3.6 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable policies and regulations, and an analysis of potential impacts to air quality associated with construction and operation of the Tahoe Cross-Country Lodge Replacement and Expansion Project. During the NOP scoping process, staff from the Placer County Air Pollution Control District (PCAPCD) suggested that the EIR should compare the Project's emissions to the PCAPCD's recommended CEQA significance criteria.

The proposed Project and Alternative A would not introduce sources of objectionable odors (i.e., wastewater treatment plants, sanitary landfills, compositing facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food-packaging plants). None of these odorous land uses are within proximity to the proposed Project or Alternative A sites. Thus, impacts related to odor are not discussed further.

Changing the pattern of ownership of parcels as part of the larger land exchange being contemplated by TCPUD and the Conservancy by itself would have no impact on air quality. The potential environmental effects from construction and operation of the proposed Project on a portion of APN 093-160-064, currently owned by the Conservancy, are assessed in this section and other resource sections in Chapter 3, "Environmental Setting, Environmental Impacts, and Mitigation Measures," and in Chapter 5, "Other CEQA-Mandated Sections," of this EIR. The purpose of the land exchange is to consolidate ownership and increase land management efficiencies for the agencies and no other physical changes are proposed for the affected parcels.

3.6.1 Regulatory Setting

Air quality in the Tahoe Basin is regulated through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy making, education, and a variety of programs. The agencies responsible for improving the air quality within the air basin are discussed below.

FEDERAL

U.S. Environmental Protection Agency

Clean Air Act

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates draw primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants and hazardous air pollutants (HAPs). EPA regulations concerning criteria air pollutants and HAPs are presented in greater detail below.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants found all over the U.S. referred to as criteria air pollutants. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with aerodynamic diameter of 10 micrometers or less (PM_{10}) and fine particulate matter with aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The NAAQS are shown in Table 3.6-1. The primary standards protect public health and the secondary standards protect public welfare. The CAA also requires each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. California's SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that

imposes additional control measures. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table 3.6-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[1,2]	NAAQS[3]	
			Primary[2,4]	Secondary[2,5]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	6 ppm[4, 6] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hour	—	35 µg/m^3	Same as primary standard
Lead	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	—	—
	Rolling 3-Month Average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride[7]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: CAAQS = California ambient air quality standards, NAAQS = national ambient air quality standards, µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million

1 California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, 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.

2 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

3 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

4 National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

5 National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6 The California ambient air quality standards are 9 parts per million; however, in the Lake Tahoe Air Basin, this standard is 6 parts per million. CARB established this more stringent standard in 1976 based on the Lake Tahoe Basin's elevation and associated thinner air.

7 The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, HAPs, are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.6-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA regulates HAPs through the National Emission Standards for Hazardous Air Pollutants. The standards for a particular source category require the maximum degree of emission reduction that EPA determines to be achievable, which is known as the Maximum Achievable Control Technology—MACT standards. These standards are authorized by Section 112 of the CAA and the regulations are published in 40 Code of Federal Regulations (CFR) Parts 61 and 63.

In California, the California Air Resources Board (CARB) regulates TACs through statutes and regulations that generally require the use of the best available control technology (BACT) for air toxics to limit emissions.

TAHOE REGIONAL PLANNING AGENCY

Thresholds

The Tahoe Regional Planning Agency (TRPA) has established thresholds that address CO, ozone, regional and sub-regional visibility, and nitrate deposition. Numerical standards have been established for each of these parameters, and management standards have been developed that are intended to assist in attaining the thresholds. The management standards include reducing PM, maintaining concentrations of oxides of nitrogen (NO_X), reducing traffic volumes on US 50, and reducing vehicle miles traveled (VMT). In addition, the TRPA Compact between California and Nevada states that the Regional Plan shall provide for attaining and maintaining federal, state, or local air quality standards, whichever are strictest, in the respective portions of the Lake Tahoe Region (Region) in which the standards apply. The TRPA threshold related to VMT and traffic volumes on US 50 are addressed further in Section 3.5, "Transportation," of this EIR.

Lake Tahoe Regional Plan

Goals and Policies

The Goals and Policies of the Lake Tahoe Regional Plan are designed to achieve and maintain adopted environmental thresholds carrying capacities and are implemented through TRPA's Code, Environmental Improvement Program, and 2017 Regional Transportation Plan (in coordination with the Tahoe Metropolitan Planning Organization). The Land Use Element of the Goals and Policies document consists of seven sub-elements, including the Air Quality Sub-element.

TRPA has jurisdiction within the Lake Tahoe Area Basin (LTAB)-portion of Placer and El Dorado Counties in regard to air quality. Therefore, the Air Quality Sub-element of the Goals and Policies document focuses on achieving the NAAQS and California ambient air quality standards (CAAQS), as well as special TRPA-adopted regional and sub-regional visibility standards, and on reducing the deposition of nitrate from NO_X emitted by vehicles. The TRPA Code and the Regional Transportation Plan contain specific measures designed to monitor and achieve the air quality objectives of the Regional Plan. PCAPCD rules and regulations (discussed below) also have certain applications in the LTAB.

Code of Ordinances

Applicable provisions of the TRPA Code are described below.

Chapter 33—Grading and Construction

Chapter 33 includes requirements about grading and construction activity, which include limiting grading and earth disturbance activity to the portion of the calendar year between May 1 and October 15, unless approval is granted by TRPA and appropriate dust control measures are implemented. TRPA may approve grading after October 15 if TRPA finds either that an emergency exists and that grading is necessary for the protection of public health or safety, or that the grading is for erosion control purposes or protection of water quality. Appropriate dust control measures include watering exposed surfaces and covering loose materials.

Section 65.1—Air Quality Control

The provisions of Section 65.1 apply to direct sources of air pollution in the Region, including certain motor vehicles registered in the Region, combustion heaters installed in the Region, open burning and stationary sources of air pollution, and idling combustion engines. Provisions potentially applicable to the Project are provided below.

- Section 65.1.3, Vehicle Inspection and Maintenance Program, states that to avoid duplication of effort in implementation of an inspection/maintenance program for certain vehicles registered in the CO nonattainment area, TRPA shall work with the affected state agencies to plan for applying state inspection/maintenance programs to the Region.
- Section 65.1.4, Combustion Appliances, establishes emissions standards for wood heaters, as well as natural gas- or propane-fired water heaters and central furnaces.
- Section 65.1.8, Idling Restrictions, states that no person shall cause a combustion engine in a parked auto, truck, bus, or boat to idle for more than 30 consecutive minutes in the designated plan areas (with limited exemptions).

Section 65.2—Traffic and Air Quality Mitigation Program

The requirements of the traffic and air quality mitigation program are applicable to all additional development or transferred development and all changes in operation. Section 65.2.3 defines a change in operation as any modification, change, or expansion of an existing or previous use resulting in additional vehicle trip generation, including expansion of gross floor area. As provided in TRPA Code Section 65.2.5.C, TRPA shall assess an air quality mitigation fee, based on data from the Trip Table or other competent technical information, according to the fee schedule in Subsection 10.8.5 of the TRPA Rules of Procedure.

TRPA Best Construction Practices Policy for Construction Emissions

TRPA is committed to continue to monitor and adaptively manage construction emissions through existing permit compliance programs. Pre-grade inspections occur for every permitted project before any ground-disturbing activities. These inspections verify that all required permit conditions, such as the location of staging areas and the use of approved power sources are in place before intensive construction activities. In addition, compliance inspections occur throughout the period of construction activity to verify compliance with all permit requirements. These compliance inspections are a core function of TRPA and local jurisdiction building departments, and will continue into the future. If an inspection determines that a project is not in compliance with permit conditions, then enforcement actions are taken, which can include stopping activity at the construction site and monetary fines.

In addition to existing permit limits, TRPA developed a Best Construction Practices Policy for Construction Emissions, pursuant to the requirements of the 2012 Regional Plan Update Environmental Impact Statement (RPU EIS) mitigation measures adopted by the TRPA Governing Board. This policy addresses potentially significant construction-generated emissions of greenhouse gases (GHGs) associated with development under the RPU. The following items from TRPA's Best Construction Practices Policy for Construction Emissions are relevant to the Project:

- TRPA Code Section 65.8.1 was revised to, among other things, limit idling for diesel engines exceeding 10,000 pounds gross vehicle weight or off-road self-propelled equipment exceeding 25 horsepower to no longer than 5 minutes in California and 15 minutes in Nevada.

- TRPA's Standard Conditions of Approval for projects involving grading (Attachment Q, Standard Conditions of Approval for Construction Projects) was revised to:
  - limit idling time for diesel-powered vehicles exceeding 10,000 pounds in Gross Vehicle Weight and self-propelled equipment exceeding 25 horsepower (hp) to no more than 15 minutes in Nevada and 5 minutes in California, or as otherwise required by state or local permits;
  - utilize existing power sources (e.g., power poles) or clean-fuel generators rather than temporary diesel power generators, wherever feasible; and
  - locate construction staging areas as far as feasible from sensitive air pollution receptors (e.g., schools or hospitals).
- The standard conditions of approval for grading projects also include a requirement for inclusion of dust control measures where earth-moving activities would occur.
- Implementation of a Contractor Recognition Program to incentivize exceedance of regulatory requirements related to emissions-reducing construction practices.

The overall effectiveness of these measures and other efforts to attain and maintain air quality standards will continue to be monitored through a comprehensive multi-agency air quality program. The existing air quality monitoring program is being expanded to ensure adequate data continues to be available to assess the status and trends of a variety of constituents. In 2011, TRPA established additional ozone and PM monitoring at the Stateline Monitoring Site. Working under a cooperative agreement with TRPA, PCAPCD installed additional ozone and PM_{10} monitors in Tahoe City and Kings Beach in 2011 (though the monitor at Kings Beach is no longer operated). In 2013, TRPA installed an additional Visibility Monitoring Station and an ozone monitor in South Lake Tahoe.

If ongoing monitoring determines that these measures and other efforts to achieve adopted air quality standards have not been successful, then TRPA will develop and implement additional compliance measures as required by Chapter 16 of the TRPA Code. Additional compliance measures could include additional required construction best practices, an expanded rebate program to replace non-conforming woodstoves or other emission-producing appliances, or restrictions on other emission sources such as off-highway vehicles or boats.

Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy

In 2017, TRPA adopted the *Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy* (RTP/SCS) which seeks to improve mobility and safety for the commuting public while at the same time delivering environmental improvements throughout the transportation network in the Region. The RTP/SCS offers strategies to address the travel demands of residents, commuters, and the millions of people who visit the Region each year. Important directions of the plan are to reduce the overall environmental impact of transportation in the Region, create walkable, vibrant communities, and provide real alternatives to driving. The goals and policies in the RTP/SCS were developed to serve as the Transportation Element of the Regional Plan (TRPA 2017).

Placer County Tahoe Basin Area Plan

The following policies from the Placer County Tahoe Basin Area Plan (Area Plan) apply to air quality and are relevant to the project.

- **Policy AQ-P-4:** Prioritize projects and services that reduce VMT and support alternative modes of transportation.
- **Policy AQ-P-6:** Continue to implement the mPOWER incentive program to reduce GHG emissions from buildings and other site improvements.
- **Policy AQ-P-7:** Implement building design standards and design capital improvements to reduce energy consumption and where feasible to incorporate alternative energy production.
- **Policy AQ-P-8:** All TRPA policies, ordinances and programs related to air quality will remain in effect.

The environmental document prepared for the Area Plan (i.e., the Placer County Tahoe Basin Area Plan and Tahoe City Lodge Project EIR/EIS [Area Plan EIR/EIS]) determined that air pollution associated with construction and operation of land uses under the Area Plan would have an adverse impact on air quality within the LTAB (Placer

County and TRPA 2016:11-13 through 11-42). The Area Plan EIR/EIS identified plan-level mitigation that would apply to all new construction located within the Area Plan boundaries. Placer County and TRPA developed Mitigation Measures 11-2a, 11-2b, and 11-5 to ensure that new land use projects constructed under the Area Plan would not generate levels of criteria air pollutants and precursors that could affect the attainment designation of the LTAB for the NAAQS and CAAQS or expose sensitive receptors to harmful levels of TACs. Mitigation Measures 11-2a and 11-5 are shown below and would apply to the project (Placer County and TRPA 2016:11-21 through 11-39):

> Mitigation Measure 11-2a: Reduce Short-term Construction-Generated Emissions of ROG, NO_X, and PM_{10}
>
> Proponents of individual land use development projects in the Plan area subject to TRPA and/or CEQA environmental review shall be required to demonstrate that construction-related emissions of ROG, NO_X, and PM_{10} for each project would be less than PCAPCD's significance criteria of 82 lb/day. Every project applicant shall require its prime construction contractor to implement the following measures:
>
> - Submit to PCAPCD a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that would be used for 40 or more hours, in aggregate, during a construction season. If any new equipment is added after submission of the inventory, the prime contractor shall contact PCAPCD before the new equipment is used. At least three business days before the use of subject heavy-duty off-road equipment, the project representative shall provide PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and onsite foreman;
> - Before approval of Grading or Improvement Plans, whichever occurs first, the prime contractor shall submit for PCAPCD approval, a written calculation demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20 percent reduction in NO_X emissions as compared to CARB statewide fleet average emissions. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The calculation shall be provided using PCAPCD's Construction Mitigation Calculator;
> - Use existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators during construction rather than temporary diesel power generators to the extent feasible;
> - During construction, minimize idling time to a maximum of 5 minutes for all diesel-powered equipment; and/or
> - Post signs in the designated queuing areas of the construction site to remind off-road equipment operators that idling is limited to a maximum of 5 minutes.
>
> Every project applicant shall require additional measures, as necessary, to ensure that construction-related emissions would not exceed PCAPCD's significance criteria for of ROG, NO_X, and PM_{10} of 82 lb/day. These additional measures may include, but are not limited to, the following:
>
> - Use of Tier 3 or better engines for construction equipment,
> - Use of no- or low-solids content (i.e., no- or low-volatile organic compound [VOC]) architectural coatings that meet or exceed the VOC-requirements of PCAPCD Rule 218. Implementation of this measure would reduce ROG emissions from architectural coating by 90 percent, and/or
> - Participate in PCAPCD's offsite mitigation program, the Land Use Air Quality Mitigation Fund, by paying the equivalent amount of fees for the project's contribution of ROG or NO_X that exceeds the 82 lb/day significance criteria, or the equivalent as approved by PCAPCD. The applicable fee rates of the program change over time. The actual amount to be paid shall be determined, and satisfied per current guidelines, at the time of approval of the Grading or Improvement Plans.

Mitigation Measure 11-5: Reduce Short-Term Construction-Generated TAC Emissions

TRPA shall require proponents of every individual land use development project proposed in the Plan area to demonstrate that its construction activities would follow PCAPCD's recommended best management practices (BMPs). To ensure sensitive receptors are not exposed to substantial TAC concentrations, every project applicant shall require its prime construction contractor to implement the following measures prior to project approval:

- Work with PCAPCD staff to determine if project construction would result in release of diesel emissions in areas with potential for human exposure, even if overall emissions would be low. Factors considered by PCAPCD when determining significance of a project include the expected emissions from diesel equipment including operation time, location of the project, and distance to sensitive receptors. (PCAPCD 2012:2-6).
- Use PCAPCD's guidance to determine whether construction of an individual project would require detailed evaluation with a health risk assessment (HRA) (PCAPCD 2012:Appendix E). If an HRA is required, model emissions, determine exposures, and calculate risk associated with health impacts, per PCAPCD guidance. Coordinate with PCAPCD to determine the significance of the estimated health risks.

STATE

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish CAAQS (Table 3.6-1).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility reducing particulate matter, and the above-mentioned national criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources. The CCAA also provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate BACT for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

Placer County Air Pollution Control District

Criteria Air Pollutants

PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of PCAPCD includes preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. PCAPCD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAA Amendments, and CCAA.

All projects in Placer County are subject to PCAPCD's adopted rules and regulations. Specific rules applicable to the project may include but are not limited to the following:

- PCAPCD Rule 218—Application of Architectural Coatings. This rule limits the quantity of VOCs in architectural coatings used in PCAPCD's jurisdiction. Subsection 301 lists VOC content limits for a variety of architectural coatings.
- PCAPCD Rule 228—Fugitive Dust. To regulate fugitive dust emissions, this rule prescribes limits and BMPs to be applied during construction and project operation.

Toxic Air Contaminants

At the local level, PCAPCD may adopt and enforce CARB's airborne toxic control measures. Under PCAPCD Rule 501 ("Permit Requirements"), PCAPCD Rule 502 ("New Source Review"), and PCAPCD Rule 507 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from PCAPCD. PCAPCD may grant permits to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. PCAPCD limits emissions and public exposure to TACs through a number of programs.

Sources that require a permit are analyzed by PCAPCD (e.g., HRA) based on their potential to emit TACs that would expose receptors to substantial health risk. If it is determined that a source would emit TACs in excess of PCAPCD's standard of significance for TACs (identified below), then the source would have to implement the BACT for TACs to reduce emissions. If a source cannot reduce the risk below the standard of significance even after the BACT has been implemented, PCAPCD will deny issuing a permit to the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new TAC-reduction technology when being retrofitted.

3.6.2 Environmental Setting

The project is located in the LTAB and in Placer County, California. The ambient concentrations of air pollutant emissions are determined by the amount of criteria pollutants and precursors emitted by the sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the LTAB are determined by such natural factors as topography, meteorology, and climate.

CLIMATE, METEOROLOGY, AND TOPOGRAPHY

The Region is located in the LTAB that comprises portions of Placer and El Dorado counties in California, and Washoe and Douglas counties and the Carson City Rural District in Nevada. Lake Tahoe lies in a depression between the crests of the Sierra Nevada and Carson ranges at a surface elevation of 6,260 feet above sea level. The mountains surrounding Lake Tahoe are approximately 8,000 to 9,000 feet high, with some reaching beyond 10,000 feet.

According to documents from the Tahoe Integrated Information Management System, the bowl shape of the LTAB has significant air quality implications. There are two meteorological regimes that affect air quality in the basin.

First, thermal inversions occur when a warm layer of air traps a cold layer of air at the surface of the land and lake. Locally generated air pollutants are often trapped in the "bowl" by frequent inversions that limit the amount of air mixing, which allows pollutants to accumulate. Inversions most frequently occur during the winter in the LTAB, however are common throughout the year. Often, wintertime inversions result in a layer of wood smoke, mostly from residential heating, which can be seen over the Lake.

The second meteorological regime affecting air quality in the LTAB is the atmospheric transportation of pollutants from the Sacramento Valley and San Francisco Bay Area. Lake Tahoe's location directly to the east of the crest of the Sierra Nevada mountain range allows prevailing easterly winds, combined with local mountain upslope winds, to bring air from populated regions west of the Sierra to the LTAB. The strength of this pattern depends on the amount of heat, usually strongest in summer beginning in April and ending in late October.

The local meteorology of the proposed Project and Alternative A sites and surrounding area is represented by measurements recorded at the Western Regional Climate Center (WRCC) Tahoe City Station. Based on historic data from 1903 to 2016, the normal annual precipitation is approximately 31.5 inches and average total snowfall is 190.7 inches. Based on the most recent data available, January temperatures range from a normal minimum of 19.1°F to a normal maximum of 38.6°F. July temperatures range from a normal minimum of 44.4°F to a normal maximum of 77.9°F (WRCC 2016). The prevailing wind direction is from the south (WRCC 2002).

CRITERIA AIR POLLUTANTS

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the LTAB is provided below. Emission source types and health effects are summarized in Table 3.6-2. Placer County's attainment status for the CAAQS and the NAAQS are shown in Table 3.6-3.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are VOCs that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Emissions of the ozone precursors ROG and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_X decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (CARB 2013).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2012).

Particulate Matter

PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and PM formed in the atmosphere by reaction of gaseous precursors (CARB 2013). $PM_{2.5}$ includes a subgroup of smaller particles. PM_{10} emissions in the LTAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} are projected to remain relatively constant through 2035. Direct emissions of $PM_{2.5}$ have steadily declined in the LTAB between 2000 and 2010 and then are projected to increase slightly through 2035. Emissions of $PM_{2.5}$ in the LTAB are dominated by the same sources as emissions of PM_{10} (CARB 2013). Particulate emissions can also negatively affect visibility in the LTAB.

Table 3.6-2 Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO_X results from the combustion of fuels	Increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	Permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	Headache, dizziness, fatigue, nausea, vomiting, death	Permanent heart and brain damage
Nitrogen dioxide (NO_2)	Combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	Coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	Chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	Coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	Fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	Breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	Alterations to the immune system, carcinogenesis
Lead	Metal processing	Reproductive/ developmental effects (fetuses and children)	Numerous effects including neurological, endocrine, and cardiovascular effects

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases

[1] Acute health effects refer to immediate illnesses caused by short-term exposures to criteria air pollutants at fairly high concentrations. An example of an acute health effect includes fatality resulting from short-term exposure to carbon monoxide levels in excess of 1,200 parts per million.

[2] Chronic health effects refer to cumulative effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations. An example of a chronic health effect includes the development of cancer from prolonged exposure to particulate matter at concentrations above the national ambient air quality standards.

Source: EPA 2018

Attainment Area Designations

PCAPCD and CARB operate a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants within the LTAB. Existing and probable future levels of air quality in the north eastern Placer County can generally be inferred from ambient air quality measurements conducted by PCAPCD at its nearby monitoring stations. These monitoring stations measure maximum daily concentrations and the number of days during which CAAQS or NAAQS for a given pollutant were exceeded and are available through CARB's website. The Tahoe City Monitoring Station located at 221 Fairway Drive measures concentrations of ozone and $PM_{2.5}$ and informs the attainment status of the Tahoe Basin portion of Placer County under the NAAQS and CAAQS. Based on the findings of other monitoring stations in Placer County, the Sacramento Valley Air Basin and Mountain Counties Air Basin portions of Placer County are in nonattainment for several of the NAAQS and CAAQS.

Both CARB and EPA use ambient air quality monitoring data to designate the attainment status of an area relative to the CAAQS and NAAQS for each criteria air pollutant. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." "Unclassified" is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called "nonattainment-transitional." The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. Attainment designations in the LTAB are shown in Table 3.6-3 for each criteria air pollutant.

Table 3.6-3 Attainment Status Designations for Placer County

Pollutant	National Ambient Air Quality Standard	California Ambient Air Quality Standard
Ozone	–	Attainment (1-hour)
	Unclassified/Attainment (8-hour)[1]	Attainment (8-hour)
	Nonattainment (8-hour)[2]	
Respirable particulate matter (PM_{10})	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter ($PM_{2.5}$)	Attainment (24-hour)	–
	Attainment (Annual)	Attainment (Annual)
Carbon monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO_2)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (Annual)	Attainment (Annual)
Sulfur dioxide (SO_2)[3]	Unclassified/Attainment (1-Hour)	Attainment (1-hour)
		Attainment (24-hour)
Lead (Particulate)	Attainment (3-month rolling avg.)	Attainment (30 day average)
Hydrogen Sulfide	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly Reducing Particles		Unclassified (8-hour)
Vinyl Chloride		Unclassified (24-hour)

Notes:

[1] 1997 – Standard

[2] 2008 – Standard

[3] 2010 – Standard

Source: CARB 2018

TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality*, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM (CARB 2013). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Diesel PM poses the greatest health risk among these 10 TACs mentioned. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013).

SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals who may be particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants. Sensitive receptors near the proposed Project and Alternative A sites include students at the North Tahoe High School and North Tahoe Middle School and residences along project roadways (such as Polaris Road and Country Club Drive). Based on data from the 2019/2020 school year, 398 and 446 students were enrolled in North Tahoe High School and North Tahoe Middle School, respectively (Public School Review 2019a and 2019b). There are no other sensitive receptors within the vicinity of the proposed Project and Alternative A.

3.6.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, and CO concentrations were assessed in accordance with PCAPCD-recommended methods. The Project's emissions are compared to PCAPCD-adopted significance criteria.

Construction and operational emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program, as recommended by PCAPCD and other air districts in California. Modeling was based on project-specific information (e.g., size, area to be graded, area to be paved) where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type. Emissions of criteria pollutants and precursors would be generated from the combustion of diesel fuels to power heavy-duty equipment and the release of fugitive particulates from the movement of materials and ground disturbance (i.e., grading and excavation). Construction would begin as early as Spring 2021. Early in the planning stages for the Project, construction activities were anticipated to occur over up to four construction seasons, which is reflected in Tables 3.6-4 and 3.6-5, below, but could be completed in as few as 2 years. Consistent with Chapter 65 of the TRPA Code of Ordinances, construction-related ground disturbance was assumed to be limited to May 1 through October 15. Specific model assumptions and inputs for these calculations are provided in Appendix D.

CO impacts were assessed qualitatively, using the screening criteria set forth by PCAPCD and results from the project-specific traffic study. The level of health risk from exposure to construction- and operation-related TAC emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating construction

activity to offsite sensitive receptors, the number and types of diesel-powered construction equipment being used, and the duration of potential TAC exposure.

SIGNIFICANCE CRITERIA

CEQA Criteria

Per Appendix G of the State CEQA Guidelines and PCAPCD recommendations, the impact from the Project on local and regional air quality is considered significant if it would:

- generate construction-related emissions of criteria air pollutant or precursors that exceed PCAPCD-recommended significance criteria of 82 pounds per day (lb/day) for ROG, NO_X, or PM_{10};
- result in long-term operational emissions of criteria air pollutant or precursors that exceed PCAPCD-recommended significance criteria of 55 lb/day for ROG and NO_X, or 82 lb/day for PM_{10};
- long-term operational mobile-source CO emissions that would result in, or contribute to, an exceedance of the CAAQS or NAAQS for CO; and/or
- expose sensitive receptors to TAC concentrations that result in an incremental increase in cancer risk greater than 10 in one million and/or a noncarcinogenic hazard index of 1.0 or greater.

TRPA Criteria

Based on the TRPA Initial Environmental Checklist, impacts to air quality would be significant if the Project would:

- generate substantial air pollutant emissions;
- deteriorate ambient (existing) air quality;
- create objectionable odors;
- alter air movement, moisture or temperature, or change climate, either locally or regionally; or
- substantially increase use of diesel fuel.

ENVIRONMENTAL EFFECTS OF THE PROJECT

Impact 3.6-1: Short-Term Construction-Generated Emissions of ROG, NO_X, and PM_{10}

The proposed Project and Alternative A would result in short-term construction-related emissions of ROG, NO_X, and PM_{10}; however, levels of emissions would be lower than PCAPCD's significance criteria of emission for these pollutants. Thus, construction-generated emission of criteria pollutant and ozone precursors would be **less than significant** from the proposed Project and Alternative A.

Proposed Project

The proposed Project would involve the construction of a 10,154-square foot (sq. ft.) reconstructed lodge that reuses the historic Schilling Residence. This would involve earth-disturbance activities and the use of heavy-duty equipment. Construction-related activities would result in emissions of ROG, NO_X, and PM_{10} from site preparation (e.g., grading and clearing), off-road equipment, material delivery, worker commute exhaust emissions, vehicle travel, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions would be associated primarily with site preparation and would vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Other PM emissions would result from a combination of fuels and from tire and brake wear. Emissions of ozone precursors (i.e., ROG and NO_X) would be associated primarily with exhaust from construction equipment, haul truck trips, and worker trips. Off-gas emissions of ROG would also be emitted during any asphalt paving in the parking lot and the application of architectural coatings on the new buildings.

Maximum daily construction emissions for the project are summarized in Table 3.6-4. The table presents maximum daily emissions of ROG, NO_X, and PM_{10} for each construction year (i.e., 2020–2023). As mentioned above under "Methods and Assumptions," and in Section 2.5.3, "Construction Schedule and Activities," the Project was initially anticipated to be constructed over an up to 4 year period and was anticipated to begin in 2020, which is reflected in Table 3.6-4 below. In the event that construction activities are completed faster than presented here, beginning in 2021 instead of 2020 and completed in 2 years rather than 4 years, the air quality emissions shown in separate years in the table would be combined over fewer years. However, the emissions would still not exceed the PCAPCD significance criteria for each of the criteria pollutants. Refer to Appendix D for a detailed summary of the modeling assumptions, inputs, and outputs.

No construction activities are proposed for retaining the Highlands Community Center.

Table 3.6-4 Maximum Daily Emissions of Criteria Pollutants and Precursors Associated with Construction of the Proposed Project

Year	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
2020	2.2	18.4	6.3	3.6
2021	2.0	15.0	0.7	0.8
2022	1.8	13.8	1.1	0.7
2023	3.0	6.3	0.5	0.3
PCAPCD Significance Criteria	82	82	82	NA[1]

Notes: ROG = reactive organic gases, NO_X = oxides of nitrogen, PM_{10} = respirable particulate matter, lb/day = pounds per day, PCAPCD = Placer County Air Pollution Control District, NA = not applicable

[1] PCAPCD does not recommend a mass emission significance criterion for evaluating $PM_{2.5}$.

Source: Modeling conducted by Ascent Environmental in 2019 using CalEEMod v. 2016.3.2

Based on the modeling conducted, mass emissions of ROG, NO_X, and PM_{10} would be less than the applicable daily construction significance criteria recommended by PCAPCD. Notably, PCAPCD does not have an adopted mass emissions significance criterion for $PM_{2.5}$; however, because construction-generated PM_{10} emissions would be less than the applicable threshold of 82 lb/day, and because $PM_{2.5}$ is a subset of PM_{10}, it is not anticipated that construction activity would result in concentrations of $PM_{2.5}$ that would violate or substantially contribute to a violation of the ambient air quality standards for $PM_{2.5}$. The proposed Project would also be subject to PCAPCD Rule 228 Fugitive Dust, which would require the project to reduce fugitive PM emissions through preparation and implementation of a Dust Control Plan that contains dust control practices such as wetting of the construction site and limiting heavy-duty vehicle speeds. The proposed Project would also be required to implement applicable dust control measures identified in the TRPA Standard Conditions of Approval (TRPA 2019). Therefore, the proposed Project would not result in short-term, construction-related emissions that violate any air quality standard or contribute substantially to an existing or projected air quality violation. This impact would be **less than significant**.

Alternative A

The same types of construction activities would occur under Alternative A as described above for the proposed Project; however, under Alternative A, demolition of the Existing Lodge would occur before construction of the Schilling Lodge. Table 3.6-5 summarizes the projected emissions associated with construction of the project (2020–2023). As described above for the proposed Project, in the event that construction activities are completed faster than presented here, in 2 years rather than 4 years, the air quality emissions shown in separate years in the table could be combined over fewer years. However, the emissions would still not exceed the PCAPCD significance criteria for each of the criteria pollutants. See Appendix D for detailed input parameters and modeling results.

Table 3.6-5 Maximum Daily Emissions of Criteria Pollutants and Precursors Associated with Construction for Alternative A

Year	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
2020	2.2	21.0	6.3	3.6
2021	2.0	15.0	1.2	0.8
2022	1.8	13.8	1.0	0.7
2023	3.0	12.7	1.0	0.6
PCAPCD Significance Criteria	82	82	82	NA[1]

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; lb/day = pounds per day; PCAPCD = Placer County Air Pollution Control District, NA = not applicable

[1] PCAPCD does not recommend a mass emission significance criterion for evaluating $PM_{2.5}$.

Source: Modeling conducted by Ascent Environmental in 2019 using CalEEMod v. 2016.3.2

As shown in Table 3.6-5, construction emissions associated with Alternative A would not exceed PCAPCD significance criteria. For this reason and the reasons described above for the proposed Project, this impact would be **less than significant** for Alternative A.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.6-2: Long-Term Operational Emissions of Criteria Air Pollutants and Precursors

Implementation of the proposed Project and Alternative A would not result in long-term operational emissions of ROG, NO_X, and PM_{10} that exceed applicable significance criteria or substantially contribute to concentrations that would result in, or contribute to, an exceedance of the NAAQS or CAAQS. Therefore, long-term operational related emissions of criteria pollutants and precursors would be **less than significant**.

Proposed Project

Operation of the proposed Project would generate emissions of ROG, NO_X, and PM_{10} from vehicle trips to and from the proposed Project site, natural gas combustion associated with space and water heating, operation of landscaping and maintenance equipment, and period routine application of architectural coatings on the interior and exterior of the lodge. The analysis of air quality emissions also includes operation of the Existing Lodge with some community meetings and recreation classes. Maximum daily operational emissions for the project are summarized in Table 3.6-6.

Table 3.6-6 Maximum Daily Operational Emissions of Criteria Pollutants and Precursors for the Proposed Project

Source	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Area-Source Emissions	0.3	0	0	0
Natural-Gas Emissions	0	0	0	0
Mobile-Source Emissions	0.5	2.6	1.2	0.3
Total	**0.8**	**2.6**	**1.2**	**0.3**
PCAPCD Significance Criteria[1]	55	55	82	NA[1]

Notes: ROG = reactive organic gases; NO^X = oxides of nitrogen; PM_{10} = respirable particulate matter; lb/day = pounds per day; PCAPCD = Placer County Air Pollution Control District, NA = not applicable

[1] PCAPCD does not recommend a mass emission significance criterion for evaluating $PM_{2.5}$.

Source: Modeling conducted by Ascent Environmental in 2019 using CalEEMod v. 2016.3.2

As shown in Table 3.6-6, maximum daily operational emissions would be 0.8 lb/day of ROG, 2.6 lb/day of NO_X, and 1.2 lb/day of PM_{10}. As stated under Impact 3.6-1 above, PCAPCD does not have an adopted mass emissions significance criterion for $PM_{2.5}$; however, as PM_{10} emissions would be less than the applied significance criterion, $PM_{2.5}$ emissions would be expected to be minimal as well. These minor increases in emissions would not exceed the applicable significance criteria and would not contribute to the exceedance of the NAAQS or CAAQS. Consequently, the proposed Project would not result in long-term operational emissions that violate any air quality standard or contribute substantially to an existing or projected air quality violation. The proposed Project would also be subject to TRPA requirements for payment of an air quality mitigation fee consistent with Code Section 65.2. The air quality mitigation funds are used for air quality mitigation projects that offset the air quality of impacts throughout the Basin. Therefore, this impact would be **less than significant**.

Alternative A

Operational emissions associated with Alternative A would be incrementally less than those of the proposed Project because, with Alternative A, the Existing Lodge (i.e., Highlands Community Center) would be demolished and replaced with the Schilling Lodge, whereas the proposed Project would involve continued operation of the Highlands Community Center in addition to the Schilling Lodge. For example, the extent of electricity use and natural gas combustion associated with the Alternative A would be less than that of the proposed Project. Therefore, operational emissions associated with Alternative A also would not exceed the mass emissions criteria recommended by PCAPCD these emissions would not violate any CAAQS or NAAQS or contribute substantially to an existing or projected air quality violation. Similar to the proposed Project, Alternative A would also be subject to payment of the TRPA air quality mitigation fee. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.6-3: Localized Exposure to Mobile-Source Emissions of Carbon Monoxide

The increase in vehicle trips associated with operation of the proposed Project would not result in, or contribute to, concentrations of CO at sensitive receptors that exceed unhealthy levels. Due to the demolition of the Existing Lodge, additional trips under Alternative A would be even less than that of the proposed Project. This impact would be **less than significant**.

Proposed Project

Implementation of the proposed Project is not expected result in an increase in the general skier visitation to the Tahoe Cross-Country Center (Tahoe XC), but the analysis in this EIR assumes that general visitation could increase by 10 percent in winter (in addition to the additional events and gatherings held at the Schilling Lodge). Visitation to Tahoe XC in the summer assumes a small increase in visitation over existing conditions associated with events at the Schilling Lodge, a youth camp, employees, and bike rental customers. The analysis of air quality emissions also includes operation of the Existing Lodge with some community meetings and recreation classes.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. CO disperses rapidly with distance from the source under normal meteorological conditions; however, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may exceed the applicable CAAQS and NAAQS at nearby sensitive land uses, such as residential units and schools.

PCAPCD recommends the CO impacts of a project be evaluated based on the following screening criteria:

- A traffic study for the project indicates that the peak-hour level of service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity will be degraded from an acceptable LOS (e.g., A, B, C, or D) to an unacceptable LOS (e.g., LOS E or F); or

- A traffic study indicates that the project will substantially worsen an already existing unacceptable peak-hour LOS on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes situations where delay would increase by 10 seconds or more when project-generated traffic is included.

Based on the traffic analysis that was conducted in support of this EIR (see Section 3.5, "Transportation"), the proposed Project would generate a net increase of up to 159 daily trips on a peak summer day (see Table 3.5-4). Based on PCAPCD's significance criteria for emissions of CO, the project would generate substantial localized CO emissions if project-generated vehicle trips would degrade an intersection from an acceptable LOS to an unacceptable LOS. As summarized in Section 3.5, "Transportation," proposed Project-related vehicle trips would not degrade affected intersections near the proposed Project side from an acceptable LOS to an unacceptable LOS (see Tables 3.5-6 and 3.5-7). Consequently, vehicle activity associated with the proposed Project would not result in, or contribute to, an exceedance of the CAAQS or NAAQS for CO. This impact would be **less than significant**.

Alternative A

With implementation of Alternative A, the Existing Lodge would be demolished and replaced with the Schilling Lodge. Thus, additional daily trips under Alternative A (a net increase of 143 in daily trips; see Table 3.5-5) would be less than the proposed Project, where both the Schilling Lodge and the existing Highlands Community Center would operate. As discussed above for the proposed Project, Alternative A would not produce additional trips that would cause an intersection to be degraded from an acceptable LOS to an unacceptable LOS and have the potential to result in, or contribute to, an exceedance of the CAAQS or NAAQS for CO. As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.6-4: Expose Sensitive Receptors to Toxic Air Contaminants

Implementation of either the proposed Project or Alternative A would not introduce any new long-term operational sources of TACs. Construction-related emissions of TACs associated with the proposed Project or Alternative A would not result in an incremental increase in cancer risk greater than 10 in one million or a hazard index of 1.0 or greater at existing or future planned sensitive receptors. Therefore, this impact would be **less than significant**.

Proposed Project

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of heavy-duty off-road diesel equipment used for reconstruction of the Schilling Residence, construction of new parking and driveway areas, and applying architectural coatings. On-road, diesel-powered haul trucks traveling to and from the project site during construction to deliver materials and equipment are less of a concern because they do not operate at a single location for extended periods and therefore would not expose a single receptor to excessive diesel PM emissions. This analysis focuses primarily on heavy duty construction equipment used onsite that may affect nearby offsite land uses.

No construction activities are proposed for retaining the Highlands Community Center.

Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) were identified as a TAC by CARB in 1998. The potential cancer risk from inhaling diesel PM outweighs the potential for all other diesel PM-related health impacts (i.e., noncancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003:K-1). Chronic and acute exposure to noncarcinogens is expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level. As shown in Table 3.6-4 above, maximum daily exhaust emissions of PM_{10}, which is considered a surrogate for diesel PM, could reach up to 6.3 lb/day during construction.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC levels that exceed applicable standards). Dose is a function of the concentration of a substance in the environment and the duration of exposure to the substance. It is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for

an exposed individual are higher if the exposure occurs over a longer period. According to the Office of Environmental Health Hazard Assessment (OEHHA), HRAs, which determine the exposure of sensitive receptors to TACs, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2015:5-23, 5-24). For this reason, it is important to consider that the use of heavy duty off-road diesel equipment would be limited to a four-year construction period and would only occur between May 1 through October 15 consistent with TRPA guidance.

In addition, studies show that diesel PM is highly dispersive and that concentrations of diesel PM decline with distance from the source (e.g., 500 feet from a freeway, the concentration of diesel PM decreases by 70 percent) (Roorda-Knape et al. 1999; Zhu et al. 2002, cited in CARB 2005:9).

The nearest offsite sensitive receptors include the 398 students attending North Tahoe High School, the 446 students attending North Tahoe Middle School (adjacent to the proposed Project site) and residences along Polaris Road. The North Tahoe High School and North Tahoe Middle School are located approximately 300 feet from the nearest point of construction. While the 70 percent reduction in diesel PM identified previously would not be fully realized, it would be expected that this distance would allow for some reductions to occur.

Also, research of diesel PM generated by roadway traffic (i.e., on-road vehicles) indicates that vegetation, particularly fine-needle tree species, remove particulate from the air (Tong et al. 2016; Breathe California of Sacramento-Emigrant Trails Health Effects Task Force 2008), further reducing potential exposure of sensitive receptors to diesel PM. Thus, additional reduction in diesel PM concentrations would be provided by the conifer trees located between the project site and nearby sensitive receptors. Although some trees would be removed as part of the proposed Project (see Table 2-2 in Chapter 2, "Description of Proposed Project and Alternative Evaluated in Detail," and Impact 3.3-2 in Section 3.3, "Biological Resources"), they would be limited to the footprint of the proposed improvements and trees that provide screening between the proposed lodge and nearby sensitive receptors would be retained as shown in Figure 2-8.

Therefore, considering the highly dispersive properties of diesel PM, the relatively low mass of diesel PM emissions that would be generated during project construction, the relatively short period during which diesel PM-emitting construction activity would take place in the same location near the same receptors, and the presence of fine-needle conifer trees between the proposed Project site and the nearest offsite sensitive receptors, construction-related TACs would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index of 1.0 or greater. Furthermore, the proposed Project would be subject to TRPA Code Section 65.8.1, which limits idling for diesel engines exceeding 10,000 pounds gross vehicle weight or off-road self-propelled equipment exceeding 25 horsepower to no longer than 5 minutes in California. Compliance with this guidance would further reduce construction-related emissions of TACs. This impact would be **less than significant**.

Alternative A

Generation of TACs would occur from the same sources as those identified for the proposed Project (e.g., construction equipment, vehicle trips). Construction emissions would be incrementally greater under Alternative A (as shown in Table 3.6-5) than the proposed Project due to the demolition of the Existing Lodge under this alternative. However, as demonstrated in Table 3.6-5, PM_{10} emissions would not be generated above 6.3 lb/day (similar to the proposed Project) and would be well below PCAPCD's mass emissions threshold. As a result, diesel PM emissions, which is a surrogate of PM, could not be produced above this number. Construction would similarly occur over four years and would not occur over a timescale to warrant conducting an HRA (i.e., 30- to 70-year timescale) as recommended by OEHHA. Moreover, Alternative A's proximity to nearby sensitive receptors is greater than the proposed Project allowing for greater dispersal of diesel PM from sources of construction emissions.

As a result, Alternative A construction-related TACs would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index of 1.0 or greater. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

CUMULATIVE IMPACTS

The LTAB is currently designated as nonattainment for the 1-hour and 8-hour CAAQS for ozone and PM10; unclassified for the CAAQS for hydrogen sulfide and visibility reducing PM; and listed as unclassified for the NAAQS for ozone, CO, NO_x, PM_{10}, $PM_{2.5}$, and lead. Construction- and operation-related emissions of criteria air pollutants and precursors from other projects in the LTAB could violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. Additionally, because the LTAB is currently designated as nonattainment with respect to the CAAQS for ozone, construction- and operation-generated emissions of ROG and NO_x, which are ozone precursors, could contribute on a cumulative basis to pollutant concentrations that exceed the CAAQS and NAAQS because of growth in the area. Construction- and operation-related emissions of ROG and NO_x from proposed Project and Alternative A implementation were determined to be less than significant because project emissions would not exceed the applicable mass emissions significance criteria recommended by PCAPCD. According to PCAPCD, a project would have a cumulative contribution to an air quality violation if:

- operational phase cumulative-levels of ROG and NO_X exceed 55 lb/day, and/or
- operational phase cumulative-levels of PM_{10} exceed 82 lb/day.

These significance criteria are numerically identical to the operational significance criteria used to evaluate project-level emissions above. As discussed previously, the proposed Project's and Alternative A's operational emissions would not exceed these significance criteria. Based on PCAPCD's guidance, a project that would exceed the aforementioned significance criteria would have a cumulatively considerable impact on regional air quality. The proposed Project and Alternative A would not produce emissions substantial enough to exceed these significance criteria. As such, construction- and operation-related emissions of ROG and NO_X, and other criteria air pollutants, would not have a considerable contribution to a significant cumulative-related impact with respect to ozone, PM_{10}, and $PM_{2.5}$. Moreover, as discussed under Impacts 3.6-3 and 3.6-4, CO and TACs are pollutants of local concern and such impacts were found to be less than significant. The applicant would also be required to pay the air quality mitigation fee required by TRPA Code Section 65.2 as part of the TRPA permit application for the project, which would offset the Project's contribution to cumulative air quality impacts. Thus, the proposed Project and Alternative A contribution of air pollutants (i.e., criteria air pollutants and precursors) would **not be cumulatively considerable**.

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