

11 AIR QUALITY

11.1 INTRODUCTION

This chapter includes a discussion of existing air quality conditions, a summary of applicable air quality regulations, and an analysis of potential short-term and long-term air quality impacts that could result from implementation of the Placer County Tahoe Basin Area Plan and the Tahoe City Lodge project. Combined, the Plan area and lodge are referred to as the proposed project. The primary issues raised during scoping that pertain to air quality included:

- ▲ concerns regarding the current nonattainment status of the Lake Tahoe Air Basin (LTAB) for particulate matter;
- ▲ specific construction and operational emissions generated by the lodge;
- ▲ concerns related to off-road sources of air pollution, such as over-snow vehicles, all-terrain vehicles, and landscaping equipment;
- ▲ localized carbon monoxide (CO) concentrations at congested intersections; and
- ▲ cumulative air quality conditions taking into account in-basin and out-of-basin projects.

The methods of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions used in this chapter are consistent with the recommendations of the Placer County Air Pollution Control District (PCAPCD), the California Air Resources Board (ARB), and the U.S. Environmental Protection Agency (EPA).

Mitigation measures are recommended to reduce potentially significant adverse impacts on air quality. Greenhouse gas emissions and climate change are evaluated in Chapter 12.

As discussed in Chapter 4, “Approach to Environmental Analysis,” this analysis is provided to fully document the environmental effects of the four Area Plan and lodge alternatives. The broad geography and long timeframe to which the Area Plan applies and the policy-oriented nature of its guidance is such that the EIR/EIS is prepared at a programmatic level, i.e., a more general analysis of each resource area with a level of detail and degree of specificity commensurate with the overall planning level of the Area Plan. Similarly, because the Kings Beach Center design concept lacks sufficient detail for definitive impact analysis, that portion of the project is also evaluated in a programmatic fashion. The proposed Tahoe City Lodge represents a project that contains a greater level of detail and specificity such that a project-level analysis is included in this chapter.

11.2 REGULATORY SETTING

11.2.1 Federal

EPA has been charged with implementing national air quality programs. EPA air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 11-1, EPA has established NAAQS for the following criteria air pollutants (CAPs): ozone, carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The 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 would achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. 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.

Air Toxics

EPA regulates air toxics, which are referred to as hazardous air pollutants (HAPs) in federal parlance. HAPs through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for HAPs to limit emissions.

EPA has programs for identifying and regulating HAPs. Title III of the CAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The national emissions standards for HAPs may differ for major sources and for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources. The emissions standards are to be promulgated in two ways. First, EPA has technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum available control technology for toxics. For area sources, the standards may be different, based on generally available control technology. Second, EPA also has health risk-based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

The CAA also required EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, the CAA required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

11.2.2 Tahoe Regional Planning Agency

Environmental Threshold Carrying Capacities

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 particulate matter, maintaining levels of NO_x, reducing traffic volumes on US 50, and reducing vehicle miles traveled. These thresholds and associated management standards are described in more detail in Appendix AQ-A. 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) for which the standards are applicable. The TRPA threshold related to vehicle miles traveled and traffic volume are addressed further in Section 4.15, "Traffic and Transportation."

Lake Tahoe Regional Plan

Goals and Policies

The Goals and Policies are designed to achieve and maintain adopted environmental thresholds and are implemented through the Code, the Environmental Improvement Program, and the Transportation Improvement Plan (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 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 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 Chapter 65, “Air Quality and Transportation” of the TRPA Code of Ordinances 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 TRPA-approved dust control measures are implemented.

Chapter 65.1—Air Quality Control

The provisions of Chapter 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 proposed 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 Lake Tahoe Region.
- ▲ Section 65.1.4, Combustion Appliances.
- ▲ 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).

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 prior to 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 prior to 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 RPU EIS mitigation measures adopted by the TRPA Governing Board. This policy addresses potentially significant construction-generated emissions of GHGs associated with development under the RPU, including development within the Area Plan area. The following items constitute TRPA's development of its Best Construction Practices Policy for Construction Emissions:

- ▲ TRPA Code Section 65.8.1 was revised to, among other things, limit idling for certain diesel engines 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") and residential projects (Attachment R, "Standard Conditions of Approval for Residential Projects") were 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 residential and 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.
- ▲ Implementation of a Woodstove Rebate Program for existing residence to help offset emissions generated from construction by reducing PM₁₀, reactive organic gases (ROG), and NO_x emissions from existing non-compliant woodstoves.

These changes were approved at the November 20, 2013 meeting of the TRPA Governing Board and became effective at that time.

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 particulate monitoring at the Stateline Monitoring Site. Working under a cooperative agreement with the TRPA, PCAPCD installed additional ozone and PM₁₀ 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.

Mobility 2035: Lake Tahoe Regional Transportation Plan

In 2012, the Tahoe Metropolitan Planning Organization (TMPO) prepared the *Mobility 2035: Lake Tahoe Regional Transportation Plan* (RTP), 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. 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 RTP also supported an update of the Transportation Element of the Regional Plan.

Placer County Tahoe Basin Area Plan Policies and Programs

The following policies from the Placer County Tahoe Basin Area Plan apply to air quality.

- ▲ **Policy AQ-P-1** Continue to participate in the Lake Tahoe Environmental Improvement Program (EIP) and coordinate with other agencies to identify and secure funding for air quality improvement projects.
- ▲ **Policy AQ-P-2** Continue to implement federal, state and local air quality protection programs through the Placer County Air Pollution Control District.
- ▲ **Policy AQ-P-3** Include qualifying air quality improvement projects in TMDL Pollutant Load Reduction Plans (PLRPs).
- ▲ **Policy AQ-P-4** Prioritize projects and services that reduce vehicle miles travelled (VMT) and support alternative modes of transportation.
- ▲ **Policy AQ-P-5** Accelerate air quality improvement by implementing Regional Plan incentives for redevelopment within town centers and the transfer of development from outlying areas to town centers.
- ▲ **Policy AQ-P-6** Continue to implement the mPOWER incentive program to reduce greenhouse gas 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.

11.2.3 State

ARB 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). California law authorizes ARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare (i.e., the CAAQS shown in Table 11-1).

Criteria Air Pollutants

ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned CAPs. 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 achieve 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, and provides districts with the authority to regulate indirect sources.

Among ARB's other responsibilities are overseeing local air district compliance with federal and State laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

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). (In federal parlance, TACs are referred to as HAPs.) AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, including diesel particulate matter (diesel PM), and adopted EPA's list of HAPs as TACs.

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars (ACC) program which combines the control of GHG emissions and CAPs, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the emissions standard for 2017 models and beyond. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (ARB 2011a).

11.2.4 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, CAAA, and CCAA.

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

- ▲ PCAPCD Rule 218—Application of Architectural Coatings. This rule limits the quantity of volatile organic compounds (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 best management practices to be applied during construction and operation activities. See Appendix H-2 for a detailed list of these guidelines.
- ▲ PCAPCD Rule 501—General Permit Requirements. Any person operating an article, machine, equipment, or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from the Air Pollution Control Officer. Stationary sources subject to the requirements of Rule 507, Federal Operating Permit Program, must also obtain a Title V permit pursuant to the requirements and procedures of that rule.

Toxic Air Contaminants

At the local level, PCAPCD may adopt and enforce ARB's airborne toxic control measures. Under PCAPCD Rule 501 ("Permit Requirements"), PCAPCD Rule 502 ("New Source Review"), 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., health risk assessment) 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.

11.3 ENVIRONMENTAL SETTING

The proposed project is located within the LTAB within Placer County, California. The ambient concentrations of air pollutant emissions are determined by the amount of CAPs 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.

11.3.1 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.

EXISTING AIR QUALITY

Criteria Air Pollutants

Concentrations of emissions from CAPs are used to indicate ambient air quality. A brief description of key CAPs in the LTAB is provided below.

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 in large amounts, but is formed through complex chemical reactions between precursor emissions of ROG and NO_x in the presence of sunlight. ROG are volatile organic compounds (VOCs) that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents used primarily in coating and adhesive processes, as well as evaporation of 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 two decades because of more stringent motor vehicle standards and cleaner burning fuels (ARB 2014a: 3-4 and 4-46).

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that is most present in urban environments. The major human-made sources of NO₂ 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 NO₂. The combined emissions of NO and NO₂ are referred to as NO_x and are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (ozone), the NO₂ concentration in a particular geographical area may not be representative of the local sources of NO_x emissions.

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM₁₀. PM₁₀ 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 particulate matter formed in the atmosphere by reaction of gaseous precursors (ARB 2014a:1-13 and 3-6). PM_{2.5} includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM₁₀ emissions are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM₁₀ have increased slightly over the last 20 years, and are projected to continue to increase slightly through 2035 (ARB 2014a:3-7). Ambient PM_{2.5} emissions have remained relatively steady over the last 20 years and are projected to decrease slightly through 2035 (ARB 2014a:3-6). Particulate emissions can also negatively affect visibility in the LTAB. (EPA 2016)

Attainment Area Designations

PCAPCD and ARB 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 ARB's website.

Both ARB and EPA use ambient air quality monitoring data to designate the attainment status of an area relative to the CAAQS and NAAQS for each CAP. 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 for the year 2012 through 2014 in the Basin are shown in Table 11-1 for each CAP.

Table 11-1 Ambient Air Quality Standards and Designations for the Lake Tahoe Air Basin

Pollutant	Averaging Time	California		National ¹	
		Standards ^{2,3}	Attainment Status ⁴	Primary ³	Attainment Status ⁵
Ozone	1-hour	0.09 ppm (180 µg/m ³)	Nonattainment (Transitional)	-	-
	8-hour	0.070 ppm (137 µg/m ³)		0.070 ppm (147 µg/m ³)	Attainment
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Attainment (Maintenance)
	8-hour (Lake Tahoe)	6 ppm (7 mg/m ³)		9 ppm (10 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1-hour	0.18 ppm (339 µg/m ³)		0.100 ppm	
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	-	-
	24-hour	50 µg/m ³		150 µg/m ³	Attainment
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	Attainment	12.0 µg/m ³	Attainment
	24-hour	-	-	35 µg/m ³	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.07 per kilometer – visibility of 30 mi or more	Unclassified	Attainment	

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million, “-” = not applicable

¹ National standards (other than ozone, PM, 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 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

² California standards for ozone, CO (except in the Lake Tahoe Air Basin), SO₂ (1- and 24-hour), NO₂, PM, 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 (CAAQS) are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

³ Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m³)]. Equivalent units given in parentheses are based upon a reference temperature of 25 °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. Secondary national standards are also available from EPA.

⁴ Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A): a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area. Non-attainment designations for ozone are classified as marginal, serious, severe, or extreme depending on the magnitude of the highest 8-Hour ozone design value at a monitoring site in a non-attainment area.

Nonattainment/Transitional (NT): is a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for that pollutant.

⁵ Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment (A): any area that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassifiable (U): any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

Maintenance (M): any area previously designated nonattainment pursuant to the CAAA of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAA, as amended.

Source: ARB 2013a, ARB 2015a, EPA 2016b; data compiled by Ascent Environmental in 2016.

Emissions Inventory

ARB provides estimates for the County’s 2012 inventory—the most recent available inventory. According to this inventory, mobile sources account for 49 and 80 percent of the ROG and NO_x emissions in Placer County, respectively. Mobile sources also account for about 10 to 15 percent of particulate matter (PM) emissions. Area-wide sources account for 65 and 82 percent of the County’s PM_{2.5} and PM₁₀ emissions, respectively. Other sources include stationary sources, such as stationary fuel combustion and industrial processes, which account for 25 percent of the County’s ROG emissions and 16 percent of the County’s NO_x emissions. (ARB 2013b).

Toxic Air Contaminants

Concentrations of TACs, or HAPs in federal parlance, are also used to indicate air quality. A TAC is defined as 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. Unlike CAPs, TACs are pollutants of local concern because they can present harmful effects when they are emitted in close proximity to sensitive receptors.

Existing sources of TACs in the project vicinity include diesel-fueled vehicles traveling on major roadways such as State Route 28 (SR 28) and State Route 89 (SR 89). Other sources of TACs include seasonal operation of diesel-powered snow management equipment, such as plows and snow makers, during winter seasons.

The majority of health risks from TACs is attributed to relatively few compounds, the most prominent being diesel PM (ARB 2005:9). 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. Naturally occurring asbestos (NOA) is also recognized by ARB as a TAC.

Diesel Particulate Matter

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, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate area concentrations of diesel PM.

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. NOA, which was identified as a TAC by ARB in 1986, is located in many parts of California and is commonly associated with serpentine soils and rocks. According to two reports by the California Department of Conservation and Division of Mines and Geology, NOA is not likely to occur within the project vicinity (Van Gosen and Clinkenbeard 2011:59; Churchill and Hill 2000).

SENSITIVE RECEPTORS

Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants. Sensitive land uses are land uses that accommodate sensitive receptors, and exposure to pollutants could result in health-related risks to individuals. Existing sensitive land uses that accommodate sensitive receptors throughout the Tahoe Region include residences, schools, hospitals, daycare centers, parks, and playgrounds. Sensitive receptors near the lodge include the single-family homes around the Tahoe City Golf Course and along Fairway Drive, and nearby tourist accommodation units (TAUs) such as the Tahoe Marina Lodge.

11.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

11.4.1 Methods and Assumptions

The methods and assumptions used to analyze the proposed project are discussed separately for the Area Plan and lodge. The methods and assumptions for the Area Plan are based on a program-level analysis, while the methods and assumptions for the lodge are based on a project-level analysis.

PLACER COUNTY TAHOE BASIN AREA PLAN/KINGS BEACH CENTER DESIGN CONCEPT

Construction

At the time of writing this EIR/EIS, the specific type, number, location, timing, or other details about the construction of future projects that would be proposed over the planning horizon of the Area Plan are not known. Therefore, construction-generated emissions of CAPs and precursors were assessed qualitatively. This analysis assumes that construction-generated emissions from individual developments in the Area Plan would be assessed at the project level during environmental review. Construction-generated emissions of TACs were also evaluated qualitatively. Similarly, it would be speculative to specify the timing and construction details of individual projects that develop from the Kings Beach Center Design Concept.

Operation

The Area Plan area is located within the Region, for which regional operational emissions of CAPs and precursors were analyzed in the RPU EIS. The program-level analysis for the Area Plan tiers from the analysis in the RPU EIS to the extent practicable. The RPU EIS concluded that the anticipated land use development under the RPU would result in less-than-significant impacts to air quality during operations—mostly attributed to a forecasted decrease in vehicle emissions due to more stringent vehicle emission standards in the future.

The program-level analysis of long-term operational CAP emissions generated by the Area Plan alternatives focuses on the degree to which the implementation of the Area Plan would alter the conclusion of the RPU EIS. The Area Plan analysis compares the air quality impacts associated with the net change in land uses between what was forecasted for the Area Plan area under the Regional Plan and the proposed changes under the Area Plan. In addition, the Area Plan analysis uses updated emission factors from ARB's latest mobile-source emission factor model (EMFAC2014) model and the most recent version of South Coast Air Quality Management District's (SCAQMD) California Emissions Estimator Model (CalEEMod) Version 2013.2.2 (ARB 2015a, SCAMQD 2013a). The RPU used older emissions factors from EMFAC2011 and CalEEMod Version 2011.1. EMFAC2014 accounts for newer regulations, such as Advanced Clean Cars and new truck and bus rules, resulting in generally lower emission factors than EMFAC2011 on a per-vehicle-mile basis (varying by location within the state) (ARB 2014b). CalEEMod Version 2013.2.2 made several corrections and updates to the previous 2011.1 version including some energy use rates and architectural coating assumptions (SCAQMD 2013b). CalEEMod defaults were also adjusted to account for California's newest 2016 Building Energy Efficiency Standards which apply to new construction starting in 2017 and VOC limits for architectural coatings under PCAPCD Rule 218. For a detailed description of model input and output parameters and assumptions, refer to Appendix H-3.

While the RPU EIS analyzed the net change from 2010 to 2035, the Area Plan analysis looks at the net change in emissions from existing 2015 conditions to the 2035 build out year. However, relatively little development occurred in the Plan area between 2010 and 2015. Therefore, the analysis conservatively assumes that 2015 conditions are equal to 2010 conditions and denotes the net change in emissions as between 2015 and 2035. This allows for consistent comparison between the Area Plan and RPU EIS analyses.

With respect to program-level air quality impacts other than operational CAP emissions, local carbon monoxide exposure impacts were evaluated in accordance with the Transportation Project-Level Carbon Monoxide Protocol (Garza et al. 1997). Second, operational emissions of TACs were evaluated qualitatively based on the level of diesel PM and PM_{2.5} emissions associated with plan implementation, and the proximity to off-site sensitive receptors. Third, odor impacts were assessed qualitatively. Finally, atmospheric nitrogen deposition was assessed quantitatively using mobile-source operational NO_x emissions estimates calculated with EMFAC2014.

Kings Beach Center Design Concept

The Kings Beach Center design concept was modeled using the same approach as discussed above for the lodge analysis. Option A was quantified because this option is more intensive (e.g., represents greater emissions) than Option B, based on total building area and anticipated daily trips (see Table 3-4 and Chapter 3, “Description of Proposed Project and Alternatives”). For purposes of analysis, it is assumed that the Kings Beach Center design concept would be constructed between 2017 and 2019 and begin operations in 2020. The analysis also compares future operation of the Kings Beach Center design concept in 2020 to existing conditions in 2015. Currently, approximately 30,000 square feet of retail space operates on the site. The resulting net emissions are compared to PCAPCD criteria to determine significance. See Appendix H-5 for detailed assumptions related to construction and operational emissions due to implementation of the Kings Beach Center design concept.

TAHOE CITY LODGE

Construction

Short-term construction-related emissions of CAPs and precursors related to the lodge were calculated using CalEEMod Version 2013.2.2 (SCAQMD 2013a), as recommended by PCAPCD and other air districts in California. Modeling was based on project-specific information (e.g., size, amounts of demolition, 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, climate, and land use types. For a detailed description of model input and output parameters and assumptions, refer to Appendix H-3.

Operation

Emissions of CAPs and precursors related to operation of the lodge were estimated at the project-level using EMFAC2014 and CalEEMod Version 2013.2.2. Mobile-source emissions were estimated using EMFAC2014 emission factors and an estimate of project-generated VMT presented in Chapter 10, “Transportation and Circulation.” Emissions from natural gas and area-sources for both summer and winter were estimated using the applicable modules in CalEEMod. This calculation assumed no open hearth wood-burning fireplaces would be included in future development as prohibited by current TRPA Code. Emissions from consumer products and landscape maintenance activities were also estimated using CalEEMod (SCAQMD 2013a). CalEEMod defaults were also adjusted to account for California’s newest 2016 Building Energy Efficiency Standards which apply to new construction starting in 2017 and VOC limits for architectural coatings under PCAPCD Rule 218. Operation of the Tahoe City Lodge is expected to begin in 2018. For a detailed description of model input and output parameters and assumptions, refer to Appendix H-3.

With respect to project-level air quality impacts other than operational CAP emissions, the potential for the traffic generated by the lodge to result in concentrations of CO that exceed the NAAQS and CAAQS for this pollutant was evaluated using PCAPCD-recommended screening criteria. Because PCAPCD has not developed conservative screening methods for CO, the potential for CO hot-spots was further evaluated using a quantitative screening method recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD), as described in Impact 11-3, below. Second, risk from project-generated, construction- and operation-related emissions of TACs were assessed qualitatively. This assessment is based on the location from which construction- or operation-related TAC emissions would be generated by the lodge relative to off-site sensitive receptors. Third, the assessment of odor-related impacts is based on the types of odor sources associated with the lodge and its proximity to off-site receptors. Finally,

atmospheric nitrogen deposition was assessed quantitatively using mobile-source operational NO_x emissions estimates calculated with EMFAC2014.

11.4.2 Significance Criteria

Significance criteria for determining impacts to air quality are summarized below.

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.

CEQA CRITERIA

In accordance with Appendix G of the State CEQA Guidelines and the Placer County CEQA Checklist, impacts relative to air quality would be significant if the project would:

- ▲ conflict with or obstruct implementation of the applicable air quality plan;
- ▲ violate any air quality standard or contribute substantially to an existing or projected air quality violation (Table 11-1);
- ▲ result in a cumulatively considerable net increase of any CAP for which the project region is in nonattainment under any applicable National or State ambient air quality standards (including releasing emissions that exceed quantitative standards for ozone precursors);
- ▲ expose sensitive receptors to substantial pollutant concentrations (including TACs/HAPs); or

As stated in Appendix G, the significance criteria established by the applicable AQMD or APCD may be relied on to make the above determinations. Thus, as identified by PCAPCD, an air quality impact also is considered significant if implementation of the project would result in:

- ▲ a net increase in short-term construction-related or long-term operation-related (regional) emissions of ROG, NO_x, or PM₁₀ that exceed mass emissions of 82 pounds per day (lb/day) in Placer County (PCAPCD 2012:23);
- ▲ exposure of sensitive receptors to TAC emissions that would exceed 10 in 1 million for the carcinogenic risk (i.e., the risk of contracting cancer) or a non-carcinogenic Hazard Index of 1 for the maximally exposed individual (PCAPCD 2012:70); and/or
- ▲ a net increase in short-term construction-related or long-term operation-related (regional) emissions of CO that would result in CO concentrations that exceed the 1-hour CAAQS of 20 ppm or the 8-hour CAAQS for the LTAB of 6 ppm.

In addition, according to PCAPCD, a project would result in a considerable contribution to a cumulative impact to air quality if it would result in:

- ▲ a net increase in long-term operation-related (regional) emissions of ROG or NO_x that exceed 10 lb/day (PCAPCD 2012:24).
- ▲ While PCAPCD cautions against the use of this cumulative criterion as a determination of significance (e.g., determination of need for an EIR), PCAPCD established it based on the requirement of Rule 502 (“New Source Review”) that any stationary source that emits more than 10 lb/day of ROG and NO_x must employ best available control technology (PCAPCD 2012:2-3 and 2-4). Therefore, PCAPCD considers a criteria of 10 lb/day to represent the allowable incremental contribution of a land use development project while still progressing toward overall attainment within Placer County.

11.4.3 Environmental Effects of the Project Alternatives

Impact 11-1: Consistency with Air Quality Plan and transportation conformity requirements

None of the proposed project alternatives would conflict with or obstruct implementation of any applicable air quality-related plans. All of the alternatives would meet federal air quality conformity requirements. Thus, the proposed project would not result in more severe impacts than already analyzed in the RPU EIS and this impact would be **less than significant** for all Area Plan and Tahoe City Lodge alternatives.

For the California portion of the LTAB, the applicable federal air quality maintenance plan for Lake Tahoe is California’s SIP for Carbon Monoxide (CO Maintenance Plan) originally adopted in 1996 and revised on 2004 (ARB 2004). Part of the maintenance strategy involves allocation of transportation emissions budgets to the maintenance areas. The TMPO established emission budgets for 2008 and 2018 based on the transportation conformity requirement to have two ten-year maintenance plans indicating that the area has met the NAAQS for a criteria pollutant. The 2018 motor vehicle emissions budget for the Lake Tahoe Eastern Placer County (North Shore) maintenance areas is 11 tons of CO per day (TMPO 2011:2). With the TMPO approaching the end of its maintenance period and according to EPA guidance, conformity requirements no longer apply to Area Plan actions taken after 2018 (EPA 2014:4). However, any transportation control measures in the maintenance plan would continue past the end of the maintenance period.

Through 2018, the proposed Area Plan must conform to the transportation emissions budget, or the region would face penalties for impairing the region’s ability to maintain the NAAQS for CO. If the project conforms to the emissions budget allocated to the region, then the project would be consistent with the CO maintenance strategy to maintain the NAAQS for CO. Regarding other CAPs, the LTAB is in attainment or designated unclassified for all NAAQS and is designated nonattainment for the ozone and PM₁₀ CAAQS.

As analyzed in Impact 3.4-1 of the RPU EIS, daily vehicle travel in the Placer County portion of the Tahoe Basin under the current Regional Plan is not anticipated to exceed TMPO emission budgets (see Table 3.4-10 of the RPU EIS). Any changes to the Area Plan that would increase daily vehicle travel would also increase daily emissions. However, as shown in Table 11-2, all the Area Plan alternatives would decrease daily VMT relative to RPU EIS estimates for 2035 Area Plan. Based on the County-level VMT analyses of the RPU EIS and RTP/SCS EIR/EIS, Placer County is assumed to account for 23 percent of the Basin-wide VMT for existing and future years through 2035.

Peak daily VMT in the Tahoe Basin was provided by LSC Transportation Consultants, Inc. (LSC) based on land use forecasts for the Area Plan alternatives and TRPA’s TransCAD region-wide transportation model (Appendix G). LSC estimated VMT for a busy summer day in 2035 based on mode shift policies planned under the TMPO RTP/SCS, incorporating external VMT that was not fully reflected in traffic modeling, and VMT generated by the Tahoe City Lodge site for each alternative. The estimated peak daily VMT was assumed to apply to winter conditions as well. Thus, the conformity impacts associated with the proposed project relative to the RPU EIS analyses are presented for each alternative separately below.

Table 11-2 Mobile-Source Carbon Monoxide Emissions in Eastern Placer County (North Shore) CO Maintenance Area by Alternative in 2018

	Regional Plan Update EIS	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Maximum Daily VMT in the Lake Tahoe Region	1,988,633 ^a	1,947,210 ^b	1,948,147 ^b	1,947,951 ^b	1,948,661 ^b
Maximum Daily VMT in the Plan area ^c	447,963	438,632	438,843	438,799	438,959
Maximum Daily CO Emissions in the Plan area (TPD)	1.82 ^d	1.02 ^e	1.03 ^e	1.03 ^e	1.03 ^e
CO Emissions Budget for Lake Tahoe North Shore area (TPD)	11				
Budget Met?	Yes	Yes	Yes	Yes	Yes

Notes: Area Plan area = Placer County Tahoe Basin Area; CO = carbon monoxide; EMFAC = Mobile-Source Emissions Factor Model; TPD = tons per day; RPU = Regional Plan Update; RTP = Regional Transportation Plan; EIS = Environmental Impact Study; Area Plan area = Placer County Tahoe Basin Area; VMT = vehicle miles travelled

^a Daily VMT estimates were based on 2035 region-wide VMT reported in Table 3.3-16 of the Lake Tahoe RTP/SCS EIR/EIS.

^b Data available from Table D in memorandum from LSC Transportation Consultants (Shaw 2016)

^c Calculated assuming Placer County accounts for 23 percent of total regional VMT. This is based on county and regional VMT in Appendix F of the RPU EIS and Table 3.3-16 of the Lake Tahoe RTP/SCS EIR/EIS, respectively.

^d The RPU EIS calculated mobile emissions using emission factors from EMFAC2011.

^e The Area Plan analysis calculates mobile emissions using emission factors from EMFAC2014, which estimates generally lower emissions than EMFAC2011 on a per-mile basis due to more stringent vehicle standards and revised forecasting.

Source: Shaw 2016, TRPA 2012, TMPO and TRPA 2012, data compiled by Ascent Environmental in 2016.

Daily CO emissions associated with VMT were modeled using 2018 winter emission factors from EMFAC2014 and compared with the applicable emissions budget. EMFAC2014 is the current model accepted by EPA for purposes of conformity analysis (EPA 2015). Winter-time emission factors are used because mobile-source CO emissions are generally higher in colder temperatures. Thus, as shown in Table 11-2, maximum daily CO emissions estimated for Alternatives 1 through 4 would conform to 2018 emissions budget for the North Shore area. Note that although LSC provided peak daily VMT for the summer season, it is conservatively assumed that the same peak VMT would occur in the winter season for the purposes of this analysis.

Emissions estimates for 2035 are also presented in Table 11-3 and show that CO emissions would continue to decrease under applicable Area Plan, state, and federal policies.

Table 11-3 Mobile-Source Carbon Monoxide Emissions in Eastern Placer County (North Shore) CO Maintenance Area by Alternative in 2035

	Regional Plan Update EIS	Alt 1	Alt 2	Alt 3	Alt 4
Maximum Daily VMT in the Lake Tahoe Region	2,131,000 ^a	1,973,780 ^b	1,980,026 ^b	1,978,719 ^b	1,983,452 ^b
Maximum Daily VMT in the Plan Area ^c	481,739	446,197	447,609	447,314	448,384
Maximum Daily CO Emissions in the Plan area (TPD)	NA	0.28 ^d	0.28 ^d	0.28 ^d	0.28 ^d
CO Emissions Budget for Lake Tahoe North Shore area (TPD)	11				
Budget Met?	NA	Yes	Yes	Yes	Yes

Notes: Area Plan area = Placer County Tahoe Basin Area; CO = carbon monoxide; EMFAC = Mobile-Source Emissions Factor Model; TPD = tons per day; RPU = Regional Plan Update; RTP = Regional Transportation Plan; EIS = Environmental Impact Study; Area Plan area = Placer County Tahoe Basin Area; VMT = vehicle miles travelled

^a Daily VMT estimates were based on 2035 region-wide VMT reported in Table 3.3-16 of the Lake Tahoe RTP/SCS EIR/EIS.

^b Data available from Table D in memorandum from LSC Transportation Consultants (Shaw 2016)

^c Calculated assuming Placer County accounts for 23 percent of total regional VMT. This is based on county and regional VMT in Appendix F of the RPU EIS and Table 3.3-16 of the Lake Tahoe RTP/SCS EIR/EIS, respectively.

^d The Area Plan analysis calculates mobile emissions using emission factors from EMFAC2014, which estimates generally lower emissions than EMFAC2011 on a per-mile basis due to more stringent vehicle standards and revised forecasting.

Source: Shaw 2016, TRPA 2012, TMPO and TRPA 2012, data compiled by Ascent Environmental in 2016.

Proposed Project

The RPU EIS concluded that the RPU would not conflict with or obstruct implementation of any applicable air-quality related plans, and would not have significant impacts (TRPA 2012:3.4-22).

The following combines the analysis for the proposed Area Plan and lodge project, which is based on the mass of CO emitted into the California portion of the LTAB. The potential for localized CO impacts, which is based on intersection volume and LOS data, is addressed under Impact 11-4 below.

Alternative 1: Proposed Area Plan/Proposed Lodge

Alternative 1 would include the residential land use allocations from the Regional Plan, add 400 new TAUs, and reduce commercial floor area by 180,000 square feet (see Table 11-4). The Kings Beach Center design concept would be consistent with, and within, the Area Plan land use allocations. Based on more current survey information and model calibration (Norberg, pers. comm., 2015), and as shown in Table 11-3, Alternative 1 would reduce 2035 projected region-wide vehicle activity from 2,131,000 to 1,973,780 VMT per day. Assuming that the Placer County portion accounts for 23 percent of the region's vehicle activity, 2015 base conditions reported by LSC, and interpolating for 2018, Alternative 1 would result in 438,632 VMT per day in the Area Plan area, which is 9,331 VMT per day less than that evaluated in the RPU EIS.

As shown in Table 11-2 above, Alternative 1 would result in mobile-source CO emissions within the 2018 emissions budgets allocated for transportation conformity. The transportation emissions budget is the basis for air quality planning efforts in the Lake Tahoe CO Maintenance Plan. If the transportation emissions budget is met, then LTAB is considered to be on track for maintaining of the NAAQS and CAAQS for CO. Alternative 1 would not conflict with or obstruct regional CO maintenance efforts. Alternative 1 would also result in less CO emissions from mobile sources than previously considered in the RPU EIS. Therefore, this impact would be **less than significant**.

Alternative 2: Area Plan with No Substitute Standards/Reduced Scale Lodge

Alternative 2 would not change land use allocations of the Regional Plan (see Table 11-4), and those required for the Tahoe City Lodge and Kings Beach Center design concept would be within that total. As shown in Table 11-3, refinements to the traffic model based on recent data result in lower regional VMT estimates than reported in the RPU EIS and RTP/SCS EIR/EIS. These adjustments reduce 2035 projected region-wide vehicle activity from 2,131,000 to 1,980,026 VMT per day. Assuming that the Placer County portion accounts for 23 percent of the region's vehicle activity, 2015 base conditions reported by LSC, and interpolating for 2018, Alternative 2 would result in 438,843 VMT per day in the Plan area, which is 9,120 VMT per day lower than determined by the RPU EIS.

As shown in Table 11-2 above, Alternative 2 would result in mobile-source CO emissions well within the 2018 emissions budgets allocated for transportation conformity. The transportation emissions budget is the basis for air quality planning efforts in the Lake Tahoe CO Maintenance Plan. If the transportation emissions budget is met, then LTAB is considered to be on track for maintaining the NAAQS and CAAQS for CO. Alternative 2 would not conflict with or obstruct regional CO maintenance efforts. Alternative 2 would also result in less CO emissions from mobile sources than previously considered in the RPU EIS. Therefore, this impact would be **less than significant**.

Alternative 3: Reduced Intensity Area Plan/Reduced Height Lodge

Alternative 3 would include the land use allocations of the Regional Plan, but would add 200 new TAUs and reduce commercial floor area by 90,000 square feet (see Table 11-4). As shown in Table 11-3, Alternative 3 would reduce 2035 projected region-wide vehicle activity from 2,131,000 to 1,978,719 VMT per day. Assuming that the Placer County portion accounts for 23 percent of the region's vehicle activity, 2015 base conditions reported by LSC, and interpolating for 2018, Alternative 3 would result in 438,799 VMT per day in the Area Plan area, which is 9,164 VMT per day lower than determined by the RPU EIS.

As shown in Table 11-2 above, Alternative 3 would result in mobile-source CO emissions well within the 2018 emissions budgets allocated for transportation conformity. The transportation emissions budget is the basis for air quality planning efforts in the Lake Tahoe CO Maintenance Plan. If the transportation emissions budget is met, then LTAB is considered to be on track for maintaining the NAAQS and CAAQS for CO. Alternative 3 would not conflict with or obstruct regional CO maintenance efforts. Alternative 3 would also

result in less CO emissions from mobile sources than previously considered in the RPU EIS. Therefore, this impact would be **less than significant**.

Alternative 4: No Project

Alternative 4 would include the development allocations authorized in the Regional Plan without incorporating any of the changes proposed in the Area Plan. Compared to that evaluated in the RPU EIS, Alternative 4 would result in lower densities, 22 fewer permanent residential units, and 24 additional short-term residential units (as shown in Table 11-3). These changes, along with the model adjustments based on current data, would reduce 2035 projected region-wide vehicle activity from 2,131,000 to 1,983,452 VMT per day, as shown in Table 11-3. Assuming that the Placer County portion accounts for 23 percent of the region's vehicle activity, 2015 base conditions reported by LSC, and interpolating for 2018, Alternative 2 would result in 438,959 VMT per day in the Area Plan area, which is 9,004 VMT per day lower than determined by the RPU EIS.

As shown in Table 11-2 above, Alternative 4 would result in mobile-source CO emissions well within the 2018 emissions budgets allocated for transportation conformity. The transportation emissions budget is the basis for air quality planning efforts in the Lake Tahoe CO Maintenance Plan. If the transportation emissions budget is met, then LTAB is considered to be on track for maintaining the NAAQS and CAAQS for CO. Alternative 4 would not conflict with or obstruct regional CO maintenance efforts. Alternative 4 would also result in less CO emissions from mobile sources than previously considered in the RPU EIS. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 11-2: Short-term construction emissions of ROG, NO_x, PM₁₀, and PM_{2.5}

Implementation of the proposed Area Plan and subsequent projects, including the Kings Beach Center design concept and Tahoe City Lodge, would involve construction that would result in the temporary generation of ROG, NO_x, PM₁₀ and PM_{2.5} emissions from site preparation (e.g., excavation, grading, and clearing); diesel-powered off-road equipment, trucks hauling materials to and from the site, worker commute exhaust emissions, the application of architectural coatings, and paving. The anticipated short-term construction emissions of individual development projects under Area Plan Alternatives 1 through 4 is not anticipated to result in more severe impacts than those identified in the RPU EIS. Emissions associated with the construction emissions of future individual development projects would have the potential to exceed PCAPCD-recommended significance criteria, thereby potentially violating or contributing substantially to the nonattainment status of the LTAB with respect to the CAAQS for ozone and PM₁₀. Thus, the short-term construction emissions in the region would be a **significant** impact for Area Plan Alternatives 1 through 4.

Like other individual projects, construction activity associated with Lodge Alternatives 1 through 4 would result in the temporary generation of ROG, NO_x, PM₁₀ and PM_{2.5} emissions. Construction activity for Lodge Alternatives 1 and 3 would generate emissions of ROG that exceed the PCAPCD-recommended significance criterion of 82 lb/day, thereby potentially violating or contributing substantially to the nonattainment status of the LTAB with respect to the CAAQS for ozone. Thus, the short-term construction emissions of ROG would be **significant** at the project level for Lodge Alternatives 1 and 3. Construction associated with Lodge Alternatives 2 and 4 would not generate ROG, NO_x, PM₁₀ and PM_{2.5} emissions that exceed PCAPCD-recommended significance criteria and, therefore, would not violate or contribute to the nonattainment status of the LTAB with respect to the CAAQS for ozone and PM₁₀. Thus, short-term construction emissions of ROG, NO_x, PM₁₀ and PM_{2.5} would be **less than significant** for Lodge Alternatives 2 and 4.

Construction emissions are described as “short-term” or temporary in duration and have the potential to represent a significant air quality impact, if they violate or contribute to the violation of an applicable air quality standard. ROG and NO_x emissions are primarily associated with gas and diesel equipment exhaust. ROG is also emitted during the application of architectural coatings and during paving. Fugitive dust

emissions (PM₁₀ and PM_{2.5}) are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT and travel speed by construction vehicles on- and off-site.

Construction activities performed under all alternatives would be required to comply with TRPA's Best Construction Practices Policy for Construction Emissions and follow PCAPCD's best construction practices, as described above under the regulatory settings. This includes fugitive dust limits such as watering twice per day during ground disturbance activities.

Placer County Tahoe Basin Area Plan Program-Level Analysis

Although project-specific details are not known for individual construction projects (other than the Tahoe City Lodge, and to a limited degree, the Kings Beach Center design concept) that would occur under the Area Plan, the types of construction activities that would be associated with land use development and redevelopment projects typically generate equipment exhaust and fugitive dust emissions that could violate or contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations, especially considering the nonattainment status of the LTAB portion of Placer County with respect to the CAAQS for NO_x and PM₁₀. For this reason, the RPU EIS concluded that short-term construction emissions of the adopted updated Tahoe Regional Plan (i.e., Alternative 3 of the RPU EIS) would have a potentially significant air quality impact.

Construction would still occur under all four Area Plan alternatives and would be subject to the Regional Plan goals, policies, and Code provisions as well as PCAPCD regulations pertaining to construction emissions and activities. The level of construction-generated emissions that could occur under each alternative is discussed separately below. This analysis relies on comparisons to the analysis provided in the RPU EIS. Table 11-4 summarizes the level of new land use development that would occur under each Area Plan alternative. More detailed discussion of construction emissions associated with each alternative are discussed separately below.

Table 11-4 Existing and Planned Land Use in the Placer County portion of the Lake Tahoe Region

Land Use Types	2015	2035				
	Existing	Regional Plan Update EIS	Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Project)
Total Residential Units	11,190	12,206	12,206	12,206	12,206	12,206
Full-time occupied residential units	3,698	4,192	4,192	4,192	4,191	4,170
Seasonal/part-time residential units	7,492	8,014	8,014	8,014	8,015	8,038
Commercial Floor Area (sq. ft.)	1,306,564	1,576,882	1,396,882	1,576,882	1,486,882	1,576,882
TAUs	1,340	1,511	1,911	1,511	1,711	1,511

Notes: EIS = Environmental Impact Study, sq. ft. = square feet, TAU = tourist accommodation unit

Source: Data compiled by Ascent Environmental in 2016.

Alternative 1: Proposed Area Plan

As shown in Table 11-4, Alternative 1 would result in development of 180,000 fewer square feet of commercial floor area and 400 more TAUs built by 2035 than was estimated for the Plan area in the RPU EIS. Assuming an average of 1,452 square feet per TAU, based on CalEEMod assumptions for a hotel room, the changes proposed by the Area Plan would result in a net addition of 400,800 square feet of building space from the RPU build-out.

Additionally, the land use allowances under Alternative 1 would include the Kings Beach Center design concept (See Table 3-4). Based on modeling conducted, the construction-generated emissions from implementation of the Kings Beach Center design concept would exceed PCAPCD's ROG emissions

significance criteria of 82 lb/day. See Appendix H-5 for detailed results and assumptions related to this project-level analysis.

Apart from the Kings Beach Center design concept, the types of construction activities that would be associated with land use development and redevelopment projects under the Area Plan are not known at the time of writing this EIR/EIS; however, given the limited construction season in the region (i.e., May 1 to October 15) and the amount of new development or redevelopment that could occur under the Area Plan, it is possible that a substantial amount of construction activity could occur at one time.

Construction would be subject to TRPA's Best Construction Practices Policy for Construction outlined in TRPA Standard Conditions of Approval. Although the RPU EIS concluded that development and implementation of its Best Construction Practices Policy for Construction would reduce construction-related air quality impacts of the Regional Plan to a less-than-significant level, this significance determination assumed that the measures in this policy would ensure that construction-generated emissions of individual projects would not exceed PCAPCD's mass emission significance criteria (TRPA 2012:3.4-28 to 3.4-29). Depending on the size and scope of the project, this may not always be the case. Therefore, maximum daily construction emissions of projects developed under Alternative 1 could potentially exceed PCAPCD's mass emission significance criteria of 82 lb/day for ROG, NO_x, and/or PM₁₀, and the Kings Beach Center design concept would exceed significance criteria for ROG. Thus, implementation of the Alternative 1 would violate or contribute substantially to the nonattainment status of the LTAB with respect to the CAAQS for ozone and PM₁₀. Also, Alternative 1 would result in construction of additional building area beyond what was analyzed under the RPU. Therefore, this impact would be **potentially significant**.

Alternative 2: Area Plan with No Substitute Standards

As shown in Table 11-4, Alternative 2 would have no land uses changes in the Placer County portion of the region compared to what was estimated in the RPU EIS. In addition, the land use allowances under Alternative 2 would include the Kings Beach Center design concept.

For the same reasons described under Alternative 1, construction-related emissions under Alternative 2 could contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations, especially considering the nonattainment status of the LTAB portion of Placer County with respect to the CAAQS for ozone and PM₁₀. Because Alternative 1 would result in the development of the same land uses as the Regional Plan and because the RPU EIS determined that construction of land uses under the Regional Plan could contribute substantially to an existing or projected air quality, this impact would be **potentially significant**.

Alternative 3: Reduced Intensity Area Plan

As shown in Table 11-4, Alternative 2 would result in the development of 90,000 fewer square feet of commercial floor area and 200 more TAUs built by 2035 than what was estimated for the Placer County portion of the region in the RPU EIS. Assuming an average of 1,452 square feet per TAU, based on CalEEMod assumptions for a hotel room, the changes proposed by the Area Plan would result in a net addition of 200,400 square feet of building space. There would also be minor differences between full-time and seasonal/part-time residential units. In addition, the land use allowances under Alternative 3 would include the Kings Beach Center design concept.

For the same reasons described under Alternative 1, construction-related emissions under Alternative 3 could contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations, especially considering the nonattainment status of the LTAB portion of Placer County with respect to the CAAQS. This would be a **potentially significant** impact.

Alternative 4: No Project

Alternative 4 would include development of the allocations authorized in the Regional Plan, but without any of the changes proposed in the Area Plan. As analyzed in the RPU EIS, Alternative 4 would result in the construction of 22 fewer long-term residential units and 24 more short-term residential units compared to the RPU (see Table 11-4).

For the same reasons described under Alternative 1, Alternative 4 could contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations, especially considering the nonattainment status of the LTAB portion of Placer County with respect to the CAAQS. This would be a **potentially significant** impact.

Tahoe City Lodge Project-Level Analysis

Emissions of CAPs and precursors would be generated during construction of the lodge under each alternative and were estimated using CalEEMod. Table 11-5 summarizes the maximum daily emissions that could be generated during lodge construction for each alternative. Detailed modeling parameters are included in Appendix H-3.

Alternative 1: Proposed Lodge

Construction of Alternative 1 would involve demolition of existing facilities and construction of the Tahoe City Lodge site with 118 hotel rooms; 17,390 square feet of office, restaurant, and recreational space; a 6,738-square-foot golf course clubhouse; driveways; and approximately 131 parking spaces. Construction would last approximately 16 to 18 months, starting in early 2017, and any ground disturbance activities would be suspended during winter months between October and May per TRPA Code Section 33.3.1 and Regional Plan Policy S-1.6. Approximately 300 construction days would be needed to complete construction of this alternative.

As shown in Table 11-5, construction activity that would take place under Alternative 1 would generate maximum daily emissions of 82 lb/day of ROG, 52 lb/day of NO_x, and 3 lb/day of PM₁₀. Maximum daily ROG emissions may exceed PCAPCD's standard of significance of 82 lb/day when accounting for variances in construction methods. Emissions of ROG would peak during the application of architectural coatings. This assumes coatings would be applied over an 18-day period, which is the duration assumed by CalEEMod for a project of this size. CalEEMod also assumes to the coatings have an average VOC content of 150 grams per liter (g/L), which is consistent with the upper VOC content limit for typical architectural coatings allowable by PCAPCD Rule 218 (ARB 2016). Therefore, maximum daily construction emissions could exceed PCAPCD's mass emission significance criteria of 82 lb/day for ROG, thereby violating or contributing substantially to the nonattainment status of the LTAB with respect to the CAAQS for ozone. This would be a **significant** impact.

Table 11-5 Maximum Daily Emissions Generated by Construction for the Tahoe City Lodge Project Alternatives (lb/day)

Alternative	Construction Year	ROG	NO _x	Total PM ₁₀ ¹	Total PM _{2.5} ¹	Exhaust PM ₁₀ ²	Exhaust PM _{2.5} ²
1	2017	5	52	22	13	3	3
	2018	82	31	3	2	2	2
2	2017	5	52	22	13	3	3
	2018	48	29	2	2	2	1
3	2017	5	52	22	13	3	3
	2018	86	32	3	2	2	2
4	2017	29	30	2	2	2	2
PCAPCD's Significance Criteria		82	82	82	NA	NA	NA

Note: PM_{2.5} is shown for informational purposes. Additional details are provided in Appendix H-3.

¹ Includes particulate matter emissions from fugitive dust and exhaust

² Primarily consists of PM from diesel-powered construction equipment and trucks. Exhaust-related PM emissions are shown for the purposes of the analysis under Impact 11-5.

ROG = reactive organic gases

NO_x = nitrous oxides

PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less

PM_{2.5} = fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less

lb = pound

PCAPCD = Placer County Air Pollution Control District

NA = Not available

Source: Data provided by Ascent Environmental in 2016.

Alternative 2: Reduced Scale Lodge

Construction of Alternative 2 would involve demolition of existing facilities except for the clubhouse and construction of the Tahoe City Lodge site with 56 hotel rooms; 19,084 square feet of office, restaurant, and recreational space; driveways; and approximately 131 parking spaces. Construction would last approximately 16 to 18 months, starting in early 2017, and any ground disturbance would be suspended during winter months between October and May. As a conservative assumption, approximately 300 construction days would be needed to complete construction of this alternative, similar to Alternative 1. Actual construction duration would likely be less due to the reduced scale of the lodge and because the existing clubhouse would not undergo demolition.

As shown in Table 11-5 construction of Alternative 2 would result maximum daily emissions of 48 lb/day of ROG, 52 lb/day of NO_x, and 3 lb/day of PM₁₀. Maximum daily emissions would not exceed applicable PCAPCD-recommended significance standards. This impact would be **less than significant**.

Alternative 3: Reduced Height Lodge

Similar to Alternative 1, construction of Alternative 3 would involve demolition of existing facilities and construction of the Tahoe City Lodge site with 118 hotel rooms; 16,280 square feet of office, restaurant, and recreational space; a 6,738-square-foot golf course clubhouse; driveways; and approximately 125 parking spaces. Construction would last approximately 16 to 18 months, starting in early 2017, and any ground disturbance would be suspended during winter months between October and May. Approximately 300 construction days would be needed to complete construction of this alternative.

As shown in Table 11-5, construction of Alternative 3 would generate maximum daily emissions of 86 lb/day of ROG, 52 lb/day of NO_x, and 3 lb/day of PM₁₀. Maximum daily ROG emissions would exceed PCAPCD's standard of significance of 82 lb/day. These emissions are anticipated to occur during application of architectural coating. This assumes coatings would be applied over an 18-day period, the default assumption in CalEEMod for a project of this size. The coatings are also assumed to have an average VOC content of 150 grams per liter (g/L), which is consistent with the upper VOC content limit for typical architectural coatings under PCAPCD Rule 218 (ARB 2016). Therefore, maximum daily construction emissions of ROG would contribute substantially to the nonattainment status of the LTAB with respect to the CAAQS for ozone. This would be a **significant** impact.

Alternative 4: No Project

Although no major construction is anticipated under Alternative 4, there would be some activity associated with renovation of the existing facility that may involve minor vehicle and material delivery trips as well as the use of power tools and other equipment that would most likely use on-site electric connections. Dust may be temporarily generated during renovation. Emissions associated with renovation activities are assumed to take approximately 100 days and would likely occur only within 2017.

As shown in Table 11-5, renovation activity under Alternative 4 would result maximum daily emissions of 29 lb/day of ROG, 30 lb/day of NO_x, and 2 lb/day of PM₁₀. Maximum daily emissions would not exceed PCAPCD's significance criteria. Therefore, construction of Alternative 4 would result in a **less-than-significant** impact to air quality. Detailed model assumptions can be found in Appendix H-3.

Mitigation Measure 11-2a: Reduce short-term construction-generated emissions of ROG, NO_x, and PM₁₀

Mitigation Measure 11-2 is required for Area Plan Alternatives 1, 2, and 3.

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 PM₁₀ for each project would be less than PCAPCD's significance standards 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 or 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 ARB 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 standards for of ROG, NO_x, and PM₁₀ 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-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 11-2b: Reduce short-term construction-generated emissions of ROG

Mitigation Measure 11-2 is required for Lodge Alternatives 1 and 3.

The applicant for the lodge project shall require its prime construction contractor to implement measures to ensure that construction-generated emissions of ROG would not exceed PCAPCD's significance standard of 82 lb/day. Measures to ensure maximum daily emissions of ROG would not exceed 82 lb/day include, but are not limited to, the following:

- ▲ Use of no- or low-solids content (i.e., no- or low-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;

- ▲ Use existing power sources (e.g., power poles) or clean fuel (e.g., 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;
- ▲ 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;
- ▲ Use of Tier 3 or better engines for construction equipment; 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 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.

Prior to initiating construction, the applicant shall receive written approval by PCAPCD that its selected measures are sufficient for ensuring the construction-related ROG emissions would not exceed 82 lb/day.

Significance after Mitigation

Implementation of Mitigation Measure 11-2a would ensure that all individual development projects developed under Area Plan Alternatives 1, 2, and 3, including the Kings Beach Center design concept, would not generate construction-related emissions that exceed PCAPCD significance criteria for construction-generated emissions. Therefore, this impact would be reduced to a **less-than-significant** level for Area Plan Alternatives 1, 2, and 3. Mitigation cannot be required for Area Plan Alternative 4, because it is the no-action alternative. Therefore, because construction-related emissions of ROG, NO_x, and PM₁₀ may exceed PCAPCD's significance standards of 82 lb/day this impact would be **significant and unavoidable** for Area Plan Alternative 4.

With respect to recommended project-level mitigation of ROG emissions for the lodge, use of architectural coatings with an average VOC content equal to or less than 15 grams of VOC per liter along with the use of off-road equipment with Tier 4 Final engines would reduce construction-generated ROG emissions to less-than-significant levels without the need for paying into PCAPCD's Land Use Air Quality Mitigation Fund. Use of no- or low-VOC architectural coatings would reduce ROG emissions from the application of architectural coatings by 90 percent. Resulting architectural coating emissions from Lodge Alternatives 1 and 3 would be reduced to 8, and 9 lb/day, respectively. (Detailed calculations are provided in Appendix H-3.) If, however, it is not feasible to use no-VOC/low-VOC architectural coatings the project applicant may choose to adequately reduce project emissions by paying into PCAPCD's Land Use Air Quality Mitigation Fund. Therefore, implementation of Mitigation Measure 11-2b would ensure that construction activity associated with Lodge Alternatives 1 and 3 would not generate maximum daily emissions of ROG that exceed PCAPCD significance criteria. As a result, this impact would be reduced to a **less-than-significant** level for Lodge Alternatives 1 and 3.

Impact 11-3: Long-term operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5}

Implementation of the Area Plan alternatives would result in a substantial net decrease in operational emissions of in ROG, NO_x, and CO between existing conditions and the planning horizon (2035). Implementation of the Area Plan alternatives would result in a net increase in emissions of PM₁₀ and PM_{2.5}; however, this increase would not exceed applicable PCAPCD significance criteria. These results are consistent with the evaluation of long-term operational emissions in the RPU EIS. Operational emissions of ROG, NO_x, and PM₁₀ associated with the Tahoe City Lodge alternatives would not exceed PCAPCD-recommended significance criteria of 82 lb/day. Therefore, operations under the Area Plan alternatives and the Tahoe City Lodge alternatives would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, or violate CAAQS or NAAQS. As a result, this impact would be **less than significant**.

Long-term operation emissions would be generated by area- and mobile-source emissions of CAPs and precursors (i.e., ROG, NO_x, PM₁₀, and PM_{2.5}) associated with land uses developed or redeveloped under the Area Plan. Area-sources associated with land use development generally include the combustion of natural gas for space heating, water heating, and cooking; wood burning in wood stoves; off-gas emissions from consumer products; off-gas emissions from the application of architectural coatings as part of regular maintenance; and landscaping and snow-removal equipment at residential and non-residential land uses. Area-source emissions are a function of land use type and size. Mobile-source emissions are a function of the number of vehicle trips generated by land uses and the length of those trips. An increase in land use development in an air basin is generally associated with an increase in area- and mobile-source emissions in that air basin. Both area- and mobile-source emission sources are subject to state and federal emissions regulations.

Separate analyses of operational emissions are provided below for the Area Plan and lodge. First discussed is a program-level analysis of operational emissions associated with new land uses developed under the Area Plan alternatives, followed by a project-specific analyses of emissions associated with operation of the lodge alternatives.

Placer County Tahoe Basin Area Plan Program-Level Analysis

This program-level analysis of the Area Plan alternatives discusses the analysis of operational emissions from the level of land use development anticipated by the Regional Plan in the entire region, as presented in the RPU EIS; identifies some necessary adjustments to update the analysis in the RPU EIS; and examines whether the levels of operational emissions from development anticipated under the Area Plan alternatives would be substantially different compared to the findings in the RPU EIS such that they would result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS. Separate project-level analyses of individual development projects in the Area Plan area would still be needed (similar to the project-level analysis provided in this document for the lodge). Future project-level analyses should estimate the operational emissions of individual projects and compare them to PCAPCD-recommended significance criteria.

Operational Emissions Analysis for the Entire Region in the RPU EIS

Long-term operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5} were examined under Impact 3.4-3 of the RPU EIS, which is incorporated herein by reference (see Chapter 4, “Approach to the Environmental Review”). This analysis examined whether operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5} in the region would increase over the planning horizon as a result of the selected RPU alternative (i.e., Alternative 3 in the RPU EIS). Table 11-6 replicates the key emissions finding of the RPU EIS analysis (converted from tons per year to pounds per day).

Table 11-6 Net Change in Operational Emissions from RPU-Anticipated Land Use Development in the Lake Tahoe Region from 2010 to 2035 (lb/day)

Source Type	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions ¹	-2,181	-3,479	-25,042	-32	-39
Area-Source Emissions ²	288	7	508	47	47
Natural Gas Emissions ²	4	34	17	4	4
Waterborne Transit Emissions	20	147	147	4 ³	4 ³
Total Emissions ⁴	-1,870	-3,291	-24,371	21	14
PCAPCD's Significance Criteria	82	82	—	82	—

Notes: CO = carbon monoxide; lb = pound; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; ROG = reactive organic gases; RPU = Regional Plan Update; tons/year = tons per year.

¹ Mobile-source emissions were estimated using EMFAC2011 (ARB 2011b).

² Area-source and natural gas emissions were estimated using CalEEMod Version 2013.2.2 (SCAQMD 2012a, as cited in TRPA 2012) based on the model's default building efficiency standards reflecting California's 2008 Title 24 Building Energy Efficiency Standards. Area-source emissions include emissions from landscaping equipment, architectural coating, natural gas or wood-burning stoves, and consumer products.

³ Waterborne transit-related emissions were reported as PM, and were assumed to be comprised of 100 percent PM_{2.5} as a worst-case assumption.

⁴ Totals may not sum exactly because of rounding.

Source: TRPA 2012: Table 3.4-6.

As shown in Table 11-6, the level of future land use development anticipated by the Regional Plan in the entire region would result in a long-term decrease in emissions of ozone precursors (ROG and NO_x) and CO. Long-term operational emissions of PM₁₀ and PM_{2.5} would increase; however, these increases would not exceed PCAPCD's mass emission significance criteria of 82 lb/day. For this reason, the RPU EIS concluded that operational emissions associated with land uses developed under the RPU would not be substantial, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS—thereby reaching a less-than-significant impact conclusion.

Adjusted Operational Emissions Analysis for the Placer County Portion of the Region

In order to more accurately understand the relevance of the analysis in the RPU EIS to the Area Plan three important adjustments to the emissions estimates in the RPU EIS are needed. First, the analysis of the Regional Plan estimated mobile-source emissions using EMFAC2011 (ARB 2011b), which has since been replaced by EMFAC2014 (ARB 2015b). At the time of writing this EIR/EIS, EPA recommends using EMFAC2014 for conformity analyses instead of EMFAC2011 (EPA 2015). This distinction is important because vehicle emission factors from EMFAC2014 are substantially lower than the vehicle emission factors from EMFAC2011, especially for future years, because EMFAC2014 accounts for more recent vehicle emission standards and revised forecasts that were not in place at the time EMFAC2011 was released. This is shown by the comparison of emission factors from these two versions of EMFAC is in Table 11-7.

Table 11-7 Weighted Average Emissions Factors for Vehicle Travel in the Lake Tahoe Air Basin in 2035 (grams per mile)

On-Road Mobile-Source Emissions Model	ROG	NO _x	CO ¹	PM ₁₀	PM _{2.5}	CO ₂ ²
EMFAC2011	0.046	0.225	0.931	0.006	0.006	535
EMFAC2014	0.026	0.143	0.561	0.002	0.001	291
Percent Change	-42%	-37%	-40%	-72%	-74%	-46%

Notes:

¹ CO emission factors shown for informational purposes.

² CO₂ emission factors are used in the greenhouse gas analysis in Chapter 12.

Source: EMFAC2011 (ARB 2011) and EMFAC2014 (ARB 2015b). Data compiled by Ascent Environmental in 2016.

The second adjustment needed concerns the use of CalEEMod to estimate area-source and natural gas emissions. Building efficiency requirements in California's latest Building Energy Efficiency Standards have become more stringent since the time the RPU EIS was prepared, resulting in area-sources and natural gas-consuming equipment to be more emissions efficient than before.

Third, the RPU EIS estimated the net change in operational emissions associated with new land use development in the entire region, whereas the Area Plan only concerns land use development in the Placer County portion of the Tahoe Basin.

Applying these three adjustments, Table 11-8 presents the net change in operational emissions from RPU EIS-anticipated land use development in the Placer County portion of the region from 2015 to 2035. The emissions estimates presented in Table 11-8 provide the basis for evaluating the operational emissions associated with the levels and types of land use development and redevelopment anticipated with each Area Plan alternative.

Table 11-8 Adjusted Net Change in Operational Emissions from RPU-Anticipated Land Use Development in the Placer County Portion of Tahoe Basin from 2010 to 2035 (lb/day)

Source Type	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions ¹	-787	-4,305	-17,267	-88	-91
Area-Source ²	237	5	385	10	10
Natural Gas Emissions ²	2	20	10	2	2
Waterborne Transit Emissions ³	20	147	147	4 ⁴	4 ⁴
Total Emissions ⁵	-528	-4,134	-16,725	-72	-75
PCAPCD Significance Criteria	82	82	- ⁶	82	- ⁶

Notes: CO = carbon monoxide; lb = pound; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; ROG = reactive organic gases; RPU = Regional Plan Update.

¹ Mobile-source emissions were estimated using EMFAC2014 (ARB 2015b).

² Area-source and natural gas emissions were estimated using CalEEMod (SCAQMD 2013a) based on the building efficiency standards required by the California 2016 Building Energy Efficiency Standards. Woodstove emissions per residential unit remain unchanged from the RPU analysis. Area source emissions include emissions from landscaping equipment, architectural coating, natural gas or wood-burning stoves, and consumer products.

³ No adjustments were made to the estimate of waterborne emissions provided in the RPU EIS.

⁴ Waterborne transit-related emissions were reported as PM, and were assumed to be comprised of 100 percent PM_{2.5} as a worst-case assumption.

⁵ Totals may not sum exactly because of rounding.

⁶ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Ascent Environmental 2016.

Operational Emissions Analysis for the Area Plan Alternatives

Each Area Plan alternative would change the types and amounts of land use development and redevelopment that would occur in the Placer County portion of the region than what was anticipated in the Regional Plan and analyzed in the RPU EIS (as Alternative 3 in that document). Levels of mobile-source emissions would differ among the alternatives based on the net change in VMT associated with the type and level of development that would occur. The net change in VMT for each Area Plan alternative (from 2015 to 2035) was estimated using data from the RTP/SCS EIR/EIS, which accounts for RPU-anticipated land uses (TMPO and TRPA 2012), and data provided by LSC Transportation Consultants (Shaw 2016). Similarly, levels of area-source and natural gas emissions would differ among the alternatives based on the type and size of buildings that would be developed. For example, consumer product use would be higher for a TAU than for a commercial area of the same floor area. For sake of comparison, the anticipated land use development and VMT increases under the RPU and each Area Plan alternative are shown below in Table 11-9. The projected increase in VMT in 2035 under all the Area Plan alternatives would be less than anticipated under the RPU.

Table 11-9 Anticipated Increases in Land Use Development and VMT from 2015 to 2035 under the RPU and Placer Area Plan Alternatives^a

Land Use Type or VMT	RPU	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Commercial (sq. ft.)	583,600	403,600	583,600	493,600	583,600
TAU (units)	342	742	342	542	342
Residential Units (units) ^b	4,074	4,074	4,074	4,074	4,064
Daily VMT (miles per day)	146,400	110,858	112,270	111,975	113,045

Notes: sq. ft. = square feet; RPU = Regional Plan Update; TAU = tourist accommodation units; VMT = vehicle miles travelled.

^a This table lists and compares the anticipated increase in land use and VMT from 2015 to 2035 under the RPU and each of the Placer Area Plan alternatives. This is shown to help the reader understand the differences between the RPU and Placer Area Plan in terms of the net change in land use and VMT from 2010 levels.

^b Full-time equivalent residential units. Assumes that seasonal residential units are operated 50 percent of the time.

Source: Data compiled by Ascent Environmental in 2016.

The net change in operational emissions from 2015 to 2035 for each Area Plan alternative and how they compare to the conclusions made in Impact 3.4 of the RPU EIS is discussed separately below.

Note that although the Area Plan alternatives only affect land uses and vehicle activity associated with development in the Plan area (a portion of the Tahoe Region), the operational air quality impact of the Area Plan is addressed at the region level because the RPU EIS did not analyze operational air quality impacts specific to the Area Plan area. Thus, the net change in operational emissions assumes that plans in areas within the region, but outside of Placer County, generally remain unchanged between 2010 and 2035. This approach is considered conservative because it applies a region-wide emissions analysis to PCAPCD-specific significance criteria.

Alternative 1: Proposed Area Plan

Alternative 1 would result in the development of 180,000 fewer square feet of commercial floor area and 400 more TAUs by 2035 than what was evaluated in the RPU EIS. (Assuming an average of 1,452 square feet per TAU, based on CalEEMod default assumptions for a hotel room, Alternative 1 would result in 400,800 square feet more TAU-zoned building space than reflected in the Regional Plan. CalEEMod assumptions for a hotel room include space for hotel lobbies and other shared amenities.) According to the transportation analysis prepared for this project, the level of vehicle activity under Alternative 1 would be lower by approximately 35,542 VMT per day in 2035 than the level of VMT estimated for the Regional Plan (Appendix G – Transportation and Circulation Supplemental Information; TMPO and TRPA 2012). The estimated net changes in emissions from 2015 to 2035 under Alternative 1 are summarized in Table 11-10.

Table 11-10 Net Change in Region-wide Operational Emissions from 2015 to 2035 under Alternative 1

Emissions Source	Net Change in Operational Emissions from 2015 to 2035 (lb/day) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions	-789	-4,315	-17,308	-88	-91
Area-Source Emissions ²	248	5	385	10	10
Natural Gas Emissions	2	<1	1	<1	<1
Waterborne Transit Emissions	20	147	147	4	4
Total	-519	-4,163	-16,775	-74	-775
PCAPCD Significance Criteria	82	82	— ³	82	NA— ³

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; region = Lake Tahoe Region; ROG = reactive organic gases; PCAPCD = Placer County Air Pollution Control District; Area Plan = Placer County Tahoe Basin Area Plan;

¹ Net change in operational emissions assumes that plans in areas within the Region, but outside of Placer County, stay constant in 2035.

² Includes emissions from landscaping equipment, architectural coating, natural gas or wood-burning stoves, and consumer products.

³ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data provided by Ascent Environmental in 2016

As shown in Table 11-10, Alternative 1 would result in a long-term net decrease in ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions. These results are consistent with the evaluation of long-term operational emissions in the RPU EIS, because Alternative 1 would also result in a net reduction in operational emissions from 2015 to 2035. This net reduction is due to improvements in vehicle emission standards outweighing the additional emissions generated by increases in total building area or VMT from 2015 to 2035.

In addition, the land use allowances under Alternative 1 would include the Kings Beach Center design concept. Based on the modeling conducted, the net operational emissions from implementation of the Kings Beach Center design concept would not exceed project-level PCAPCD significance criteria for ROG, NO_x, or PM₁₀. See Appendix H-5 for detailed results and assumptions related to construction-generated emissions due to the Kings Beach Center design concept.

Furthermore, as explained in the RPU EIS, TRPA's existing wood stove retrofit program, applicable county and state regulations, and other programs to improve air quality have resulted in a baseline condition with a

positive trend toward attainment of particulate matter and visibility threshold indicators and the CAAQS and NAAQS for PM₁₀ (TRPA 2012:3.4-30). The most recent TRPA Threshold Evaluation also determined that ambient levels of particulate matter continue to trend downward in the LTAB (TRPA 2012:3-33 through 3-34).

Therefore, the net change in emissions associated with implementation of Alternative 1 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS. Therefore, Alternative 1 would not result in more severe impacts than already analyzed in the RPU and this impact would still be **less than significant**.

Alternative 2: Area Plan with No Substitute Standards

According to the transportation analysis prepared for this project, Alternative 2 would decrease vehicle activity by approximately 34,130 VMT per day compared to the 2035 VMT estimates in the RPU EIS. Alternative 2 would have the same land uses assumed in the RPU EIS. Thus, Alternative 2 would result in a decrease in regional ROG, CO, NO_x, and PM emissions from RPU estimates, as shown in Table 11-11.

Table 11-11 Net Change in Region-wide Operational Emissions from 2015 to 2035 under Alternative 2

Emissions Source	Net Change in Operational Emissions from 2015 to 2035 (lb/day) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions	-789	-4,315	-17,306	-88	-91
Area-Source Emissions	238	5	385	10	10
Natural Gas Emissions	2	20	10	2	2
Waterborne Transit Emissions	20	147	147	4	4
Total	-530	-4,143	-16,764	-72	-75
PCAPCD Significance Criteria	82	82	- ²	82	NA- ²

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; Region = Lake Tahoe region; ROG = reactive organic gases; PCAPCD = Placer County Air Pollution Control District; Area Plan = Placer County Tahoe Basin Area Plan;

¹ Net change in operational emissions assumes that plans in areas within the region, but outside of Placer County, stay constant in 2035.

² PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data provided by Ascent Environmental in 2016

As shown in Table 11-11, Alternative 2 would result in a long-term net decrease in ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions. These results are consistent with the evaluation of long-term operational emissions in the RPU EIS, because Alternative 2 would also result in a net reduction in operational emissions from 2015 to 2035. This net reduction is due to improvements in vehicle emission standards outweighing the additional emissions generated by increases in total building area or VMT from 2015 to 2035. As with Alternative 1, the net operational emissions of the Kings Beach Center design concept would not exceed project-level PCAPCD significance criteria for ROG, NO_x, or PM₁₀ (see Appendix H-5).

As described above in Alternative 1, air quality regulations and programs created a positive trend toward attainment of particulate matter and visibility threshold indicators and the CAAQS and NAAQS for PM₁₀ (TRPA 2012:3.4-30). Therefore, the net change in emissions associated with implementation of Alternative 2 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS. Therefore, Alternative 2 would not result in more severe impacts than already analyzed in the RPU EIS and this impact would still be **less than significant**.

Alternative 3: Reduced Intensity Area Plan

Alternative 3 would result in 90,000 fewer square feet of commercial floor area and 200 additional TAUs built by 2035 than what was estimated for the Plan area of the RPU EIS. Assuming an average of 1,452 square feet per TAU, based on CalEEMod assumptions for a hotel room, Alternative 3 would result in 200,400 square feet of more TAU-zoned building space. CalEEMod assumptions for a hotel room include space for hotel lobbies and other shared amenities.) According to the transportation analysis prepared for

this project, the Alternative 3 would decrease vehicle activity by approximately 34,130 VMT per day compared to the 2035 VMT estimates in the RPU EIS.

As shown in Table 11-12, Alternative 3 would result in additional ROG, NO_x, and PM emissions over Regional Plan estimates, but these changes would not result in emissions increases that exceed PCAPCD's significance criteria.

As shown in Table 11-12, Alternative 3 would result in a long-term net decrease in ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions. These results are consistent with the evaluation of long-term operational emissions in the RPU EIS, because Alternative 3 would also result in a net reduction in operational emissions from 2015 to 2035. This net reduction is due to improvements in vehicle emission standards outweighing the additional emissions generated by increases in total building area or VMT from 2015 to 2035. As with Alternative 1, the net operational emissions of the Kings Beach Center design concept would not exceed project-level PCAPCD significance criteria for ROG, NO_x, or PM₁₀ (see Appendix H-5).

Table 11-12 Net Change in Region-wide Operational Emissions from 2015 to 2035 under Alternative 3

Emissions Source	Net Change in Operational Emissions from 2015 to 2035 (lb/day) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions	-789	-4,315	-17,306	-88	-91
Area-Source Emissions	242	5	385	10	10
Natural Gas Emissions	2	<0.1	1	<0.1	<0.1
Waterborne Transit Emissions	20	147	147	4	4
Total	-524	-4,163	-16,774	-74	-77
PCAPCD Significance Criteria	82	82	- ²	82	NA- ²

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; region = Lake Tahoe region; ROG = reactive organic gases; PCAPCD = Placer County Air Pollution Control District; Area Plan = Placer County Tahoe Basin Area Plan;

¹ Net change in operational emissions assumes that plans in areas within the region, but outside of Placer County, stay constant in 2035.

² PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data provided by Ascent Environmental in 2016

As described above in Alternative 1, air quality regulations and programs created a positive trend toward attainment of particulate matter and visibility threshold indicators and the CAAQS and NAAQS for PM₁₀ (TRPA 2012:3.4-30). Therefore, the net change in emissions associated with implementation of Alternative 3 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS. Therefore, Alternative 3 would not result in more severe impacts than already analyzed in the RPU and this impact would still be **less than significant**.

Alternative 4: No Project

Alternative 4, the No Project Alternative, would include the development allocations authorized in the Regional Plan without any of the changes proposed in the Area Plan. Compared to the Regional Plan and the other Area Plan alternatives, Alternative 4 would result in lower densities, 22 fewer permanent residential units, and 24 more short-term residential units. By 2035, the No Project Alternative would result in 33,355 fewer VMT per day compared to the 2035 VMT estimates in the RPU EIS.

As shown in Table 11-13, Alternative 4 would result in lower ROG, NO_x, and PM emissions than RPU EIS estimates.

As shown in Table 11-13, Alternative 4 would result in a long-term net decrease in ROG, NO_x, CO, PM₁₀, and PM_{2.5} emissions. This net reduction is due to improvements in vehicle emission standards outweighing the additional area-source and natural gas emissions associated with increases in total building area from 2015 to 2035.

Table 11-13 Net Change in Region-wide Operational Emissions from 2015 to 2035 under Alternative 4

Emissions Source	Net Change in Operational Emissions from 2015 to 2035 (lb/day) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile-Source Emissions	237	5	384	10	10
Area-Source Emissions	-789	-4,315	-17,305	-88	-91
Natural Gas Emissions	2	<0.1	0.5	<0.1	<0.1
Waterborne Transit Emissions	20	147	147	4	4
Total	-530	-4,163	-16,774	-74	-77
PCAPCD Significance Criteria	82	82	- ²	82	NA- ²

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; region = Lake Tahoe region; ROG = reactive organic gases; PCAPCD = Placer County Air Pollution Control District; Area Plan = Placer County Tahoe Basin Area Plan;

¹ Net change in operational emissions assumes that plans in areas within the region, but outside of Placer County, stay constant in 2035.

² PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data provided by Ascent Environmental in 2016

As described above in Alternative 1, air quality regulations and programs created a positive trend toward attainment of particulate matter and visibility threshold indicators and the CAAQS and NAAQS for PM₁₀ (TRPA 2012:3.4-30). Therefore, the net change in emissions associated with implementation of Alternative 4 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, and/or violate CAAQS or NAAQS. Therefore, Alternative 4 would not result in more severe impacts than already analyzed in the RPU EIS and this impact would still be **less than significant**.

Tahoe City Lodge Project-Level Analysis

For the Tahoe City Lodge, a separate project-level analysis was performed using CalEEMod and mobile-source emission factors from EMFAC2014. Mobile-source emissions of CAPs and precursors would be generated by guest trips, employee commute trips, and other vehicle trips (e.g., deliveries of supplies, maintenance vehicles) associated with operation of the lodge. The estimated number of operation-related vehicle trips is presented in Table 10-9 in Chapter 10, "Transportation and Circulation." Other operational sources of emissions would include natural gas combustion used for space and water heating, and landscaping and snow removal equipment such as mowers, leaf blowers, and snow blowers. The application of architectural coatings, as part of regular maintenance, and the use of various consumer products such as cleaning chemicals would also generate off-gas emissions of ROG. Snow removal equipment associated with the project (i.e., snow plows) used during the winter season would also generate emissions of CAPs and precursors. All of the emissions from these sources would be generated in the Placer County portion of the LTAB. Separate detailed analyses of the Tahoe City Lodge alternatives are presented below.

Tables 11-14 through 17 summarize the maximum daily operational emissions during the summer season of the first full year of operation in 2018. Emissions of ozone precursors, ROG and NO_x, are of greater concern during summer months due to formation of ozone in sunlight.

Alternative 1: Proposed Lodge

Alternative 1 would remove the existing clubhouse and commercial land uses on-site and result in the operation of a new 6,738-square-foot golf course clubhouse and 118-unit lodge including office space, a restaurant, a pool deck, and exercise room amounting to a total of 104,007 square feet of building space (additional building details are available in Chapter 3, "Description of Proposed Project and Alternatives"). Under Alternative 1, the level of vehicle activity would increase by approximately 2,783 VMT per day from existing conditions (see Appendix G-2, *Traffic Volumes and VMT for Placer Area Plan*, Table E).

Emissions associated with lodge operations under Alternative 1 are summarized in Table 11-14. These emissions are presented as the net change from existing 2015 conditions at the lodge site.

Table 11-14 Alternative 1 Net Change in Operational Emissions in 2018

Emissions Source	Maximum Daily Emissions (lb/day)				
	ROG	NO _x	CO ¹	PM ₁₀	PM _{2.5} ¹
Area sources	2.7	<0.1	<0.1	<0.1	<0.1
Natural Gas Consumption	<0.1	0.4	0.4	<0.1	<0.1
Mobile sources	2.1	3.8	16.1	0.4	0.2
Emissions Total ²	4.9	4.3	16.5	0.3	0.2
PCAPCD Significance Criteria	82	82	— ³	82	— ³

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NA = not applicable; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less

¹ Shown for informational purposes only.

² Totals may not sum due to rounding.

³ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Modeling by Ascent Environmental in 2016.

As shown in Table 11-14, operational emissions for Alternative 1 would not exceed the PCAPCD-recommended significance criteria of 82 lb/day. Therefore, operations under Alternative 1 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, or violate CAAQS or NAAQS. As a result, this impact would be **less than significant**.

Alternative 2: Reduced Scale Lodge

Alternative 2 would remove existing commercial land uses and replace them with a new 56-unit lodge that includes office space, a restaurant, a pool deck, and an exercise room amounting to a total of 60,560 square feet of building space. Additional building details are available in Chapter 3, "Description of Proposed Project and Alternatives." The existing golf course clubhouse would remain unchanged. Under Alternative 2, the level of maximum daily vehicle activity would increase by approximately 2,844 VMT from existing 2015 conditions (see Appendix G-2, *Traffic Volumes and VMT for Placer Area Plan*, Table E).

The net changes in operational emissions associated with lodge operations under Alternative 2 are summarized in Table 11-15. These emissions are presented as the net change from existing 2015 conditions at the lodge site.

As shown in Table 11-15, operational emissions for Alternative 2 would decrease compared to existing conditions and, therefore, not exceed the PCAPCD-recommended significance criteria of 82 lb/day. Therefore, operations under Alternative 2 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, or violate CAAQS or NAAQS. As a result, this impact would be **less than significant**.

Table 11-15 Alternative 2 Net Change in Operational Emissions in 2018

Source	Maximum Daily Emissions (pounds per day)				
	ROG	NO _x	CO ¹	PM ₁₀	PM _{2.5} ¹
Area sources	1.4	<0.1	0.0	0.0	0.0
Natural Gas Use	0.1	0.5	0.4	<0.1	<0.1
Mobile sources	-2.2	-3.9	-16.4	-0.4	-0.2
Emissions Total ²	-0.7	-3.5	-16.1	-0.3	-0.1
PCAPCD Significance Criteria	82	82	— ³	82	— ³

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NA = not applicable; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less

¹ Shown for informational purposes only.

² Totals may not sum due to rounding.

³ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data compiled by Ascent Environmental in 2016.

Alternative 3: Reduced Height Lodge

Alternative 3 would remove the existing clubhouse and commercial land uses and replace them with a new 6,738-square-foot golf course clubhouse and a 118-unit lodge. The lodge would include office space, a restaurant, a pool deck, and an exercise room amounting to a total of 108,915 square feet of new building space (additional building details are available in Chapter 3, “Description of Proposed Project and Alternatives”). The reduced height design results in approximately 4,908 additional square feet of floor area compared to the lodge under Alternative 1. The lodge, under Alternative 3, would increase vehicle activity by approximately 2,783 daily VMT as compared to existing 2015 conditions (see Appendix G-2, *Traffic Volumes and VMT for Placer Area Plan*, Table E).

The net changes in operational emissions associated with lodge operations under Alternative 3 are summarized in Table 11-16. These emissions are presented as the net change from existing 2015 conditions at the lodge site.

As shown in Table 11-16, operational emissions for Alternative 3 would decrease compared to existing conditions and, therefore, not exceed the PCAPCD-recommended significance criteria of 82 lb/day. Therefore, operations under Alternative 3 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, or violate CAAQS or NAAQS. As a result, this impact would be **less than significant**.

Table 11-16 Alternative 3 Net Change in Operational Emissions in 2018

Source	Maximum Daily Emissions (pounds per day)				
	ROG	NO _x	CO ¹	PM ₁₀	PM _{2.5} ¹
Area sources	2.8	<0.1	0.0	<0.1	<0.1
Natural Gas Use	0.1	0.5	0.4	<0.1	<0.1
Mobile sources	2.1	3.8	16.1	0.4	0.2
Emissions Total ²	5.0	4.3	16.5	0.4	0.2
PCAPCD Significance Criteria	82	82	-3	82	-3

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NA = not applicable; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less

¹ Shown for informational purposes only.

² Totals may not sum due to rounding.

³ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data compiled by Ascent Environmental in 2016.

Alternative 4: No Project

Alternative 4, No Project, would continue operation of the existing commercial land use which would include a foreseeable renovation with no change in building floor area. The existing clubhouse would remain unchanged. At full occupancy, the renovated commercial land use would increase maximum daily vehicle activity by approximately 8,029 VMT as compared to existing 2015 conditions (see Appendix G-2, *Traffic Volumes and VMT for Placer Area Plan*, Table E). The relatively high VMT associated with this alternative compared to the other alternatives is due to the higher trip rates associated with the full operation of a retail commercial land use compared to the proposed lodging facility.

The net changes in operational emissions associated with the existing commercial land use at full occupancy under Alternative 4 are summarized in Table 11-17. Emissions estimates are for full operations in 2018.

As shown in Table 11-17, operational emissions for Alternative 4 would not exceed the PCAPCD-recommended significance criteria of 82 lb/day. Therefore, operations under Alternative 4 would not result in substantial air pollutant emissions, deteriorate existing ambient air quality, conflict with air quality planning efforts, or violate CAAQS or NAAQS. As a result, this impact would be **less than significant**.

The rate of occupancy of on-site commercial units would be market driven and determination of when full occupancy would occur is speculative. NO_x and other pollutant emissions from mobile sources would also gradually decrease over time with improvements in mobile-source emissions control technology and cleaner fuels.

Table 11-17 Alternative 4 Net Change in Operational Emissions in 2018

Source	Maximum Daily Emissions (pounds per day)				
	ROG	NO _x	CO ¹	PM ₁₀	PM _{2.5} ¹
Area sources	0.5	<0.1	0.0	<0.1	<0.1
Natural Gas Use	0.0	0.2	0.2	<0.1	<0.1
Mobile sources	6.2	11.1	46.4	1.0	0.5
Emissions Total ²	6.7	11.3	46.6	1.1	0.5
PCAPCD Significance Criteria	82	82	— ³	82	— ³

Note: lb/day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NA = not applicable; NO_x = oxides of nitrogen; PCAPCD = Placer County Air Pollution Control District; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less

¹ Shown for informational purposes only.

² Totals may not sum due to rounding.

³ PCAPCD does not recommend mass emission-based significance criteria for CO and PM_{2.5}.

Source: Data compiled by Ascent Environmental in 2016.

Mitigation Measures

No mitigation is required.

Impact 11-4: Localized exposure to mobile-source carbon monoxide emissions

According to the RPU EIS, all affected intersections are anticipated to operate at acceptable LOS of D or better and would result in a less-than-significant impact. However, under all of the proposed project alternatives, some affected intersections may worsen operation to unacceptable LOS (i.e., LOS E or F). However, all affected intersections would operate with volumes that do not exceed 31,555 vehicles per hour, a SMAQMD screening criteria adjusted to Tahoe standards. Therefore, traffic volumes would not be heavy enough to result in a CO “hot spot.” For this reason, and based on the fact that CO emission factors would be reduced substantially over the planning period, long-term operation of proposed project Alternatives 1 through 4 would not result in congestion at intersections that would result in a violation of an air quality standard (i.e., 1-hour CAAQS of 20 ppm, 8-hour TRPA standard of 6 ppm for CO), contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. Although the proposed project would result in worsening of intersection LOS, total volumes of affected intersections would be below screening criteria. Thus, this would be a **less-than-significant** impact.

As described above under Impact 3.4-1 regarding transportation conformity for regional CO, mobile-source CO emissions would be reduced substantially over the plan implementation period and through the 2035 build-out year. All proposed project alternatives would be well within the North Shore CO emissions budget. None of the project alternatives would conflict with CO maintenance planning efforts.

With respect to localized CO impacts, the Transportation Project-Level Carbon Monoxide Protocol (Garza et al. 1997) states that signalized intersections that operate at an unacceptable level of service (LOS) represent a potential for a CO violation, also known as a “hot spot.” The PCAPCD recommends an analysis of CO concentrations for receptors located near signalized intersections that are projected to operate at LOS E or F. However, in the case of worsened LOS, SMAQMD has developed the following addition screening criteria for localized CO impacts. The SMAQMD screening method was developed using emission factors from ARB’s EMFAC2011 model. Adjusting for the 40 percent lower CO emission factors modeled in EMFAC2014 (see Table 11-7) and more stringent 8-hour CO standards for the Lake Tahoe area (6 ppm vs.

9.0 ppm), it is appropriate to use the adjusted-SMAQMD screening method for screening of CO impacts for intersections in the LTAB. The applicable screening criteria are as follows (SMAQMD 2009:4-5)

- ▲ The project would not result in an affected intersection experiencing more than 35,111 vehicles per hour (vph) (adjusted from 31,600 vph for the Sacramento area);
- ▲ The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway, or other locations where horizontal or vertical mixing of air would be substantially limited; and
- ▲ The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

According to the RPU EIS, all affected intersections under the Regional Plan are anticipated to operate at acceptable LOS of D or better and would result in less-than-significant impacts. However, according to the traffic analysis prepared for the proposed project, all four alternatives would decrease LOS from D to E at one or more affected intersections, but would not exceed any of the adjusted SMAQMD screening criteria above.

Proposed Project

The following combines the analysis for the proposed Area Plan and lodge project. Localized CO impacts are based on intersection volume and LOS data which was analyzed at an overall project-level, combining the impacts of both the Area Plan and lodge (see Appendix G-2, *Traffic Volumes and VMT for Placer Area Plan*).

Alternative 1: Proposed Area Plan/Proposed Lodge

As reported in Chapter 10, “Transportation and Circulation,” under Alternative 1, the intersection of SR 28 and Coon Street would be degraded from LOS D under existing conditions to LOS E and the intersection of SR 28 and Grove Street would remain as LOS F. Vehicle volumes at selected intersections, shown in Table 10-4, represent the most congested intersections affected by the Area Plan and do not exceed 3,000 vph at full buildout. Therefore, implementation of Alternative 1 would not trigger any of the adjusted SMAQMD screening criteria. Thus, implementation of Alternative 1 would not result in or contribute to local CO concentrations that exceed the 1-hour CAAQS of 20 ppm, 8-hour CAAQS, and the TRPA 8-hour AAQS of 6 ppm. Alternative 1 would also not result in more severe impacts than analyzed under the Regional Plan. Therefore, this impact would be **less than significant**.

Alternative 2: Area Plan with No Substitute Standards/Reduced Scale Lodge

Similar to Alternative 1, under Alternative 2, the intersection of SR 28 and Coon Street would be degraded from LOS D under existing conditions to LOS E and the intersection of SR 28 and Grove Street would remain as LOS F. Vehicle volumes at selected intersections, shown in Table 10-4, represent the most congested intersections affected by the Area Plan and do not exceed 3,000 vph at full build-out. Therefore, implementation of Alternative 2 would not trigger any of the adjusted SMAQMD screening criteria. Thus, implementation of Alternative 2 would not result in or contribute to local CO concentrations that exceed the 1-hour CAAQS of 20 ppm, 8-hour CAAQS, and the TRPA 8-hour AAQS of 6 ppm. Alternative 2 would also not result in more severe impacts than analyzed under the Regional Plan. Therefore, this impact would be **less than significant**.

Alternative 3: Reduced Intensity Area Plan/Reduced Height Lodge

As reported in Section 3.3, Transportation, under Alternative 3, the intersection of SR 28 and SR 89 (with the Fanny Bridge project) would be degraded from LOS C under existing conditions to LOS E and the intersection of SR 28 and Grove Street would remain as LOS F. Vehicle volumes at each selected intersection, shown in Table 10-4, represent the most congested intersections affected by the Area Plan and do not exceed 3,000 vph at full build-out. Therefore, implementation of Alternative 3 would not trigger any of the adjusted SMAQMD screening criteria. Thus, implementation of Alternative 3 would not result in or contribute to local CO concentrations that exceed the 1-hour CAAQS of 20 ppm, 8-hour CAAQS, and the TRPA 8-hour AAQS of 6

ppm. Alternative 3 would also not result in more severe impacts than analyzed under the Regional Plan. Therefore, this impact would be **less than significant**.

Alternative 4: No Project

Alternative 4 would include the development allocations authorized in the Regional Plan but without any of the changes proposed in the Area Plan. Similar to Alternative 1, under Alternative 4, the intersection of SR 28 and Coon Street would be degraded from LOS D under existing conditions to LOS E and the intersection of SR 28 and Grove Street would remain as LOS F. Vehicle volumes at selected intersections, shown in Table 10-4, represent the most congested intersections affected by the Area Plan and do not exceed 3,000 vph at full build-out. Therefore, implementation of Alternative 4 would not trigger any of the adjusted SMAQMD screening criteria. Thus, implementation of Alternative 4 would not result in or contribute to local CO concentrations that exceed the 1-hour CAAQS of 20 ppm, 8-hour CAAQS, and the TRPA 8-hour AAQS of 6 ppm. Alternative 4 would also not result in more severe impacts than analyzed under the Regional Plan. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 11-5: Exposure of sensitive receptors to toxic air contaminant emissions

Consistent with the Regional Plan, the proposed project would not site sensitive receptors near any major roadways or stationary sources of TACs, nor would the proposed project result in the siting of new stationary sources of TACs. However, implementation of projects under the Area Plan could potentially result in exposure of sensitive receptors to substantial TAC concentrations during construction. This would be **significant** impact at the program-level with Area Plan Alternatives 1, 2, 3, and 4.

With Lodge Alternatives 1, 2, 3, and 4, development and/or operation of the lodge would not result in construction or operation emissions of TACs that would substantially affect nearby sensitive receptors. This would be a **less-than-significant** impact for Lodge Alternatives 1, 2, 3, and 4.

The program-level analysis for the Area Plan alternatives tiers from the analysis in the RPU EIS. The RPU EIS concluded that the RPU would result in potentially significant impacts related to exposure to TAC emissions, but with appropriate mitigation the impacts would be less than significant (TRPA 2012:3.4-41).

Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) were identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. As a result, diesel PM is the primary TAC of concern for this analysis and is discussed because it is known to be emitted during construction and operation activities. Other TACs (e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride) are primarily associated with industrial operations and the proposed project would not be a source of emissions for these TACs.

The primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards) is the dose to which receptors are exposed. Dose is a function of the concentration of one or more substances in the environment and the duration of exposure to that substance. Dose 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 a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA) Health Risk Assessments, which determine the exposure of sensitive receptors to TAC emissions, 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 proposed project (OEHHA 2012:11-3).

In addition, according to *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California* (Higgins and Clinkenbeard 2006:12) and the *General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (Churchill and Hill 2000), the LTAB is not likely to contain naturally occurring asbestos.

According to the RPU EIS, operational emissions of TACs associated with the Regional Plan would be less than significant but acknowledged that construction emissions may occur in proximity to sensitive receptors and may result in exposure of receptors to substantial TAC concentrations, resulting in a potentially significant impact to air quality.

With respect to the proposed project, the exposure of sensitive receptors to TAC emissions from project-generated construction and operational sources are discussed separately below.

Construction

For construction activities, diesel PM is the primary TAC of concern. Consistent with construction activities under the RPU, construction-related activities resulting from the proposed project would cause short-term project-generated emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment used in site preparation (e.g., clearing and grading); onsite hauling of soil for cut and fill activities; paving; on-road truck travel; and other miscellaneous activities. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations. Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the periods of construction, for which most diesel-powered off-road equipment use would occur during the limited construction season (approximately May 1 to October 15) and only during those years when the proposed land uses are constructed.

Also important to consider is the proximity of nearby sensitive receptors and their occupancy characteristics. Studies show that diesel PM is highly dispersive (as an example, diesel PM concentrations decrease by 70 percent at 500 feet from the source) (Zhu et al. 2002), and receptors must be in close proximity to emission sources to result in the possibility of exposure to concentrations of concern.

Exhaust emissions of PM_{2.5}, considered a surrogate for diesel PM, would be limited by TRPA conditions of approval and Mitigation Measure 11-2 that would require best construction practices that include limiting PM emissions. The effect of construction impacts, accounting for these mitigation measures, are discussed for each alternative below.

Long-Term Operation

Consistent with operational activities under the Regional Plan, the proposed project would include long-term operation of sources of diesel PM, including heavy duty diesel-powered trucks, onsite diesel-fueled backup generators, and diesel-powered snow removal equipment. These types of diesel PM-generating activities would occur mostly from commercial land uses, including the proposed Tahoe City Lodge.

Placer County Tahoe Basin Area Plan Program-Level Analysis

Alternative 1: Proposed Area Plan

As discussed under Impact 11-2, Alternative 1 would result in construction of additional building area beyond what was analyzed in the RPU EIS. However, project-specific details such as construction schedule, equipment list, and disturbance area, are not available at the plan level, though this plan could include construction of projects similar to Kings Beach Center design concept. Construction activities associated with development or transportation infrastructure projects may expose sensitive receptors to substantial pollutant concentrations associated with diesel exhaust from heavy-duty construction equipment and heavy trucks. As mentioned in Section 11.2.2, TRPA revised its Standard Conditions of Approval to implement Mitigation Measure 3.4-5 from the RPU EIS which includes idling limits and guidance on staging construction as far away as possible on the project site from off-site receptors. Any construction occurring within the region would be subject to these conditions of approval. However, Mitigation Measure 3.4-5 also states that

projects under the RPU must demonstrate that current district-recommended best management practices (BMPs) are implemented to ensure sensitive receptors are not exposed to substantial TAC concentrations (TRPA 2012: 3.4-41). The analysis for the Area Plan conservatively assumes that there may be instances in which, depending on the size and scope of the project, and given the possibility of overlapping projects, sensitive receptors may be exposed to substantial TAC concentrations. In other words, without mitigation the Area Plan would not prevent an individual project or set of overlapping projects from generating construction emissions that exceed PCAPCD standards for exposure risks to TACs.

As presented in Impact 11-3, mobile-source operational emissions of particulate matter (which includes diesel PM) would be anticipated to decrease slightly over the plan implementation period, associated with more stringent vehicle emissions controls and less VMT under Area Plan Alternative 1. Alternative 1 does not propose the siting of new sensitive receptors or new stationary sources of TACs, consistent with the Regional Plan. The Area Plan would be consistent with Regional Plan objective to incentivize development in more urban areas, which are located along LTAB's main transportation corridors. ARB recommends a minimum setback distance of 500 feet from urban roads with over 100,000 vehicles per day or rural roads with over 50,000 vehicles per day (ARB 2005:4). However, consistent with the RPU EIS analysis, existing receptors would not be exposed to transportation facilities accommodating more than 50,000 vehicles per day.

Additionally, TRPA Standard Conditions of Approval would require site-specific project construction to occur as far as feasibly possible from sensitive receptors to reduce exposure of receptors to substantial TAC concentrations. However, the distance between a project and sensitive receptors and the duration of project construction cannot be determined at the plan level and could result in increased risks to nearby sensitive receptors. Thus, construction of projects could potentially result in the exposure of nearby sensitive receptors to concentrations of TACs that would exceed PCAPCD significance criteria. Due to this potential, Alternative 1 would result in a **significant** impact to air quality, consistent with the RPU EIS analysis.

Alternative 2: Area Plan with No Substitute Standards

For the same reasons identified under Alternative 1, operational emissions of TACs associated with Alternative 2 would be less than significant; however, as with implementation of any site-specific project, construction emissions may occur in proximity to sensitive receptors and may result in exposure of receptors to substantial TAC concentrations. Thus, construction of projects could potential result in the exposure of nearby sensitive receptors to concentrations of TACs that would exceed PCAPCD significance criteria. Due to this potential, Alternative 2 would result in a **significant** impact to air quality, consistent with the RPU EIS analysis.

Alternative 3: Reduced Intensity Area Plan

For the same reasons identified under Alternative 1, operational emissions of TACs associated with Alternative 3 would be less than significant; however, as with implementation of any site-specific project, construction emissions may occur in proximity to sensitive receptors and may result in exposure of receptors to substantial TAC concentrations. Thus, construction of projects could potential result in the exposure of nearby sensitive receptors to concentrations of TACs that would exceed PCAPCD significance criteria. Due to this potential, Alternative 3 would result in a **significant** impact to air quality, consistent with the RPU EIS analysis.

Alternative 4: No Project

Alternative 4 would include the development allocations authorized in the Regional Plan but without incorporating any of the changes proposed in the Area Plan. As discussed under Impact 11-3, mobile-source operational emissions of particulate matter (which includes diesel PM) would be anticipated to increase slightly over the plan implementation period, associated with slightly more VMT under Area Plan Alternative 4 compared to existing conditions. However, Table 11-17 shows that this increase in mobile-source PM emissions would be small at about 1 pound per day.

Thus, Alternative 4 would not result in exposure of sensitive receptors to substantial TAC emissions from operation. However, as with implementation of any site-specific project, construction emissions may occur in

proximity to sensitive receptors and may result in short-term exposure of receptors to substantial TAC concentrations. Due to this possibility, this would be a **significant** impact.

Tahoe City Lodge Project-Level Analysis

Alternative 1: Proposed Lodge

A few sensitive receptors are located within 1,000 feet of the proposed lodge site and clubhouse area. A place of worship, First Baptist Church at 390 Fairway Drive, is located as close as 475 feet north of the project boundary. Also, a tennis court and pool, which serve as outdoor recreation facilities, are located at Tahoe Marina Lodge approximately 330 feet south of the proposed lodge. The annual prevailing wind direction in Tahoe City is from the west and would generally blow pollutants from construction activities away from the closest sensitive receptors (WRCC 2014). Other nearby land uses include commercial uses and transient lodging where occupants typically do not reside longer than a weekend or a week-long vacation stay. Given the locations of potential receptors relative to potential diesel PM emission sources and the temporary nature of construction activities at specific locations, the concentrations and durations of any potential diesel PM exposure would be limited. Although Alternative 1 would result in outdoor recreational facilities, such as pool facilities, these would be mainly utilized by occupants of transient lodging provided by the proposed lodge.

During operations, mobile-sources, including diesel-fueled delivery trucks, would decrease under Alternative 1 from existing conditions, as presented in Impact 11-3. Use of diesel-fueled would likely remain unchanged from existing conditions. Considering the relatively low mass of diesel PM emissions that would be generated primarily from equipment during the construction of Alternative 1 shown in Table 11-5, the relatively short duration of construction activity, decreased mobile activity during operations, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of diesel PM; construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index greater than 1.0. This would be a **less-than-significant** impact.

Alternative 2: Reduced Scale Lodge

Alternative 2 would result in fewer TAUs and building area than under Alternative 1, resulting in fewer construction and operational emissions than Alternative 1. However, for the same reasons identified in Alternative 1, construction and operational emissions of TACs associated with Alternative 2 would be **less than significant**.

Alternative 3: Reduced Height Lodge

Alternative 3 would result in the same number of TAUs and similar building area as Alternative 1. For the same reasons identified in Alternative 1, construction and operational emissions of TAC's associated with Alternative 3 would be **less than significant**.

Alternative 4: No Project

The No Project alternative would continue operation of the existing commercial land use which would include a foreseeable renovation with no change in building square footage. Although no major construction activity would take place, renovation could increase occupancy, which would result in an increase in mobile-source emissions, including those from diesel delivery trucks, to the site during operations over existing conditions. Based on the modeling conducted and as presented in Table 11-17, Alternative 4 would result in an increase of approximately 0.5 lb/day of PM_{2.5}. However, diesel truck deliveries are anticipated to be infrequent and would generate less daily emissions than during construction. Thus, this impact would be **less than significant**.

Mitigation Measure 11-5: Reduce short-term construction-generated TAC emissions

Mitigation Measure 11-5 is required for Area Plan Alternatives 1, 2, and 3.

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 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.

Significance after Mitigation

Implementation of Mitigation Measure 11-5 and conformity with TRPA Best Construction Practices Policy would reduce diesel equipment exhaust emissions and limit exposure of sensitive receptors to TAC emissions during construction. These actions would substantially reduce construction-generated emissions of TACs to less than PCAPCD's significance criteria. Therefore, this impact would be mitigated to a **less-than-significant** level for Alternatives 1, 2, and 3.

Mitigation cannot be required for Area Plan Alternative 4 because it is the no-action alternative. Because construction of projects under Area Plan Alternative 4 could potentially result in the exposure of nearby sensitive receptors to concentrations of TACs that would exceed PCAPCD significance criteria. This impact would be **significant an unavoidable** for Area Plan Alternative 4.

Impact 11-6: Exposure to excessive odorous emissions

None of the Area Plan alternatives include goals, policies, or implementation measures that would change the nature, location, size, or operation of any odor-producing use or facility in the Plan area. No changes in land use designation or zoning are proposed that would result in placement of sensitive receptors nearer any such odor-generating facilities. Also, neither construction nor operation of projects that may be developed as a result of authorization of additional allocations for residential, commercial, or tourist uses, including any of the lodge alternatives, would be expected to create objectionable odors affecting a substantial number of people. This impact would be **less than significant** for all of the Area Plan alternatives and all of the lodge alternatives.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Placer County Tahoe Basin Area Plan Program-Level Analysis

Area Plan Alternatives 1 through 4

None of the Area Plan alternatives would result in major sources of odor because they would not include or contemplate construction of any of the common types of facilities that are known to produce odors (e.g., landfills, wastewater treatment facilities). In addition, no known substantial sources of objectionable odors are located in the region. Diesel exhaust from the use of on-site construction equipment would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. Thus, neither project construction nor operation of Alternative 1 would create objectionable odors affecting a substantial number of people, nor would Alternative 1 result in the siting of sensitive receptors in proximity to an odor source. As a result, this impact would be **less than significant** for all the Area Plan alternatives.

Tahoe City Lodge Project-Level Analysis

Lodge Alternatives 1 through 4

Minor odors from the use of heavy duty diesel equipment and the laying of asphalt during demolition, construction, and/or renovation of the Tahoe City Lodge would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. The proposed lodge would not introduce any new odor sources at the project site. Some odorous emission may be associated with operation of the proposed hotel restaurant or the restaurant at the golf course clubhouse; however, this type of source is not atypical for a commercial area and is not anticipated be unlike the existing restaurant and clubhouse that currently operate at the site. Moreover, the lodge alternatives would not have major sources of odor or types of facilities that commonly generate odor complaints such as a landfill, coffee roaster, or wastewater treatment facility. In addition, operation of the lodge alternatives would not result in locating sensitive receptors near an existing odor source. Thus, implementation of the lodge alternatives would not create objectionable odors affecting a substantial number of people. As a result, this impact would be considered **less than significant** for Lodge Alternatives 1 through 4.

Mitigation Measures

No mitigation is required.

Impact 11-7: Atmospheric deposition of NO_x and phosphorus

Implementation of all of the Area Plan alternatives would not substantially affect the reduction in NO_x emissions anticipated under the Regional Plan, which are mostly associated with NO_x reductions from mobile-sources. The foreseeable reductions under the RPU in mobile-source NO_x are attributable to increased vehicle emissions control requirements. Mobile-source emissions of NO_x are also a major component of the deposition of atmospheric nitrogen into Lake Tahoe. Thus, all of the Area Plan alternatives would be consistent with performance standards for atmospheric nitrogen deposition and would promote attainment of thresholds for atmospheric deposition. This impact would be **less than significant** for all the Area Plan alternatives.

The program-level analysis for the Area Plan Alternatives tiers from the analysis in the RPU EIS. The RPU EIS concluded that the RPU would result less than significant impacts associated with atmospheric deposition (TRPA 2012:3.4-43).

Deposition of nitrogen and phosphorus from the atmosphere into Lake Tahoe impairs lake clarity. TRPA adopted a threshold indicator for nitrogen deposition to the Lake related to total maximum daily load (TMDL) requirements from EPA for nitrogen (LRWQCB 2011). A phosphorus threshold standard has not been developed by TRPA at this time. The TMDL also relies on TMPO and TRPA air quality and transportation plans to manage the load of nitrogen to the atmosphere from mobile sources. This management is expected to reduce the basin-wide nitrogen load by at least 14 percent below 2010 levels by 2030. In addition, TRPA, as mandated by the Bi-State-Compact, has a management standard for atmospheric nitrogen that aims to reduce dissolved inorganic nitrogen loading to Lake Tahoe from atmospheric sources by approximately 20 percent of the 1973–1981 annual average.

Because detailed models are not available to accurately predict atmospheric nitrogen deposition throughout the Tahoe region, this analysis assumes that NO_x emission levels serve as a proxy for atmospheric nitrogen. This assumption is based on the following information that relates nitrogen deposition to in-basin mobile sources. Studies show that more than half of annual nitrogen loading to the Lake comes from atmospheric deposition and, of the atmospheric nitrogen, approximately 88 percent is estimated to be emitted by mobile sources within the LTAB (Reuter and Miller 2000, Bytnerowicz et al. 2004, Dolislager et al. 2012, Gertler et al. 2006, ARB 2009). Further detail related to background of atmospheric deposition into Lake Tahoe is explained in Impact 3.4-7 of the RPU EIS. Results of NO_x emissions modeling are summarized below.

Placer County Tahoe Basin Area Plan Program-Level Analysis

Alternative 1: Proposed Area Plan

Under the Regional Plan, emissions of NO_x in the LTAB would decrease over time from 2010 to the plan's build-out in 2035 by 754 tons per year, or 4,134 pounds per day, as shown in Table 11-8. Under Alternative 1, NO_x emissions in the LTAB would decrease from 2015 to 2035 by 760 tons per year, or 4,163 pounds per day, as shown in Table 11-10 (see Impact 11-3).

Thus, the impact of Alternative 1 on NO_x deposition would not result in impacts more severe than what was analyzed in the RPU EIS. Moreover, Alternative 1 would be expected to contribute to achievement and maintenance of the threshold standard for atmospheric NO_x deposition. This impact would be **less than significant**.

Alternative 2: Area Plan with No Substitute Standards/Reduced Scale Lodge

Under the Regional Plan, emissions of NO_x would decrease overtime from 2010 to the plan's build-out in 2035 by 754 tons per year, or 4,134 pounds per day, as shown in Table 11-8. Under Alternative 2, NO_x emissions in the LTAB would decrease from 2015 to 2035 by 760 tons per year, or 4,163 pounds per day, as shown in Table 11-11 (see Impact 11-3).

Thus, the impact of Alternative 2 on NO_x deposition would not result in impacts more severe than what was analyzed in the RPU EIS. Moreover, Alternative 2 would be expected to contribute to achievement and maintenance of the threshold standard for atmospheric NO_x deposition. This impact would be **less than significant**.

Alternative 3: Reduced Intensity Area Plan/Reduced Height Lodge

Under the Regional Plan, emissions of NO_x would decrease overtime from 2010 to the plan's build-out in 2035 by 754 tons per year, or 4,134 pounds per day, as shown in Table 11-8. Under Alternative 2, NO_x emissions in the LTAB would decrease from 2015 to 2035 by 760 tons per year, or 4,163 pounds per day, as shown in Table 11-12 (see Impact 11-3).

Thus, the impact of Alternative 3 on NO_x deposition would not result in impacts more severe than what was analyzed in the RPU EIS. Moreover, Alternative 3 would be expected to contribute to achievement and maintenance of the threshold standard for atmospheric NO_x deposition. This impact would be **less than significant**.

Alternative 4: No Project

Alternative 4 would include the development allocations authorized in the Regional Plan but without any of the changes proposed in the Area Plan. However, Alternative 4 would still result in less VMT than under the RPU (see Table 11-9). Under Alternative 4, NO_x emissions in the LTAB would decrease from 2015 to 2035 by 760 tons per year, or 4,163 pounds per day, as shown in Table 11-13 (see Impact 11-3).

Thus, the impact of Alternative 4 on NO_x deposition would not result in impacts more severe than what was analyzed in the RPU EIS. Also, Alternative 4 would be expected to contribute to achievement and maintenance of the threshold standard for atmospheric NO_x deposition. This impact would be **less than significant**.

Tahoe City Lodge Project-Level Analysis

Alternative 1: Proposed Lodge

As shown in Table 11-14, Alternative 1 would increase NO_x emissions from existing conditions by approximately 4.3 pounds per day. Despite this increase, the land use proposed at the Tahoe City Lodge site is consistent with the Area Plan. Because the Area Plan, under Alternative 1, would not inhibit the overall reduction of NO_x emissions in the Tahoe region from 2015 to 2035, the impact of the proposed lodge on the NO_x deposition standard would be **less than significant**.

Alternative 2: Reduced Scale Lodge

As shown in Table 11-15, Alternative 2 would decrease NO_x emissions from existing conditions by 3.5 pounds per day. Thus, the Reduced Scale Lodge would further reduce NO_x emissions in the Tahoe region, and the impact of Reduced Scale Lodge on the NO_x deposition standard would be **less than significant**.

Alternative 3: Reduced Height Lodge

As shown in Table 11-16, Alternative 3 would increase NO_x emissions from existing conditions by 4.3 pounds per day. Despite this increase, the land use proposed at the Tahoe City Lodge site is consistent with the Area Plan. Because the Area Plan, under Alternative 3, would not inhibit the overall reduction of NO_x emissions in the Tahoe region from 2015 to 2035, the impact of the Reduced Height Lodge on the NO_x deposition standard would be **less than significant**.

Alternative 4: No Project

As shown in Table 11-17, Alternative 4 would increase NO_x emissions from existing conditions by 11.33 pounds per day. Despite this increase, the existing land use at the Tahoe City Lodge site is consistent with allocations allowed under the current Regional Plan. As presented in Impact 11-3, the No Project alternative, at the plan-level, would not inhibit the overall reduction of NO_x emissions in the Tahoe region from 2015 to 2035. Thus, the impact of No Project alternative on the NO_x deposition standard would be **less than significant**.

Mitigation Measures

No mitigation is required.