negligible source relative to the total air quality impact analyzed for the Updated Plan.

The AQMP’s air quality impact model was used to evaluate the potential impacts of the Updated Plan (see Appendix D of this EIR). The results are summarized in Table 4.2-2, which includes the total VMT of 128,270,159,961 used in the traffic and circulation analysis in Section 4.13 of this ~~Draft EIR~~ Revised Final Program EIR. Wood burning dominated day impacts decrease due to the implementation of a solid fuel burn ban on poor air quality days. The model predicts exceedences of the federal 24-hour PM₁₀ standard on road dust dominated days.¹⁶

Implementation Measures in the Updated Plan:

Implementation measures provided under Issue 4.2-1 would also be applicable to this issue.

Mitigation Measures

4.2-2 The Town shall evaluate PM₁₀ levels on an annual basis using the AQMP model. The Town shall conduct surveys, as needed, to establish an accurate inventory of

¹⁶ *The model predicts compliance with the federal standard up to a daily VMT of 130,000.*

wood burning and pellet burning appliances, to validate assumptions regarding annual and daily wood and pellet usage patterns, to determine compliance rates with “No Burn” days, and to monitor effectiveness of VMT-reducing implementation measures. The Town shall condition or restrict future development as necessary to manage Town wide VMT at levels that ensure compliance with federal PM₁₀ NAAQS. The Town shall limit the total Town VMT to a level that, when modeled, shows PM₁₀ levels are less than the federal standard of 150 µg/m³. Offset credits should be included from elimination or reduction in emissions from other sources (e.g., wood stoves, fire places, the use of any traction material, more suitable than einders, that resists being milled into sub-10 micron diameter particles, etc.). The Town shall require a VMT analysis for specific projects in those cases where the project would result in 500 daily vehicle trips for incorporation into the AQMP model. VMT analyses shall be required to demonstrate compliance with the federal standard of 150 µg/m³ and be conducted early in the environmental review process so that mitigation may be included in the project design.

Level of Significance After Mitigation

The Draft General Plan Update is a long-range plan guiding future growth in the Town and does not contain project level details. Therefore, it is not practical to quantify the reductions attributable to the Implementation Measures at this time. Specific performance criteria for approval of development projects are established by Municipal Code, AQMP, and corresponding GBUAPCD Rules. As a result, the impacts of specific mitigation measures cannot be accurately quantified at this time.

With the incorporation of the implementation measures in the Updated Plan and the above mitigation measure, maintenance of the federal 24-hour24-hour PM₁₀ standards can be expected.¹⁷ As noted above, the State 24-hour24-hour PM₁₀ and one-1-hour O₃ standards continue to be exceeded. However, the O₃ impact is primarily the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevada Mountains into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town activity. Mitigation measures would decrease the long-term impacts to air quality from wood burning, vehicle exhaust, and road dust, but attainment of the State standard for PM₁₀ and one-1-hour standard for O₃ are not expected, and the impact

¹⁷ While the reduction in PM₁₀ from specific implementation measures is not quantifiable at this time, measures such as alternative traction control could provide emission offsets that would allow for the implementation of the Updated Plan (i.e., 159,961 VMT).

remains significant and unavoidable. This significant and unavoidable impact would also occur under the existing General Plan.

Issue 4.2-3: Would development associated with implementation of the Updated Plan 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)?

Discussion: The Mammoth Lakes portion of the GBVAB is designated as nonattainment for O₃ (State standard only) and a nonattainment area of PM₁₀ (State and federal standards). The APCD does not have numerical thresholds for criteria pollutants to determine whether the Updated Plan would result in a cumulatively considerable net increase of PM₁₀ or O₃ precursors.

Table 4.2-3 on page 4-46 presents the increase in emissions of ozone precursors and PM₁₀ emissions, along with “attainment” criteria pollutants such as carbon monoxide (CO) and sulfur dioxide (SO₂), resulting from buildout under the Draft General Plan Update. Data from the California Air Resources Board representing the total emissions estimated to be generated in Mono County for 2005 are also presented in Table 4.2-3. As shown, the increase in emissions at full buildout represents a 1 percent increase for both PM₁₀ and SO₂, 2 percent change for CO, 5 percent increase for VOCs, and 4 percent increase for NO_x.

The implementation measures and mitigation measures provided above under Issues 4.2-1 and 4.2-2 would ensure that the Updated Plan would not cause an exceedance of the federal PM₁₀ standard. Nonetheless, an increase in PM₁₀ emissions would be cumulatively considerable with respect to the State 24-hour PM₁₀ standard.

~~However, the Ground-level ozone in the GBVAB–O₃ impact is primarily the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevada Mountains into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town activity. Thus, an increase of O₃ precursor emissions as a result of implementation of the Updated Plan would not substantially contribute to the exceedances of the State O₃ standard.~~

~~Table 4.2-3 on page 4-432 presents the modeled PM₁₀ emissions from the Updated Plan relative to current conditions (Year 2004) and the Current Plan (2024). The Updated Plan would result in a three percent increase in PM₁₀ emissions in comparison to the Existing General Plan and a 44 percent increase in PM₁₀ emissions in comparison to the Existing Conditions (2004). However, implementation measures and mitigation measures provided above under Issue 4.2-2~~

Table 4.2-3**Comparison of Modeled PM₁₀ Emissions**

	Existing Conditions (2004)	Existing Plan[†] (2024)	Updated Plan[†] (2024)
Wood burning emissions (kg/day)	941	551	551
Vehicle-related emissions (kg/day)	1,843	3,377	3,455
Total emissions (kg/day)	2,784	3,888	4,007

[†]—Includes burn ban for EPA-approved stoves.

Source: *Enviroscientists, Inc. 2005.*

Table 4.2-3**Increase in Annual Emissions at Full Buildout
Under the Draft General Plan Update (tpy)**

<u>Source Category</u>	<u>NOx</u>	<u>VOC</u>	<u>PM₁₀</u>	<u>CO</u>	<u>SO₂</u>
<u>Mobile</u>	<u>16</u>	<u>3</u>	<u>110</u>	<u>38</u>	<u>0.2</u>
<u>Stationary</u>	<u>19</u>	<u>138</u>	<u>49</u>	<u>314</u>	<u>1.0</u>
<u>Total</u>	<u>35</u>	<u>141</u>	<u>159</u>	<u>352</u>	<u>1.1</u>
<u>Mono County 2005</u>	<u>978</u>	<u>2,873</u>	<u>14,155</u>	<u>19,206</u>	<u>110</u>
<u>Percent increase</u>	<u>4%</u>	<u>5%</u>	<u>1%</u>	<u>2%</u>	<u>1%</u>

See Appendix C for details

Source: PCR Services Corporation, 2007

would ensure that the Updated Plan would meet the federal standards. Nonetheless, a 44 percent increase in PM₁₀ emissions in comparison to the Existing Conditions combined with that the State 24 hour PM₁₀ standard has been violated every year that adequate records have been maintained would thus be considered cumulatively considerable.

~~Table 4.2-3 Table 4.2-3 on page 4-43 presents the increase in emissions of ozone precursors and PM₁₀ emissions, along with “attainment” criteria pollutants such as carbon monoxide (CO) and sulfur dioxide (SO₂), resulting from buildout under the Draft General Plan Update. Data from the California Air Resources Board representing the total emissions estimated to be generated in Mono County for 2005 are also presented in Table 4.2-3. As shown, the increase in emissions at full buildout represents a 1 percent increase for both PM₁₀ and SO₂; 23 percent change for CO, 56 percent increase for VOCs, and 47 percent increase for NOx.~~

Implementation Measures

In addition to the implementation measures identified above in Issue 4.2-1, the following measures would be implemented:

- I.1.C.b.3 The Town shall work collaboratively with other public agencies and private stakeholders to develop a geothermal heating district for the Town and, in pursuit of this, shall seek additional funding sources to initiate geothermal heating projects.
- I.1.C.b.4 The Town shall establish regulatory framework to encourage and facilitate the use of geothermal heating, including provisions for installation and operation of district heating, and requirements and future buildings be constructed with heating systems that can readily convert to geothermal.
- I.1.C.b.5 The Town shall encourage the use of renewable fuels, such as biodiesel, and develop a regulatory framework and incentives to facilitate the use of these resources.
- I.7.B.b.2 Developers shall implement best management practices to reduce air pollutant emissions associated with construction.
- I.7.B.b.3 No solid fuel burning appliance shall be permitted to be installed within any multi-unit development within the Town of Mammoth Lakes. Exceptions will be made for pellet stoves or any other appliance of equal or lower emissions.
- VII.1.E.a.1 The Town shall develop a town-wide plan that utilizes site-specific characteristics and design measures to identify areas suitable for solar snow melt.
- VII.1.E.a.2 The Town shall continue to investigate and work with private businesses and public agencies to pursue the development of geothermal heating opportunities for snow removal operation.

The implementation measures provided above would directly or indirectly reduce pollutant emissions. As an example use of geothermal heating could further reduce the use of wood burning stoves in the Town.

Mitigation Measures

As discussed above, a mitigation measures ~~are~~ is provided under Issues 4.2-1 and 4.2-2 to ensure that the Updated Plan would meet the federal standards, but not the State standards and thus, the ~~increase~~ increase in emissions would be considered ~~cumulatively considerable~~ significant. No additional feasible mitigation measures were identified.

Level of Significance After Mitigation

Implementation of the measures and mitigation measure outlined under Issue 4.2-2 would be expected to ensure that the Updated Plan would meet the federal PM₁₀ standard. Nonetheless, the Mammoth Lakes portion of the GBVAB is designated as nonattainment for O₃ (State standard only) and a nonattainment area for PM₁₀ (State and federal standards). In addition, the State 24-hour PM₁₀ and ~~one~~ 1-hour O₃ standard continue to be exceeded. Therefore, the increase in pollutant emissions associated with implementation of the Updated Plan would be considered cumulatively considerable and significant and unavoidable. ~~As discussed above, the O₃ impact is primarily the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevadas into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town activity. In addition this significant and unavoidable impact would also occur under the existing General Plan.~~

Issue 4.2-4: Would development associated with implementation of the Updated Plan expose sensitive receptors to substantial pollutant concentrations?

Discussion: Certain segments of the population, such as children, the elderly, and those individuals with compromised respiratory systems are more sensitive to the effects of air pollution than is the general population. Those sensitive populations that are in proximity to localized sources of fine particulates, toxics and CO are of concern and are termed sensitive receptors. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors are also affected by ground level O₃ more than the general population.

As discussed above, the Mammoth Lakes portion of the GBVAB is designated as nonattainment for O₃ (State standard only) and a nonattainment area of PM₁₀ (State and federal standards). Exceedances of the State O₃ standard and State PM₁₀ standard have occurred in recent years and, as such, sensitive receptors in the Town have likely been exposed to substantial pollutant concentrations. As discussed above in Issue 4.2-2, implementation of the Updated Plan would not result in an exceedance of the federal PM₁₀ standard. However, sensitive receptors would still likely be exposed to exceedances of the State PM₁₀ and ozone standards. ~~In addition, the O₃ impact is primarily the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevadas into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town~~

activity. Thus, ~~PM₁₀ and O₃ exceedances of the State standards within the Town would occur regardless of implementation of the Updated Plan.~~

Mitigation Measures

As discussed above, ~~a mitigation measures~~ is ~~are~~ provided under Issues 4.2-1 and 4.2-2 to ensure that the Updated Plan would meet the federal standards, but not the State standards and thus implementation of the Updated Plan would expose sensitive receptors to substantial pollutant concentrations. No additional feasible mitigation measures were identified.

Level of Significance After Mitigation

Implementation of the measures and mitigation measures outlined under Issues 4.2-1 and 4.2-2 would be expected to ensure that the Updated Plan would not expose sensitive receptors to PM₁₀ concentrations that would exceed the federal standard. Nonetheless, the State ~~24-hour~~24-hour PM₁₀ and ~~one-1--hour~~one-1--hour O₃ standard continue to be exceeded. Therefore, sensitive receptors could be exposed to substantial pollutant concentrations associated with implementation of the Updated Plan and increasing the total population within the Town will likely lead to some increase in exposure of sensitive receptors to substantial pollutant concentrations. However, the O₃ impact is ~~primarily~~overwhelmingly the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevadas into the Planning Area during limited periods of the year and is not a condition substantially generated by Town activities, policies, or the Updated Plan. In fact, exceedances of the O₃ standard would likely occur without any contribution of emissions of O₃ precursors (nitrogen oxides and hydrocarbons) from Town activity and, because of the time of day of their occurrence and the wind direction associated with exceedances, emission of O₃ precursors would not measurably alter O₃ concentrations. In addition this significant and unavoidable impact would also occur under the existing General Plan.

Issue 4.2-5: Would development associated with implementation of the Updated Plan create objectionable odors affecting a substantial number of people?

Discussion: Since the Updated Plan does not propose any specific development projects, no specific sources of objectionable odors can be identified. However, it can be concluded that any specific development projects would be required to comply with standards established in the local general plan or applicable standards of other agencies. Town policies prohibiting installation of wood-burning stoves in new construction would reduce smoke odors over time and exhaust from local businesses are regulated by the Town (Section 8.30.030). In addition, objectionable odors are considered air contaminants by the APCD (Rule 109.B.2) and compliance with APCD Rule 402 prohibits the discharge of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of people. Thus, implementation

of the Updated Plan would not create objectionable odors affecting a substantial number of people and oversight by the appropriate agencies and compliance with the applicable regulations would ensure that impacts would be less than significant.

Mitigation Measures

The Updated Plan would not create objectionable odors affecting a substantial number of people. Therefore, no mitigation measures are required.

Level of Significance After Mitigation Measures

Impacts related to the creation of objectionable odors affecting a substantial number of people would be less than significant.