5.5 Air Quality

5.5 AIR QUALITY

This section addresses the air emissions generated by the construction and operation of the proposed project, and the potential impacts to air quality. The analysis also addresses the consistency of the proposed project with the air quality policies set forth within the *Mammoth Lakes Air Quality Maintenance Plan and PM_{10} Redesignation Request for the Town of Mammoth Lakes* (2013 AQMP) prepared by the Town of Mammoth Lakes and the Great Basin Unified Air Pollution Control District (GBUAPCD). The analysis of project-generated air emissions focuses on whether the proposed project would cause an exceedance of an ambient air quality standard or GBUAPCD significance threshold. Air quality technical data is included in Appendix 11.4, *Air Quality and Greenhouse Gas Data*.

5.5.1 EXISTING SETTING

GREAT BASIN VALLEYS AIR BASIN

Geography

The Town of Mammoth Lakes (Town) is located in the Great Basin Valleys Air Basin (Basin), which is bounded 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 Basin includes Mono County, where the project site is located, as well as Alpine and Inyo Counties.

The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of air pollutants throughout the Basin.

Climate

The climate of the area consists of variable daily temperatures, clear skies, warm summers, cold winters, and low humidity. The Town is located at an average elevation of 8,000 feet above mean sea level, and encompasses approximately 25 square miles of land. The Town receives an average snowfall of over 200 inches per year. The majority of precipitation takes place between the winter months of 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 annual temperature varies from a minimum in the upper 20 degrees Fahrenheit (°F) to a maximum of mid to high 50's. January is usually the coldest month, while July and August are usually the warmest months. The average annual wind speed in the area is less than 10 miles per hour (mph), the strongest beginning in the spring months. Average annual relative humidity is approximately 50 percent, and skies are mostly clear. 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 areas 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 summer months.

Local Ambient Air Quality

The GBUAPCD monitors air quality at 20 monitoring stations throughout the Basin. The monitoring station representative of this area is the Mammoth Lakes-Gateway monitoring station, which is located approximately one mile east of the project site. The Mammoth Lakes-Gateway monitoring station only monitors particulate matter (PM_{10}). Ozone (O_3) and carbon monoxide (CO) concentrations were monitored in the past, but these monitoring programs have been discontinued. There are no monitoring stations within Mono County that monitor the other criteria pollutants. The closest station within the Basin that monitors O_3 is the Death Valley monitoring station, which is located approximately 150 miles southeast of the project site. The Keeler-Cerro Gordo Road station is the closest to the project (approximately 100 miles to the south) that monitors $PM_{2.5}$. The air quality data from 2011 to 2013 monitored at these stations are presented in Table 5.5-1, *Local Air Quality Levels*.

Table 5.5-1
Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum[1] Concentration	Number of Days State/Federal Std. Exceeded
	California	Federal			
Ozone (O_3) (1-Hour)[2]	0.09 ppm for 1 hour	NA[5]	2011 2012 2013	0.084 ppm 0.082 0.080	0/0 0/0 0/0
Ozone (O_3) (8-Hour)[2]	0.070 ppm for 8 hours	0.075 ppm for 8 hours	2011 2012 2013	0.079 ppm 0.077 0.074	20/3 8/1 5/0
Particulate Matter (PM_{10})[3, 6, 7]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2011 2012 2013	102.0 µg/m^3 56.0 183.0[8]	27/0 4/0 32/2[8]
Fine Particulate Matter ($PM_{2.5}$)[4, 7]	No Separate State Standard	35 µg/m^3 for 24 hours	2011 2012 2013	208.0 µg/m^3 99.0 93.6	NM/9 NM/4 NM/8

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

Notes:

1. Maximum concentration is measured over the same period as the California Standard. All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.
2. Measurements taken at the Death Valley National Monument Monitoring Station (located near Furnace Creek, Death Valley, California 92328).
3. Measurements taken at the Mammoth Lakes-Gateway Monitoring Station (located at Highway 203 and Old Mammoth Road, Mammoth Lakes, California 93546).
4. Measurements taken at the Keeler-Cerro Gordo Road Monitoring Station (located at 190 Cerro Gordo Road, Keeler, California 93530).
5. The United States Environmental Protection Agency revoked the Federal 1-hour Standard in June of 2005.
6. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
7. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
8. In 2013, Federal PM_{10} standards were exceeded twice due to wildfire smoke impacts from the Aspen Fire. Also, 10 of the days where the State PM_{10} standards were exceeded in 2013 were due to the Aspen Fire.

Source: California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Air Quality Data Statistics*, http://www.arb.ca.gov/adam/welcome.html, accessed on May 12, 2014.

Carbon Monoxide. CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions.

CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death in confined spaces at very high concentrations.

Ozone. O_3 occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" ozone layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is a photochemical pollutant, and needs volatile organic compounds (VOCs), nitrogen oxides (NO_X), and sunlight to form; therefore, VOCs and NO_X are ozone precursors. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While ozone in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone (in the troposphere) can adversely affect the human respiratory system and other tissues. Ozone is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of ozone. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide. Nitrogen oxides (NO_X) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations).

NO_2 can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, the California Air Resources Board (CARB) adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($PM_{2.5}$). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards.

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The following types of people are most likely to be adversely affected by air pollution, as identified by CARB: children under 14, elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups are called sensitive receptors and include residential areas, hospitals, day-care facilities, elder-care facilities, elementary schools, and parks. Sensitive receptors in the project vicinity include hotels, resort condominiums, single and multi-family residential homes, a park, and a place of worship. Sensitive receptors are depicted below in Table 5.5-2, *Sensitive Receptors*.

Table 5.5-2
Sensitive Receptors

Type	Name	Distance from Project Site (feet)	Direction from Project Site
Hotels/Resort Condominiums	8050 Buildings A and B	25	Northwest
	Fireside at the Village	25	South
	Alpenhof Lodge	100	Northeast
	The Westin Monache Resort, Mammoth	425	West
	The Village Lodge: Lincoln House	555	Northwest
Residential	Residential Uses	435	East
		750	Southwest
		855	West
		1,000	Northwest
Places of Worship	Church of Jesus Christ of Latter-Day Saints	4,925	Southeast
Parks	Community Center Park	885	Northwest

Google Earth, 2014.

5.5.2 REGULATORY FRAMEWORK

U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established Federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are O_3, CO, NO_2, which is a form of NO_X, SO_2, which is a form of SO_x, PM_{10}, $PM_{2.5}$, and lead (Pb); refer to Table 5.5-3, *National and California Ambient Air Quality Standards*.

CALIFORNIA AIR RESOURCES BOARD

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 5.5-3, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMP's also serve as the basis for the preparation of the State Implementation Plan (SIP) for the State of California.

Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment.

GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

The GBUAPCD has jurisdiction over the counties of Mono, Alpine, and Inyo. The GBUAPCD is one of 35 air quality management districts that have prepared AQMPs to accomplish a five-percent annual reduction in emissions. The most recent AQMP was adopted in 2013.

In 1990, the GBUAPCD prepared the *Air Quality Management Plan for the Town of Mammoth Lakes* (1990 AQMP) to address PM_{10} pollution in the region. In October 2013, the GBUAPCD prepared the *Air Quality Maintenance Plan and PM_{10} Redesignation Request for the Town of Mammoth Lakes* (2013 AQMP), as an update to the 1990 AQMP. The 2013 AQMP reviews the background of the 1990 AQMP, the measures implemented as a result of that plan and their effectiveness, and changes to clean air regulations since the adoption of the 1990 AQMP. The 2013 AQMP recommends maintenance measures and requests that the Town of Mammoth Lakes be redesignated as attainment for the federal PM_{10} standard. The redesignation request is based on monitoring data and a modeling analysis, and a maintenance plan that contains requirements to ensure the Federal PM_{10} standard would not be violated in the future.

Table 5.5-3
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m³)	**Nonattainment**	N/A[5]	N/A[5]
	8 Hour	0.070 ppm (137 μg/m³)	**Nonattainment**	0.075 ppm (147 μg/m³)	Unclassified
Particulate Matter (PM_{10})	24 Hour	50 μg/m³	**Nonattainment**	150 μg/m³	**Nonattainment**
	Annual Arithmetic Mean	20 μg/m³	**Nonattainment**	N/A[7]	N/A[7]
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 μg/m³	Unclassified/Attainment
	Annual Arithmetic Mean	12 μg/m³	Unclassified/Attainment	12 μg/m³	Unclassified
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Attainment
	8 Hour	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Attainment
Nitrogen Dioxide (NO_2)[6]	1 Hour	0.18 ppm (339 μg/m³)	Attainment	100 ppb (188 μg/m³)	N/A
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	N/A	0.053 ppm (100 μg/m³)	Attainment
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 μg/m³)	Attainment	75 ppb (196 μg/m³)	N/A
	3 Hour	N/A	N/A	N/A	Attainment
	24 Hour	0.04 ppm (105 μg/m³)	Attainment	0.14 ppm (for certain areas)[8]	Attainment
	Annual Arithmetic Mean	N/A	N/A	0.30 ppm (for certain areas)[8]	Attainment
Lead (Pb)	30 day average	1.5 μg/m³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 μg/m³	Attainment
Visibility-Reducing Particles	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	**No Federal Standards**	
Sulfates	24 Hour	25 μg/m³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Unclassified		

μg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable.

Notes:

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10} and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, CARB identified vinyl chloride as a toxic air contaminant, but determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.
2. National standards (other than ozone, particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. EPA also may designate an area as *attainment/unclassifiable*, if: (1) it has monitored air quality data that show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine the air quality in the area. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over the three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. The Federal 1-hour ozone standard was revoked on June 15, 2005 in all areas except the 14 8-hour ozone nonattainment Early Action Compact (EAC) areas.
6. The Nitrogen Dioxide ambient air quality standard was amended in February 22, 2007 to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm.
7. The EPA revoked the annual PM_{10} standard in 2006 (effective December 16, 2006).
8. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Source: California Air Resources Board and U.S. Environmental Protection Agency, June 4, 2013.

The measures identified in the 2013 AQMP were incorporated in the *Town of Mammoth Lakes Municipal Code* (Municipal Code) as Chapter 8.30, *Particulate Emissions Regulations*. The measures included within Chapter 8.30 include a vehicle miles traveled (VMT) limit for the town of 179,708, street sweeping measures, and regulations on wood-burning stoves and fireplaces. Three major control measures that were amended by the 2013 AQMP include the following:

- *Section 8.30.040 B*. No new wood burning appliances are allowed to be installed in multi-family developments, consistent with General Plan Policy R.10.3.

- *Section 8.30.080, Mandatory Curtailment*. All wood burning appliances (including EPA certified stoves), except pellet stoves, are subject to the Town's no-burn day program.

- *Section 8.30.100 B*. Proposed development projects and other Town approved activities which affect vehicle trips are evaluated against the VMT limit of 179,708. .

5.5.3 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

GBUAPCD THRESHOLDS

Currently, the GBUAPCD does not have separate daily thresholds for criteria pollutants other than State and Federal standards; refer to Table 5.5-3. However, CEQA allows Lead Agencies to rely on standards or thresholds promulgated by other agencies.

The GBUAPCD was consulted during the course of this analysis to determine the proper methodology to use for analyzing criteria pollutants. Based on guidance from the GBUAPCD, project-related emissions were quantified and compared to the Mojave Desert Air Quality Management District (MDAQMD) numerical thresholds.[1] Projects in the Basin have recently used the numerical standards of the MDAQMD in prior CEQA reviews (e.g., the *Town of Mammoth Lakes Trail System Master Plan EIR*, dated July 2011). Because the air quality and pollutant attainment status in portions of the Mojave Desert Air Basin (MDAB) are similar to those of the Basin, the numerical thresholds set for MDAB by the MDAQMD are considered adequate to serve as significance thresholds for the proposed project. Table 5.5-4, *Regional Thresholds of Significance*, presents the MDAQMD numerical thresholds that would be utilized for analysis of the proposed project.

Table 5.5-4
Regional Thresholds of Significance

Phase	Pollutant (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	137	137	548	137	82	82
Operation	137	137	548	137	82	82
VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns						
Source: Mojave Desert Air Quality Management District, *CEQA and Federal Conformity Guidelines,* February 2009.						

[1] Telephone conversation with Jan Sudomier from the Great Basin Unified Air Pollution Control District, April 16, 2014.

CEQA SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines contains the Modified Initial Study Environmental Checklist form used during preparation of the Modified Initial Study, which is contained in Appendix 11.1 of this SEIR. The Modified Initial Study includes questions relating to air quality. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant adverse environmental impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact Statement AQ-4).
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impact Statements AQ-1 and AQ-2).
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (refer to Impact Statements AQ-1 and AQ-2).
- Expose sensitive receptors to substantial pollutant concentrations (refer to Impact Statement AQ-3).
- Create objectionable odors affecting a substantial number of people (refer to Section 8.0, *Effects Found Not To Be Significant*).

Based on these standards/criteria, the effects of the proposed project have been categorized as either a "less than significant impact" or a "potentially significant impact." If a potentially significant impact cannot be reduced to a less than significant level through the application of goals, policies, standards, or mitigation, it is categorized as a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

5.5.4 OVERVIEW OF PREVIOUS ENVIRONMENTAL ANALYSIS

CONSISTENCY WITH AN AIR QUALITY PLAN

The EPA has classified the Basin as a non-attainment area for Federal and State PM_{10} and O_3 (State standards only) air quality standards. As a non-attainment area, the GBUAPCD was subject to the SIP, later satisfied by the 1990 AQMP pursuant to the FCAA. The 1991 PEIR concluded that construction emissions would exceed Federal and State CO standards. Mitigation measures to reduce construction equipment idling would reduce impacts to less than significant levels. The 1991 PEIR also determined that operational PM_{10} levels, as well as localized concentrations of CO levels would be exceeded. With compliance to GBUAPCD requirements and other limitations to wood burning appliances and fireplaces, operational emissions would be reduced to less than significant levels. The 1999 SPEIR concluded that the 1999 North Village Specific Plan (NVSP) Amendment

complied with the 1990 AQMP regulations applicable to wood burning appliance emissions. However, implementation of the 1999 NVSP Amendment would add increased VMT to the Town's buildout maximum VMT, exceeding the VMT Cap at that time of 106,600 prescribed in the Town's 1990 AQMP.[2] Mitigation measures such as each project contributing their fair share to the Town's vacuum street sweeping program and conversions to certified stoves/fireplaces can help reduce PM_{10} levels below the Federal threshold. The 1999 SPEIR concluded that the 1999 NVSP Amendment would result in significant and unavoidable air quality impacts for PM_{10} State standards.

AIR QUALITY VIOLATIONS

The 1991 PEIR concluded that construction impacts from PM_{10} concentrations would be potentially significant. Mitigation measures such as site watering and using drift fencing tackifiers and stockpile covering for inactive construction areas would reduce these impacts to less than significant. The 1991 PEIR identified construction vehicles and equipment as creating potentially significant hot spot violations of Federal and State CO standards. The 1991 PEIR determined that with implementation of recommended mitigation to reduce unnecessary construction equipment idling, impacts in this regard would be reduced to less than significant levels.

According to the 1999 SPEIR, clearing, excavation, grading operations, and other construction activities within the NVSP area would generate dust, with PM_{10} quantities that could violate State and Federal standards. The 1999 SPEIR concluded that construction impacts would be mitigated to a less than significant level with implementation of GBUAPCD standard dust control measures including daily clean-up and site watering during construction activities, effective covering to minimize fugitive dust release, and replanting and repaving after construction to reestablish vegetation. Additionally, construction activities would require a secondary source permit from the GBUAPCD, specifying appropriate dust control measures to further reduce potential air quality impacts to less than significant levels.

EXPOSURE TO POLLUTANT CONCENTRATIONS

The 1991 PEIR concluded that there were potentially significant operational impacts from three sources: 1) localized CO hotspots; 2) contribution to PM_{10} levels from resuspended road cinders and vehicle tail pipe and tire wear; and 3) impacts of wood burning fireplaces on PM_{10} levels. Several mitigation measures including compliance with GBUAPCD requirements and limitations on the quantity of fireplaces and wood burning appliances would reduce these impacts to less than significant levels.

The 1991 PEIR also quantified existing, future cumulative, and future cumulative plus project worst-case curbside CO concentrations expected at five intersections. Of the five intersections analyzed, two intersections (Minaret Road/Main Street and Old Mammoth Road/Main Street) were identified as exceeding the CO standard. Combined traffic impacts from cumulative development and the NVSP buildout could exceed the 8-hour CO standards for roadside receptors. However, a sensitivity analysis identified that CO levels at the Minaret Road/Main Street intersection decreased rapidly as receptors moved away from the intersection, and at 50 feet from the roadside, the 8-hour

[2] The Town's AQMP was updated in 2013 and included a new VMT Cap of 179,708, under which the project is now applicable to as part of this SEIR.

CO concentration was below the State standard. The 1-hour CO standard was not exceeded as a result of the NVSP or cumulative development.

The 1999 SPEIR determined that under the 1999 NVSP Amendment, the Minaret Road/Main Street intersection would operate at level of service (LOS) F without mitigation and then be improved to LOS D with proposed roadway/intersection improvements resulting in the 8-hour CO concentration to fall below the State standard. A new mitigation measure prohibiting development within 50 feet of the Minaret Road/Main Street intersection would reduce potential CO levels to less than significant. The 1999 SPEIR also concluded that the buildout of the 1999 NVSP Amendment would result in an increase in local and regional PM_{10} levels due to increased traffic and wood stoves. Even with implementation of recommended mitigation measures and proposed project design measures, impacts in this regard were determined significant and unavoidable for PM_{10} emissions.

5.5.5 IMPACTS AND MITIGATION MEASURES

SHORT-TERM (CONSTRUCTION) AIR EMISSIONS

AQ-1 SHORT-TERM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT WOULD RESULT IN INCREASED AIR POLLUTANT EMISSION IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO INCREASED POLLUTANT CONCENTRATIONS.

Impact Analysis: The 1999 SPEIR (pages 5.5-9 and 5.5-10) identified less than significant impacts associated with fugitive dust as construction activities within the Plan area would be required to obtain a secondary source permit from the GBUAPCD. Conditions of the permit would specify the appropriate dust control measures.

Temporary impacts would result from project construction activities. Short-term air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from grading and building construction; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated from the referenced sources are common in the man-made environment and are not known to be substantially offensive to adjacent receptors. Additionally, odors generated during construction activities would be temporary and are not considered to be a significant impact.

The project proposes the development of 67 hotel rooms and accessory uses on top of the existing parking structure podium. Construction activities would occur for approximately 12 months, and primarily involve building, paving, and painting. Minor demolition activities would be associated with the sidewalk along the project frontage on Minaret Road. A minor amount of earthwork would also be involved the project frontage.

Project construction would require tractors, loaders, paving equipment, and a crane. Emissions for each construction phase have been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod). Refer to Appendix 11.4, *Air Quality and Greenhouse Gas Data*, for the CalEEMod outputs and results. Table 5.5-5, *Maximum Daily Construction Emissions*, presents the anticipated daily short-term construction emissions.

Table 5.5-5
Maximum Daily Construction Emissions

Emissions Source	Daily Pollutant Emissions (lbs/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Unmitigated	61.64	47.88	40.10	0.05	8.08	4.99
Mitigated[2]	61.64	47.88	40.10	0.05	4.52	3.07
Significance Threshold[3]	*137*	*137*	*548*	*137*	*82*	*82*
Mitigated Emissions Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

VOC = volatile organic compounds; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns

Notes:

1. Emissions were calculated using CalEEMod.
2. The reduction/credits for construction emission mitigations are based on mitigation included in CalEEMod. The mitigation includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces twice daily; cover stock piles with tarps; water all haul roads twice daily; limit speeds on unpaved roads to 15 miles per hour; and use CARB certified engines.
3. Regional daily construction thresholds are based on the MDAQMD significance thresholds.

Refer to Appendix 11.4, *Air Quality and Greenhouse Gas Data*, for assumptions used in this analysis.

Fugitive Dust Emissions

Fugitive dust (PM_{10} and $PM_{2.5}$) from grading and construction is expected to be short-term and would cease following completion of the proposed project improvements. Most of this material is composed of inert silicates, which are less harmful to health than the complex organic particulates released from combustion sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and SO_X combining with ammonia. The greatest amount of fugitive dust generated is expected to occur during site grading and excavation. Dust generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular concern is the amount of PM_{10} generated as a part of fugitive dust emissions.

CalEEMod calculates PM_{10} and $PM_{2.5}$ fugitive dust as part of the site earthwork activity emissions; refer to Table 5.5-5. Maximum particulate matter emissions would occur during the initial stages of construction, when grading activities would occur. With the application of the 1999 SPEIR Mitigation Measure 5.5-1a, which requires adherence to GBUAPCD Rule 401 and Rule 402, the maximum mitigated particulate matter concentration would be 4.52 pounds per day (lbs/day) for PM_{10} and 3.07 lbs/day for $PM_{2.5}$. It should be noted that 1999 SPEIR Mitigation Measure 5.5-1a would be required, and has been modified to reflect project current standards and practices. Emissions would be below the thresholds of 82 lbs/day for PM_{10} and $PM_{2.5}$.

The Basin is currently classified as nonattainment for PM_{10}. Implementation of the 1999 SPEIR Mitigation Measure 5.5-1a, which includes dust control techniques (e.g., daily watering) and limitations on construction hours, would reduce impacts of PM_{10} fugitive dust. The GBUAPCD utilizes a permitting process to regulate emissions resulting from construction activities. The following list shows the rules and regulations that are applicable to the proposed project:

a. *GBUAPCD Rule 200-A and 200-B. Permits Required – Before any individual builds or operates anything, which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants, such person must obtain a written authority to construct and permit to operate from an Air Pollution Control Officer.*

b. *GBUAPCD Rule 216-A. New Source Review Requirements for Determining Impact on Air Quality Secondary Sources – Rule 216-A states a person shall not initiate, modify, construct or operate any secondary sources that will cause the emission of any air pollutant without first obtaining a permit. A secondary source is defined by the GBUAPCD as any structure, building, facility, equipment, installation, or operation which is located on one or more bordering properties within the District and which is owned, operated, or under shared entitlement to use by the same person.*

c. *GBUAPCD Rules 401 and 402. Fugitive Dust and Nuisance – Rule 401 requires that airborne particles remain on the site they originate from under normal wind conditions. Proper mitigation techniques approved by the GBUAPCD must be implemented to ensure that fugitive dust is contained. This does not apply to dust emissions discharged through a stack or other point source.*

   Rule 402 states that any air discharge that may cause injury or detriment, nuisance or annoyance, or damage to any public property or considerable number of people is regulated. This rule discusses all the health and safety issues that may interfere with public and private areas surrounding the site.

The applicable rules and regulations have been listed as reduction measures for the proposed project based on guidance from the GBUAPCD. With compliance to the 1999 SPEIR Mitigation Measures 5.5-1a and 5.5-1b for construction activities, impacts related to fugitive dust would be reduced to a less than significant level.

Construction Exhaust Emissions

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in Table 5.5-5, construction equipment and worker vehicle exhaust emissions would not exceed the emissions thresholds. The NO_X emissions during the periods described above would result in a less than significant impact during construction activities.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. ROG emissions associated with paving and architectural coating have been quantified with CalEEMod. Based on the modeling, the proposed project would not exceed ROG thresholds during construction.

Asbestos

Pursuant to guidance issued by the Governor's Office of Planning and Research, State Clearinghouse, lead agencies are encouraged to analyze potential impacts related to naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, Federal, and international agencies and was identified as a toxic air contaminant by the CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties of the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (dated August 2000), the proposed project is not located in an area where NOA is likely to be present. Therefore, impacts in this regard are less than significant.

Total Daily Construction Emissions

CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Construction would occur over approximately a 12 month period. CalEEMod allows the user to input mitigation measures such as watering the construction area to limit fugitive dust and applying soil stabilizers to the project area. Mitigation measures selected within CalEEMod allow for certain reduction credits and result in a decrease of pollutant emissions. Reduction credits are based upon studies developed by CARB and various air quality management districts throughout California, and were programmed within CalEEMod.

As indicated in Table 5.5-5, construction emissions would not exceed thresholds. The 1999 SPEIR Mitigation Measure 5.5-1a would be required to minimize fugitive dust emissions and ensure compliance with GBUAPCD Rules. Additionally, 1999 SPEIR Mitigation Measure 5.5-1b would be required to minimize exhaust emissions from construction equipment and ensure compliance with the CARB anti-idling rule (California Code of Regulations, Title 13, Section 2485). With implementation of 1999 SPEIR Mitigation Measures 5.5-1a and 5.5-1b, and compliance with applicable GBUAPCD rules (refer to Additional Mitigation Measures AQ-1 and AQ-2 that require compliance with GBUAPCD Rules 200-A, 200B, and 216A), construction emissions would be less than significant.

Applicable 1999 SPEIR Mitigation Measures: Modifications to the 1999 SPEIR mitigation measures are made in ~~strikethrough~~ and double underline text. The changes to the 1999 SEIR mitigation measures have been made to clarify/up-date the information and/or present the measure in a project-specific manner (as these measures are programmatic in nature).

5.5-1a Prior to approval of the project plans and specifications, the Public Works Director, or his designee, shall confirm that the plans and specifications stipulate that excessive fugitive dust emissions shall be controlled by regular watering or other dust preventive measures and that fugitive dust shall not cause a nuisance off-site, as specified in the Great Basin Unified Air Pollution Control District (GBUAPCD) Rules and Regulations. ~~In order to reduce fugitive dust emissions, each development project shall obtain permits, as needed, from the Town and the State APCD and shall implement~~The following measures shall be implemented during grading and/or construction of the ~~individual development sites~~ project to ensure compliance with permit conditions and applicable Town and GBUAPCD requirements.

a. The ~~individual development~~ project~~s~~ shall comply with State, GBUAPCD, Town, and Uniform Building Code dust control regulations, so as to prevent the soil from being eroded by wind, creating dust, or blowing onto a public road or roads or other public or private property.

b. Adequate watering techniques shall be employed on a daily basis to partially mitigate the impact of construction-generated dust particulates.

c. Clean-up on construction-related dirt on approach routes to ~~individual development~~ the project site~~s/improvements~~ shall be ensured by the application of water and/or chemical dust retardants that solidify loose soils. These measures shall be implemented for construction vehicle access, as directed by the Town Engineer. Measures shall also include covering, watering or otherwise stabilizing all inactive soil piles (left more than 10 days) and inactive graded areas (left more than 10 days).

d. Any vegetative ground cover to be utilized on the ~~individual development~~ the project site~~s/improvements~~ shall be planted as soon as possible to reduce the amount of open space subject to wind erosion. Irrigation shall be installed as soon as possible to maintain the ground cover.

e. All trucks hauling dirt, soil or other loose dirt material shall be covered.

5.5-1b To reduce the potential of spot violations of the CO standards and odors from construction equipment exhaust, unnecessary idling of construction equipment shall be avoided pursuant to CARB anti-idling regulations for in-use Off Road Diesel Vehicles, paragraph (d)(3) (Idling).

Additional Mitigation Measures:

AQ-1 Under the Great Basin Unified Air Pollution Control District (GBUAPCD) Rule 200-A and 200B, the project Applicant shall apply for a Permit To Construct prior to construction, which provides an orderly procedure for the review of new and modified sources of air pollution.

AQ-2 Under the Great Basin Unified Air Pollution Control District (GBUAPCD) Rule 216-A (New Source Review Requirement for Determining Impact on Air Quality Secondary Sources), the project Applicant shall complete the necessary permitting approvals prior to commencement of construction activities.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

LONG-TERM (OPERATIONAL) AIR EMISSIONS

AQ-2 DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT WOULD RESULT IN INCREASED IMPACTS PERTAINING TO OPERATIONAL AIR EMISSIONS.

Impact Analysis: The 1999 SPEIR (pages 5.5-10 through 5.5-13) concluded that the estimated daily operational emissions resulting from buildout of the 1999 NVSP Amendment would exceed the applicable Ambient Air Quality Standards for PM_{10}.

Operational emissions generated by both stationary and mobile sources would result from normal daily activities on the project site after occupation (i.e., increased concentrations of O_3, PM_{10}, and CO). Stationary area source emissions would be generated by the consumption of natural gas or propane for space and water heating devices, the operation of landscape maintenance equipment, and the use of consumer products. Stationary energy emissions would result from energy consumption associated with the proposed project. Mobile emissions would be generated by the motor vehicles traveling to and from the project site.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. This model predicts ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from motor vehicle traffic associated with new or modified land uses; refer to Appendix 11.4, *Air Quality and Greenhouse Gas Data*. According to *The Inn at the Village Project – Traffic Analysis* (Traffic Study), dated May 8, 2014, prepared by LSA Associates, Inc., (included as Appendix 11.2, *Traffic Study*), the proposed project would generate 19 peak hour trips (10 inbound and 9 outbound) on a typical weekend. Table 5.5-6, *Long-Term Operational Air Emissions*, presents the anticipated mobile source emissions.

Table 5.5-6
Long-Term Operational Air Emissions

Emissions Source	Pollutant (pounds/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Unmitigated Emissions						
Area	2.70	0.00	0.01	0.00	0.00	0.00
Energy	0.07	0.65	0.55	0.00	0.05	0.05
Mobile	5.51	11.47	43.55	0.05	2.53	0.78
Total Unmitigated Emissions	***8.29***	***12.13***	***44.11***	***0.05***	***2.58***	***0.83***
Mitigated Emissions						
Area	2.70	0.00	0.01	0.00	0.00	0.00
Energy	0.07	0.65	0.55	0.00	0.05	0.05
Mobile	5.51	11.47	43.55	0.05	2.53	0.78
Total Mitigated Emissions	***8.29***	***12.13***	***44.11***	***0.05***	***2.58***	***0.83***
Significance Threshold[2]	*137*	*137*	*548*	*137*	*82*	*82*
Is Threshold Exceeded? (Significant Impact?)	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Based on CalEEMod modeling results, worst-case seasonal emissions for area and mobile emissions have been modeled.
2. Regional daily thresholds are based on the MDAQMD significance thresholds.
3. Refer to Appendix 11.4, *Air Quality and Greenhouse Gas Data*, for assumptions used in this analysis.

Stationary Source Emissions

Stationary source emissions would be generated due to an increased demand for electrical energy and propane/natural gas with the development of the proposed project; refer to Table 5.5-6. This assumption is based on the supposition that those power plants supplying electricity to the site are utilizing fossil fuels. Electric power generating plants are distributed throughout the Basin and western United States, and their emissions contribute to the total regional pollutant burden. The primary use of propane/natural gas by the proposed land uses would be for combustion to produce space heating, water heating, other miscellaneous heating, or air conditioning, consumer products, and landscaping.

Conclusion

As described above, the project involves the development of 67 hotel rooms above an existing parking structure podium and would generate 19 peak hour trips. The project site is within the North Village District. Although the project would increase density on the site, it would accommodate the increase by transferring 30 rooms from one of the Mammoth Crossing sites. Therefore, the project would not result in overall growth beyond what is anticipated in the Town's 2007 General Plan and the NVSP. Furthermore, the recommended 1999 SPEIR Mitigation Measures 5.5-2a through 5.5-2c would require the project to implement measures that would minimize operational emissions from mobile sources (including reentrained dust) and particulates from wood-burning fireplaces. As operational emissions would not exceed the applicable thresholds, impacts in this regard would be reduced to less than significant levels.

Applicable 1999 SPEIR Mitigation Measures: Modifications to the 1999 SPEIR mitigation measures are made in ~~strikethrough~~ and double underline text. The changes to the 1999 SEIR mitigation measures have been made to clarify/up-date the information and/or present the measure in a project-specific manner (as these measures are programmatic in nature).

MM 5.5-2a In order to reduce emissions associated with both mobile and stationary sources (i.e., wood burning stoves and fireplaces), ~~all individual development projects~~ the proposed project shall adhere to the regulations contained in the 2013 Air Quality ~~Management~~ Maintenance Plan for the Town of Mammoth Lakes and Chapter 8.30, Particulate Emission Regulations, of the Town's Municipal Code. The commercial use tenants throughout the Specific Plan area shall, at a minimum, include the following, as appropriate:

- Bicycle racks, lockers or secure storage areas for bicycles;
- Transit access, including bus turnouts;
- Site access design shall avoid queuing in driveways; and
- Mulch, groundcover, and native vegetation to reduce dust.

MM 5.5-2b ~~Each~~ The proposed project shall contribute on a fair share basis to the Town's street sweeping operations in order to reduce emissions and ~~achieve~~ maintain the required Federal standard.

MM 5.5-2c ~~New development within the Specific Plan area shall not be permitted to utilize wood burning appliances unless the Federal standard is documented to not be exceeded.~~ Prior to approval of building plans, the Applicant shall provide confirmation, to the satisfaction of the Town of Mammoth Lakes Community and Economic Development Department, that wood fired stoves or appliances would not be used on-site.

Additional Mitigation Measures: No additional mitigation measures are required.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

LOCALIZED EMISSIONS

AQ-3 DEVELOPMENT ASSOCIATED WITH THE PROJECT WOULD NOT RESULT IN SIGNIFICANT LOCALIZED EMISSIONS IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL INCREASED POLLUTANT CONCENTRATIONS.

Impact Analysis: The 1999 SPEIR (pages 5.5-13 through 5.5-14) identified three intersections (Old Mammoth Road/Main Street, Minaret Road/Main Street, and Forest Trail/Main Street) that would decrease to an unacceptable LOS and have the potential to exceed CO standards. The 1999 SPEIR identified mitigation measures prohibiting development within 50 feet of the Minaret Road/Main Street intersection, which would reduce potential CO levels to less than significant. It should be noted that the project site is located more than 300 feet from this intersection.

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

In order to identify CO hotspots, the South Coast Air Quality Management District (SCAQMD) criterion was utilized since the GBUAPCD does not currently have a preferred methodology. The SCAQMD requires a quantified assessment of CO hotspots when a project increases the volume-to-capacity ratio (also called the intersection capacity utilization) by 0.02 (two percent) for any intersection with an existing level of service LOS D or worse. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections.

The Basin is designated as an attainment area for the Federal and State CO standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for the SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscale modeling in the CO Plan are worst-case intersections in the Basin, and would likely experience the highest CO concentrations. Thus, CO analysis within the CO Plan is utilized in a comparison to the proposed project, since it represents a worst-case scenario with heavy traffic volumes.

Of these locations, the Wilshire Boulevard/Veteran Avenue intersection in Los Angeles experienced the highest CO concentration (4.6 parts per million [ppm]), which is well below the 35-ppm 1-hr CO Federal standard. The Wilshire Boulevard/Veteran Avenue intersection is one of the most congested intersections in Southern California with an average daily traffic (ADT) volume of approximately 100,000 vehicles per day. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection, it can be reasonably inferred that CO hotspots would not be experienced at any intersections within the Town near the project site due to the low volume of traffic (190 daily trips and 19 peak hour trips) that would occur as a result of project implementation. Therefore, impacts would be less than significant in this regard.

Carbon Dioxide

The Town is located near the southwest edge of the Long Valley Caldera, which overprints the Sierra Nevada boundary fault system. Persistent earthquake and volcanic activity over the past four million years have formed the eastern Sierra landscape in the vicinity of Long Valley Caldera and the Mono Basin. Detailed surveys indicate that the central portion of the Long Valley Caldera has risen more than 30 inches since the late 1970s, possibly in response to the filling of a shallow magma chamber. In 1990, it was recognized that magmatic gasses were killing trees in certain portions of

the caldera. The trees were killed by high carbon dioxide flux in the soil gasses surrounding their roots. The most well-known location of high carbon dioxide soil gas is at the north end of Horseshoe Lake where scientists estimate between 50 and 150 tons of carbon dioxide are emitted daily. However, based on studies performed by the California Geological Survey and the U.S. Geological Survey it should be noted that there have been no areas of high carbon dioxide flux identified in the project vicinity. Therefore, the proposed project would not be exposed to carbon dioxide in this regard and impacts are less than significant.

Applicable 1999 SPEIR Mitigation Measures: No 1999 SPEIR mitigation measures are applicable to this topical area.

Additional Mitigation Measures: No additional mitigation measures are required.

Level of Significance: Less Than Significant Impact.

CONSISTENCY WITH REGIONAL PLANS

AQ-4 DEVELOPMENT ASSOCIATED WITH THE PROJECT WOULD BE CONSISTENT WITH REGIONAL PLANS.

Impact Analysis: The 1999 SPEIR concluded that the estimated daily operational emissions resulting from buildout of the 1999 NVSP Amendment would exceed the applicable Ambient Air Quality Standards for PM_{10}. Therefore, impacts were determined to conflict with the 1990 AQMP.

As described above, according to the 1990 AQMP, particulate matter from road dust and soot from wood combustion primarily causes PM_{10} violations in the Town. In other words, tailpipe emissions from heavy-duty diesel engines constitute a minor or negligible component of PM_{10} impacts in the Mammoth Lakes area. In addition, motor vehicle emissions such as those used in snow-removal equipment have been greatly reduced since the 1990 AQMP analysis was completed because State and Federal programs now require the use of low-sulfur diesel fuel as of 2006.

The monitoring data and modeling analysis within the 2013 AQMP determined that with implementation of the control measures from the 1990 AQMP, PM_{10} levels in the Town have declined significantly. The updated emissions estimate in the 2013 AQMP shows 3,385 kg/day PM_{10} in 2012, which is a 20 percent reduction in emissions since 1990 when the AQMP was adopted. This reduction was achieved despite a 72 percent population increase from 4,785 in 1990 to 8,234 in 2010.

The 2013 AQMP also models emissions associated with the estimated 179,708 VMT at 2007 General Plan buildout. The VMT estimate is based on a revised traffic model for the community that incorporates additional roadway segments and revises VMT projections based on updated traffic counts and current modeling technologies. The air quality modeling shows that this overall level of traffic would not cause an exceedence of the NAAQS and is suggested as the VMT limit for the 2013 AQMP.

The proposed project would construct a seven-story hotel of 34,840 square feet and up to 67 rooms, and an additional 29,910 square feet of accessory uses. This increase in density at the project site would be accommodated by a proposed density transfer from one of the Mammoth Crossing sites

to the project site. Thus, although the proposed project would increase densities at the site, the overall approved density for the NVSP area would remain the same after implementation of the proposed project. Development associated with the proposed project would be consistent with what is anticipated in the Town's 2007 General Plan. Therefore, VMT associated with the project are included in the 2007 General Plan buildout VMT estimate that is included in the modeling for the 2013 AQMP.

Future development within the Town has been anticipated within the recent 2007 General Plan. In order to address the anticipated increase at future buildout, the 2007 General Plan has included several goals and policies to further regulate the anticipated PM_{10} emissions resulting from the increased VMT. Such goals and policies would build upon the regulations set forth within the current Municipal Code, Chapter 8.30, and GBUAPCD Rule 431. As an example of the new goals and policies, the 2007 General Plan has included the use of higher density residential and mixed-use development adjacent to commercial centers, mountain portals, and transit corridors, which would reduce the number of vehicle trips, VMT, and encourage alternative modes of transportation.

As the proposed project is anticipated in the 2007 General Plan and 2013 AQMP, implementation of the proposed project would not conflict with the 2013 AQMP. Additionally, the project would be required to comply with the applicable 2007 General Plan policies, which would further reduce impacts associated with plan consistency to a less than significant level.

Applicable 1999 SPEIR Mitigation Measures: No 1999 SPEIR mitigation measures are applicable to this topical area.

Additional Mitigation Measures: No additional mitigation measures are required.

Level of Significance: Less Than Significant Impact.

5.5.6 CUMULATIVE IMPACTS

The 1999 SPEIR (page 5.5-15) concluded that 1999 NVSP Amendment would contribute to a current violation of PM_{10} State and Federal standards resulting in cumulative operational impacts. This contribution would result in a significant and unavoidable impact.

Table 4-1, *Cumulative Projects List*, identifies the related projects and other possible development in the area determined as having the potential to interact with the proposed project to the extent that a significant cumulative effect may occur. The following discussions are included per topic area to determine whether a significant cumulative effect would occur.

SHORT-TERM (CONSTRUCTION) AIR EMISSIONS

- **SHORT-TERM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS, WOULD RESULT IN INCREASED AIR POLLUTANT EMISSION IMPACTS OR EXPOSE SENSITIVE RECEPTORS TO INCREASED POLLUTANT CONCENTRATIONS.**

Impact Analysis: Of the 22 projects that have been identified within the proposed project study area, there are a number of related projects that have not been built or are currently under construction. Since applicants have no control over the timing or sequencing of the related projects, any quantitative analysis to ascertain the daily construction emissions that assumes multiple, concurrent construction would be speculative.

The GBUAPCD has developed a permitting process prior to the construction of any development within the Basin to ensure that construction activities would not result in exceedances of NAAQS. The GBUAPCD emphasizes the use of control measures during construction activities. As stated in Impact Statement AQ-1, mitigation measures would reduce impacts associated with construction through the application of proper permits and by demonstrating that the appropriate control measures would be utilized during construction activities. With implementation of 1999 SPEIR Mitigation Measures 5.5-1a and 5.5-1b and Additional Mitigation Measures AQ-1 and AQ-2, the project would comply with all applicable GBUAPCD Rules and the project's cumulative contribution would be less than significant in this regard.

Applicable 1999 SPEIR Mitigation Measures: Refer to 1999 SPEIR Mitigation Measures 5.5-1a and 5.5-1b.

Additional Mitigation Measures: Refer to Additional Mitigation Measures AQ-1 and AQ-2.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

LONG-TERM (OPERATIONAL) AIR EMISSIONS

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS, WOULD RESULT IN INCREASED IMPACTS PERTAINING TO OPERATIONAL AIR EMISSIONS.**

Impact Analysis: The GBUAPCD's approach for assessing cumulative impacts related to operations is based on the attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. A significant impact may occur if a project would add a cumulatively considerable contribution of a Federal or State non-attainment pollutant. Because the Basin is currently in nonattainment for O_3 and PM_{10}, related projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance.

As discussed above, the proposed project would not result in long-term air quality impacts, as emissions would not exceed applicable operational thresholds. Development associated with the proposed project would be consistent with what is anticipated in the 1999 SPEIR and the Town's 2007 General Plan. Additionally, adherence to GBUAPCD rules and regulations (as required by 1999 SPEIR Mitigation Measures 5.5-2a through 5.5-2c) would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.

Applicable 1999 SPEIR Mitigation Measures: Refer to 1999 SPEIR Mitigation Measures 5.5-2a through 5.5-2c.

Additional Mitigation Measures: No additional mitigation measures are required.

Level of Significance: Less Than Significant Impact With Mitigation Incorporated.

5.5.7 SIGNIFICANT UNAVOIDABLE IMPACTS

No unavoidable significant impacts related to air quality have been identified in this section.