3.13 AIR QUALITY

This section 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 US 50/South Shore Community Revitalization Project. The methods of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions are consistent with the recommendations of applicable regulatory agencies. In addition, mitigation measures are recommended as necessary to reduce significant air quality impacts.

One comment was received on the Notice of Preparation (NOP)/Notice of Intent (NOI) that expressed concern that future congestion, because of development, would occur at the realigned US 50 loop and conflict with applicable air quality thresholds. All applicable air quality thresholds were considered in this analysis and used to evaluate air emissions from the project.

Operational-related emissions would primarily be associated with mobile-sources (e.g., as a function of vehicle miles traveled [VMT] and trip generation from land-use development). These impacts are addressed below in Impact 3.13-2, Consistency with air quality plans and regional transportation conformity. However, with build Alternatives B, C, and D, the addition of the mixed-use development sites would result in operational area-source emissions associated with certain sources such as fireplaces/woodstoves, the use of consumer products, landscape maintenance equipment, and application of architectural coatings to buildings and parking lots. Because the proposed mixed-use development sites would replace existing residences and business planned to be displaced, the development of the mixed-use sites would not result in substantial new area-source emissions above existing conditions (i.e., no build Alternative A). Build Alternative E would not include new mixed-use development and therefore, similar to the No Build Alternative A, no increases in operational area sources would occur. This issue is not addressed further in this section and operational-related impacts to air quality focus on transportation-related emissions.

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally Occurring Asbestos (NOA) is located in many parts of California and is commonly associated with serpentine soils and rocks. The asbestos map of western El Dorado County (*Asbestos Review Areas, Western Slope, County of El Dorado, State of California;* El Dorado County 2005) shows the location of individual parcels and areas within the following four categories considered to be subject to elevated risk of containing NOA. Based on this map, the project site is not located within any of the areas known to contain NOA.

Asbestos may be contained in buildings/structures and could potentially be released during demolition of existing structures. However, air district rules and regulations are in place that would ensure the proper removal, handling, and disposal of materials potentially containing asbestos if it were to be discovered and therefore asbestos would not be released into the air. Section 3.12, “Hazards, Hazardous Materials, and Risk of Upset,” further evaluates the potential for asbestos exposure during demolition activities. This issue is not addressed further in this section.

Minor odors from the use of heavy duty diesel equipment and the laying of asphalt during construction activities would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. Construction-related odors would be considered temporary and minor. Land uses that are major sources of odor typically include wastewater treatment and pumping facilities, sanitary landfills, transfer stations, recycling and composting facilities, and various industrial uses such as chemical manufacturing and food processing. There are no major odor sources adjacent to or in the immediate vicinity of the project site. Further, El Dorado County Air Quality Management District (EDCAQMD) Rule 205-Nuisance is in place to protect citizens from harmful odors should they occur. This issue is not addressed further in this section.

3.13.1 Regulatory Setting

The US 50/South Shore Community Revitalization Project is located in portions of Douglas County, Nevada and the City of South Lake Tahoe in El Dorado County, California. The entire project site is in the Lake Tahoe Basin (Tahoe Basin).

The portion of the project site in California is part of the California Air Resources Board (ARB)-designated Lake Tahoe Air Basin (LTAB). The LTAB consists of the portions of the Tahoe Basin that are in the jurisdiction of either the EDCAQMD or the Placer County Air Pollution Control District (PCAPCD). For ARB-regulatory purposes, the LTAB does not include the Nevada side of the Tahoe Basin. Nonetheless, the geophysical, climatological, and meteorological characteristics of the Nevada side of the Tahoe Basin are similar to those of the California side.

Air quality in the LTAB, including the entire project site, is regulated by the U.S. Environmental Protection Agency (EPA) and the Tahoe Regional Planning Agency (TRPA). The California side of the project site is under the jurisdiction of ARB and EDCAQMD. The Nevada side of the project site is in the jurisdiction of the State of Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC) and Bureau of Air Quality Planning (BAQP). Each of these agencies develop rules, regulations, policies, and/or goals to comply with applicable regulation. Although EPA regulations may not be superseded, state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

EPA has been charged with implementing national air quality programs. The 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 in 1990.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 3.13-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead. The primary standards protect the public health and the secondary standards protect public welfare. Attainment status of the AAQS for the LTAB are shown below in Table 3.13-2.

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.

Table 3.13-1 Ambient Air Quality Standards and Attainment Status in the Lake Tahoe Air Basin

Pollutant	Averaging Time	California [1,2]	National [3]	
			Primary [2,4]	Secondary [2,5]
Ozone	1-hour	0.09 ppm (180 µg/m³)	–[5]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m³)	0.070 ppm (147 µg/m³)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	Same as primary standard
	8-hour	LTAB 6 ppm[6] (7 mg/m³)	9 ppm (10 mg/m³)	
Nitrogen dioxide (NO_2) [7]	Annual arithmetic mean	0.030 ppm (57 µg/m³)	53 ppb (100 µg/m³)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	–
Sulfur dioxide (SO_2)	Annual arithmetic mean	–	0.030 ppm	–
	24-hour	0.04 ppm (105 µg/m³)	0.14 ppm	
	3-hour	–	–	0.5 ppm (1300 µg/m³)
	1-hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	–
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m³	–	Same as primary standard
	24-hour	50 µg/m³	150 µg/m³	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
	24-hour	–	35 µg/m³	
Lead [7]	Calendar quarter	–	1.5 µg/m³	Same as primary standard
	30-Day average	1.5 µg/m³	–	–
	Rolling 3-Month Average	–	0.15 µg/m³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m³)	No national standards	
Sulfates	24-hour	25 µg/m³		
Vinyl chloride [7]	24-hour	0.01 ppm (26 µg/m³)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km statewide, and 0.07 per km in LTAB, respectively		

Notes: µg/m³ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million; LTAB = Lake Tahoe Air Basin

1 California standards for ozone, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

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

3 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 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.

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

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

6 Applicable in the Lake Tahoe Air Basin.

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

Sources: ARB 2016, EPA 2016a

Table 3.13-2 NAAQS/CAAQS Attainment Status of the Lake Tahoe Air Basin

Pollutant	State	Federal
O_3: 1-hour	Transitional Nonattainment	Not Applicable
O_3: 8-hour	Attainment	Attainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Not Applicable
SO_2	Attainment	Attainment
Lead	Attainment	Not Applicable
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Not Applicable	Attainment/Unclassified
All others	Attainment/Unclassified	Attainment/Unclassified

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; SO_2 = sulfur dioxide

Source: ARB 2015 and EPA 2016b

In addition, general conformity requirements were adopted by Congress as part of the CAAA and were implemented by EPA regulations in 1993, which were amended most recently in 2010. General conformity requires that all federal actions conform to the SIP as approved or promulgated by EPA. The purpose of the general conformity program is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain NAAQS. Before a federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, that are predicted to result from the action are taken into consideration. The location and quantity of emissions must be identified. If it is found that the action would create emissions above de minimus levels specified in EPA regulations, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO_2, O_3, PM_{10} and $PM_{2.5}$, and in some areas (although not in California), SO_2. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the CAA to be covered in transportation conformity analysis. Regional conformity is based on the emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the FTIP. RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the CAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the CAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project is the same as described in the RTP and FTIP, then the project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for CO and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the

standard may be officially re-designated to attainment by EPA, and are then called "maintenance" areas. "Hot-spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot-spot analysis. In general, projects must not cause the "hot-spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Hazardous Air Pollutants, Mobile Source Air Toxics, and Toxic Air Contaminants

EPA and ARB regulate hazardous air pollutants (HAPs) and toxic air contaminants (TAC), respectively, through statutes and regulations that generally require the use of the maximum available control technology (MACT) or best available control technology (BACT) for TAC 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.

Controlling air toxic emissions became a national priority with the passage of the CAA Amendments of 1990, whereby Congress mandated that the EPA regulate 188 air toxics. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (also known as Mobile Source Air Toxics Rule, Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System. In addition, the EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While the FHWA considers these seven compounds to be the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules. Collectively, these seven compounds are referred to as mobile source air toxics (MSAT).

In addition to the Mobile Source Air Toxics Rule discussed above, other standards expected to impact MSAT emissions include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014-2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017-2025 (79 FR 60344).

Federal Highway Administration

On October 18, 2016, FHWA published the Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, which supersedes previous guidance. This Updated Interim Guidance incorporates new analysis conducted using updated Motor Vehicle Emissions Simulator (MOVES2014a). The Updated Interim Guidance provides an update on the status of scientific research on air toxic and provides recommendations for discussion and content to be included in MSAT analyses for NEPA documentation. Specific FHWA guidance is included below in the Methods and Assumptions section.

TAHOE REGIONAL PLANNING AGENCY

The TRPA Regional Plan includes the following elements related to air quality: Environmental Threshold Carrying Capacities adopted in 1982 and evaluated every 5 years since 1991 (TRPA 2012a); Goals and Policies (Air Quality Subelement); and the TRPA Code of Ordinances.

Environmental Threshold Carrying Capacities

In August 1982, TRPA adopted Resolution No. 82-11, which included Environmental Threshold Carrying Capacities (threshold standards) related to air quality and other resource topics for the Lake Tahoe Region. TRPA conducts a comprehensive evaluation every 5 years to determine whether each threshold standard is being achieved and/or maintained, makes specific recommendations to address problem areas, and directs general planning efforts for the next 4-year period. The most recent evaluation was completed in 2016 (TRPA 2016).

TRPA threshold standards 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 threshold standards. The management standards include reducing particulate matter, maintaining levels of nitrogen oxides (NO_X), reducing traffic volumes on US 50, and reducing vehicle miles of travel (VMT). These threshold standards and associated management standards are described in more detail below. 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 region for which the standards are applicable. Attainment status and trends of each air quality indicator reporting categories are summarized in Table 3.13-3. Applicable threshold standards are summarized below.

AQ-1, Carbon Monoxide

- Numerical Standard: Maintain CO concentrations at or below 6 parts per million (ppm) averaged over 8 hours.

- Management Standard: Reduce traffic volumes on the US 50 corridor by 7 percent during the winter from the 1981 base year between 4:00 p.m. and 12:00 midnight, provided that those traffic volumes shall be amended as necessary to meet the respective state standards.

AQ-2, Ozone

- Numerical Standard: Maintain ozone concentration below 0.08 ppm averaged over 1 hour.
- Numerical Standard: Maintain NO_X emissions at or below the 1981 level.

AQ-3, Visibility

- Numerical Standards:
  - Achieve an extinction coefficient of 25 inverse mega meters (Mm^{-1}) at least 50 percent of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 156 kilometers, 97 miles).

  - Achieve an extinction coefficient of 34 Mm^{-1} at least 90 percent of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 115 kilometers, 71 miles). Calculations will be made on 3-year running periods. Beginning with the existing 1991-93 monitoring data as the performance standards to be met or exceeded.

  - Achieve an extinction coefficient of 50 Mm^{-1} at least 50 percent of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 78 kilometers, 48 miles).

- Achieve an extinction coefficient of 125 Mm^{-1} at least 90 percent of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 31 kilometers, 19 miles); and calculations will be made on 3-year running periods. Beginning with the existing 1991-93 monitoring data as the performance standards to be met or exceeded.

- PM_{10} 24-hour Standard – Maintain PM_{10} at or below 50 micrograms per cubic meter ($\mu g/m^3$) measured over a 24-hour period using gravimetric or beta attenuation methods or any equivalent procedure, which can be shown to provide equivalent results at or near the level of air quality standard.

- PM_{10} Annual Arithmetic Average – Maintain PM_{10} at or below annual arithmetic average of 20 $\mu g/m^3$ using gravimetric or beta attenuation methods or any equivalent procedure, which can be shown to provide equivalent results at or near the level of air quality standard.

- Particulate $Matter_{2.5}$ 24-hour Standard – Maintain $PM_{2.5}$ at or below 35 $\mu g/m^3$ measured over a 24-hour period using gravimetric or beta attenuation methods or any equivalent procedure, which can be shown to provide equivalent results at or near the level of air quality standard.

- Particulate $Matter_{2.5}$ Annual Arithmetic Average – Maintain $PM_{2.5}$ at or below annual arithmetic average of 12 $\mu g/m^3$ using gravimetric or beta attenuation methods or any equivalent procedure, which can be shown to provide equivalent results at or near the level of air quality standard.

AQ-4, Nitrate Deposition

- Management Standards:
  - Reduce the transport of nitrates into the Tahoe Basin and reduce NO_X produced in the Tahoe Basin consistent with the water quality thresholds.

  - Reduce VMT in the Tahoe Basin by 10 percent of the 1981 base year values.

AQ-5, Odor

- Policy Statement
  - It is the policy of the TRPA Governing Board in the development of the Regional Plan to reduce fumes from diesel engines to the extent possible.

Lake Tahoe Regional Plan

Several components of the Lake Tahoe Regional Plan address policies and regulations pertaining to air quality: Goals and Policies, Code of Ordinances, Mobility 2035, Area Plans, and a best construction practices policy.

Goals and Policies

The Goals and Policies are designed to achieve and maintain adopted environmental threshold standards and are implemented through the TRPA Code, the Environmental Improvement Program (EIP), and the Transportation Improvement Plan (with the Tahoe Metropolitan Planning Organization). The Land Use Element (Chapter 4) of the Goals and Policies document consists of seven subelements, one of which is the Air Quality Subelement, with a goal to attain and maintain air quality at healthy levels (Goal AQ-1). This goal is to be accomplished in several ways such as to reduce or limit sources of pollutants that degrade visibility (Policy AQ-1.2), encourage the reduction of emissions from vehicles and motorized machinery (Policy AQ-1.3), promote the reduction of air quality impacts from construction (Policy AQ-1.7). The full text of these goals and policies, along with a discussion of the project's consistency with the goals and policies, is included in Appendix E, "Land Use Policy Consistency Table."

Table 3.13-3 TRPA Air Quality Indicator Attainment Status and Trends

Threshold Indicator Reporting Category	1991 Attainment Status	1996 Attainment Status	2001 Attainment Status	2006 Attainment Status	Threshold Standards[1]	2011 Attainment Status[2]	2015 Attainment Status	Trend
Carbon monoxide (CO)	Non-attainment	Attainment	Attainment	Non-attainment	Highest 1-hour Concentration of Carbon Monoxide	Considerably better than target	Considerably better than target	Moderate improvement
					Highest 8-hour Average Concentration of Carbon Monoxide	Considerably better than target	Considerably better than target	Moderate improvement
					Average Daily Winter Traffic Volume, Presidents Weekend	At or somewhat better than target	Considerably better than target	Moderate improvement
Ozone	Non-attainment	Non-attainment	Non-attainment	Non-attainment	Highest 1-hour Average Concentration of Ozone	At or somewhat better than target	At or somewhat better than target	Moderate improvement
					Highest 8-hour Average Concentration of Ozone	At or somewhat better than target	Somewhat worse than target	Moderate improvement
					3 Year Average of the 4th Highest 8-hour Concentration of Ozone	At or somewhat better than target	At or somewhat better than target	Moderate improvement
					Oxides of Nitrogen Emissions	At or somewhat better than target	Considerably better than target	Moderate improvement
Visibility	Attainment	Non-attainment	Non-attainment	Attainment	Regional Visibility			
					Regional Visibility 50th Percentile ("Average Visibility Days")	At or somewhat better than target	At or somewhat better than target	Little or no change
					Regional Visibility 90th Percentile ("Worst Visibility Days")	At or somewhat better than target	At or somewhat better than target	Little or no change
					Subregional Visibility			
					Subregional Visibility 50th Percentile ("Average Visibility Days")	Insufficient data to determine status	Insufficient data to determine status	Insufficient data to determine trend
					Subregional Visibility 90th Percentile ("Worst Visibility Days")	Insufficient data to determine status	Insufficient data to determine status	Insufficient data to determine trend
Particulate matter	Non-attainment	Non-attainment	Attainment	Non-attainment	Highest 24-hour PM_{10} Concentration	Somewhat worse than target	Somewhat worse than target	Little or no change
					Annual Average PM_{10} Concentration	Insufficient data to determine status	Considerably better than target	Moderate improvement
					24-hour $PM_{2.5}$ Concentration	Considerably better than target	At or somewhat better than target	Little or no change
					Annual Average $PM_{2.5}$ Concentration	Considerably better than target	Considerably better than target	Little or no change
Nitrate deposition	Unknown	Unknown	Unknown	Unknown	Reduce generation and transport of nitrate to achieve water quality standards	Implemented[3]	Implemented[3]	Unknown
					Vehicle Miles Traveled (VMT)	At or somewhat better than target	At or somewhat better than target	Moderate improvement
Odor	No Designation	No Designation	No Designation	No Designation	Reduce diesel engine fumes	Implemented[3]	Implemented[3]	Unknown

Notes:
[1] In the 2015 Threshold Evaluation, attainment status was no longer provided for the Threshold Indicator Reporting Category and instead was provided for each threshold standard; therefore, attainment status is provided for each threshold standard for the 2011 Threshold Evaluation and 2015 Threshold Evaluation as a basis of comparison.
[2] Change in terminology occurred in 2011 Threshold Evaluation.
[3] "Implemented" refers to implementation of a management standard rather than monitoring the achievement of a numerical standard.
Source: TRPA 2007:2-8; TRPA 2016:3-8 – 3-9

TRPA has jurisdiction within the LTAB portion of El Dorado County and Douglas County in regard to air quality. Therefore, the Air Quality Subelement of the Goals and Policies document has focused on achieving the NAAQS and CAAQS, as well as special TRPA-adopted regional and sub-regional visibility standards, and on reducing the deposition of nitrate from NO_X emitted by vehicles. The TRPA Code and the Regional Transportation Plan (RTP) contain specific measures designed to monitor and achieve the air quality objectives of the Regional Plan.

Code of Ordinances

Applicable provisions of Chapter 65 (Air Quality and Transportation) of the TRPA Code (TRPA 2012b) are described below.

Chapter 65.1—Air Quality Control

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

- Section 65.1.3, "Vehicle Inspection and Maintenance Program," states that to avoid duplication of effort in implementation of an inspection/maintenance program for certain vehicles registered in the CO nonattainment area, TRPA shall work with the affected state agencies to plan for applying state inspection/maintenance programs to the Tahoe Region.

- 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).

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 Tahoe Basin. Important directions of the plan are to reduce the overall environmental impact of transportation in the Tahoe Region, create walkable, vibrant communities, and provide real alternatives to driving. The plan also supported an update of the Transportation Element of the TRPA) Regional Plan. Finally, the plan met the challenge of California's Senate Bill 375 by presenting an integrated land use and transportation strategy that will allow the Tahoe Region to achieve targets for reducing greenhouse gas (GHG) emissions by 2035.

The 2017 Regional Transportation Plan (2017 RTP), which is an update to the 2012 RTP, and its joint CEQA/TRPA environmental document have been circulated for public review. The vision and goals of the 2017 RTP were based on the 2012 RTP. The projects listed in the 2017 RTP are substantially similar to those in the 2012 RTP, and the US 50/South Shore Community Revitalization Project is included in both documents.

Although the draft 2017 RTP has been released for public review, and includes the US 50/South Shore Community Revitalization Project, the 2012 RTP/SCS is the currently adopted plan. Because an initial study/initial environmental checklist (IS/IEC) has been prepared for the 2017 RTP as a supplement to the RTP/SCS Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and does not result in new significant environmental impacts, the analysis below continues to rely on the 2012 RTP/SCS EIR/EIS.

Area Plans

The project site is within the Tourist Core Area Plan (TCAP) and the South Shore Area Plan (SSAP). The TCAP includes a goal to reduce air emissions in the Tourist Core (Goal NCR-5 Air Quality) and a policy to achieve this goal that requires implementation of dust and exhaust emissions controls for construction projects (Policy NCR-5.1). The South Shore Area Plan does not have specific goals or policies in place for reducing air quality but does acknowledge the importance of maintaining healthy air quality in the plan area.

Construction Practices Policy for Construction Emissions

TRPA coordinates implementation of its Best Construction Practices Policy for Construction Emissions through TRPA-approved plans, project-permitting, or projects/programs developed in coordination with local or other governments that require, as a condition of project approval, implementation of feasible measures and best management practices (BMPs) to reduce construction-generated emissions to the extent feasible. TRPA developed its Best Construction Practices Policy (approved by the TRPA Governing Board on November 13, 2013) pursuant to Mitigation Measure 3.4-2 of the RTP EIR/EIS and Mitigation Measure 3.4-2 of the Regional Plan Update EIS.

TRPA's Best Construction Practices Policy for Construction Emissions includes the following measures applicable to the project (TRPA 2013):

- Fugitive dust shall not exceed 40 percent opacity and not go beyond the property boundary at any time during project construction.
- No open burning of removed vegetation shall occur during infrastructure improvements.
- Minimize idling time to 5 minutes in California and 15 minutes in Nevada for all diesel-power equipment (refer to TRPA Code Section 65.1.8, "Idling Restrictions," for all idling restrictions).
- Apply water to control dust as needed to prevent dust impacts offsite. Operational water truck(s) shall be onsite, as required, to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked offsite.
- Apply approved chemical soil stabilizers, vegetative mats, or other appropriate BMPs to manufacturer's specifications, to all inactive construction areas (previously graded areas which remain inactive for 96 hours). Spread soil binders on unpaved roads and employee/equipment parking areas and wet broom or wash streets if silt is carried over to adjacent public thoroughfares.
- Utilize existing power sources (e.g., power poles) or clean-fuel generators rather than temporary diesel power generators, wherever feasible.

STATE

California

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 (California Ambient Air Quality Standards [CAAQS]; Table 3.13-1).

Criteria Air Pollutants

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

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act 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

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for 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 PM, and adopted EPA's list of HAPs as TACs.

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

ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011). Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated-gasoline regulations) and control technologies.

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

Nevada

At the state level, the Nevada BAPC and BAQP are the agencies responsible for coordination and oversight of state air pollution control programs, including the Chemical Accident Prevention Program (CAPP), and air quality surveillance in Nevada. The authority for the BAPC and BAQP to implement air pollution control programs is drawn from the Nevada Revised Statutes (NRS) 445B.100 through 445B.825 and 486A.010 through 486A.180. The agencies achieve and maintain air quality conditions in Douglas 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 the BAPC and BAQP includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAPC and BAQP also oversee compliance with Nevada and federal laws; prepare SIPs; conduct inspections; observe and review source test data, excess emission reports, and compliance certification reports; investigate air quality complaints; operate an ambient air quality monitoring network; develop and implement strategies to control air pollution from motor vehicles, convert motor vehicle fleets to use cleaner-burning alternative fuels; and coordinate and facilitate prescribed outdoor burning.

LOCAL

El Dorado County Air Quality Management District

Criteria Air Pollutants

EDCAQMD attains and maintains air quality conditions in El Dorado 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 EDCAQMD 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. EDCAQMD 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 El Dorado County, including those in the City of South Lake Tahoe, are subject to adopted EDCAQMD rules and regulations in effect at the time of construction. Specific EDCAQMD rules applicable to the construction of the project may include but are not limited to the following:

- Rule 202—Visible Emissions,
- Rule 215—Application of Architectural Coatings,
- Rule 223-1—Fugitive Dust,
- Rule 223-2—Asbestos,
- Rule 224—Cutback and Emulsified Asphalt Paving Materials, and
- Rule 501—Permit Requirements.

Specifically, Rule 223-1 establishes standards to be met by project activities generating fugitive dust. It applies to all of El Dorado County and addresses fugitive dust generated by construction and grading activities, and by other land uses including recreation uses. Among the standards to be met is a prohibition on visible dust crossing the property boundary, generation of high levels of visible dust (dust sufficient to obscure vision by 40 percent), and controls on the track-out of dirt and mud on to public roads. The regulation also establishes minimum dust mitigation and control requirements. When an area to be disturbed is greater than 1 acre, and if required by a project condition of approval or discretionary permit, a dust control plan must be submitted to and approved by EDCAQMD before any construction activities. Further, Rule 223-2 requires activities to reduce asbestos dust created from earth moving activities.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce ARB's airborne toxic control measures. Under EDCAQMD Rule 501 ("Permit Requirements"), EDCAQMD Rule 523 ("New Source Review"), and EDCAQMD Rule 522, ("Federal Operating Permit") all sources that have the potential to emit TACs are required to obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. EDCAQMD limits emissions and public exposure to TACs through a number of programs.

City of South Lake Tahoe General Plan

The City of South Lake Tahoe adopted the 2030 General Plan on May 17, 2011. The Natural and Cultural Resources Element of the General Plan provides city-wide goals and polices aimed at improving air quality (City of South Lake Tahoe 2011) that are applicable to the build alternatives, including a goal to incorporate air quality improvements and emission reductions directly with land use and transportation planning (Goal NCR-5) and a policy to incorporate mitigation for projects that have significant construction emissions (Policy NCR-5.10). The full text of this goal and policy, along with a discussion of the project's consistency with this goal and policy, is included in Appendix E, "Land Use Policy Consistency Table."

Douglas County Master Plan

Douglas County adopted a twenty-year Master Plan in 1996. The Master Plan, or Comprehensive Plan, is required by Nevada Revised Statutes (Chapter 278.150) for the purpose of providing long-term guidance on

the development of cities, counties, and regions in Nevada. The 15 Year Update of the Douglas County Master Plan (2011) was adopted by the Douglas County Board of Commissioners on March 1, 2012.

The Environmental Resources and Conservation Element of the plan includes goals and policies/actions aimed at improving air quality within the County, including a goal to maintain and improve existing air quality (ERC Goal 13) and an action to establish standards for roadway surfacing and maintenance which reduces dust generation (ERC Action 13.3). A discussion of the project's consistency with this goal and policy, is included in Appendix E, "Land Use Policy Consistency Table."

3.13.2 Affected Environment

The project site and study area are located in the LTAB. The LTAB comprises portions of El Dorado and Placer counties on the California side of the Lake Tahoe Basin, and Washoe County, Douglas County, and the Carson City Rural District on the Nevada side.

Ambient concentrations of air pollutants are determined by the amount of pollutants emitted and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the LTAB are determined by such natural factors as climate, meteorology, and topography, in addition to the level of emissions released by existing air pollutant sources. These factors are discussed separately below.

CLIMATE, METEOROLOGY, AND TOPOGRAPHY

Lake Tahoe lies in a topographic depression between the crests of the Sierra Nevada and Carson ranges on the California-Nevada border at a surface elevation of approximately 6,260 feet above mean sea level. The LTAB is defined by the 7,000-foot contour, which is continuous around the Lake, except near Tahoe City. The mountains surrounding the Lake are approximately 8,000 to 9,000 feet in height on average, with some reaching 10,000 feet.

Pollutants from local sources are trapped by frequent inversions in the LTAB, greatly limiting the volume of air into which the pollutants are mixed (e.g., diluted), which results in accumulation and elevated concentrations of pollutants. A second important meteorological regime is the transport of pollutants from the Sacramento Valley and San Francisco Bay Area because winds from these areas move upslope in the Sierra Nevada and the Lake is located directly east of the Sierra Nevada crest (Cahill and Cliff 2000:1).

The project site generally experiences warm, dry summers and wet, snowy winters. Maximum temperatures occur during July and reach 78 degrees Fahrenheit on average. Minimum temperatures can be as low as 23 degrees Fahrenheit during winter months (WRCC 2016a). Average annual precipitation of approximately 12.9 inches (63.5 inches of snowfall) occurs primarily during the months of November through March and average annual wind speed is 6.1 miles per hour from the south in South Lake Tahoe (WRCC 2016b).

CRITERIA AIR POLLUTANTS

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants is provided below, including emission source types and health effects. For descriptions of health effects, "acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations whereas "chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Ozone

Ozone is a photochemical oxidant (a molecule whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels (EPA 2016c).

Emissions of the ozone precursors ROG and NO_X have decreased in California over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_X decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (ARB 2014).

Acute health effects include cough, chest pain, shortness of breath, and throat/airway inflammation. Chronic health effects include reduced lung function, worsening of existing condition such as bronchitis, emphysema, and asthma (EPA 2016c).

Carbon Monoxide

CO is a colorless, odorless gas produced by incomplete combustion of fuels (i.e., motor vehicle exhaust). Acute health effects include headache, dizziness, fatigue, nausea, vomiting, and eventually death. Chronic health effects include permanent heart and brain damage (EPA 2016c).

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NO_X). NO_2 primarily gets in the air from the burning of fuel. NO_2 forms from emissions from cars, trucks and buses, power plants, and off-road equipment (EPA 2016c). Acute health effects include respiratory diseases, particularly asthma, leading to respiratory symptoms such as coughing, wheezing, or difficulty breathing. Chronic health effects include development of asthma and potential increased susceptibility to respiratory infection (EPA 2016c).

Sulfur Dioxide

Sulfur dioxide (SO_2) is gaseous compound of sulfur and oxygen. Sources of SO_2 include coal and oil combustion, refineries, and other processes such as extracting metal from ore Acute health effects include irritation of upper respiratory tract and difficulty breathing (EPA 2016c).

Particulate Matter

Particulate matter (PM) with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. This size particle is of concern because it is small enough to reach deep into the lungs. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (ARB 2014). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} and $PM_{2.5}$ emissions are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion (ARB 2014). Direct emissions of PM_{10} in California have increased slightly over the last 20 years, and are projected to continue to increase slightly through 2035 (ARB 2014:3-7). $PM_{2.5}$ emissions have remained relatively steady over the last 20 years and are projected to decrease slightly through 2035 (ARB 2014:3-6). Acute health risks include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic effects include alterations to the immune system and cancer formation.

MONITORING STATION DATA

Concentrations of criteria air pollutants are measured at several monitoring stations near the project site. The Echo Summit Station in Nebelhorn, located approximately 11 miles to the southwest, is the closest monitoring station to the project site with recent data for ozone. The nearest monitoring station with recent data for PM_{10} is the South Lake Tahoe-Sandy Way station, which is located approximately 2 miles to the west of the project site. In general, the measurements of ambient air quality from the monitoring stations at the Echo Summit Station, Truckee Station, and South Lake Tahoe Station are the most representative of the air quality at the project site. Table 3.13-4 summarizes the air quality data from these stations from 2011 through 2014.

Table 3.13-4 Summary of Annual Air Quality Data (2011–2014)

Ozone [1]	2011	2012	2013	2014
Maximum concentration (1-hour/8-hour, ppm)	0.108/0.071	0.084/0.077	0.082/0.076	0.081/0.072
Number of days state standard exceeded (1-hour/8-hour)	1/1	0/11	0/1	0/2
Number of days national standard exceeded (8-hour)	0	1	0	0
Respirable Particulate Matter (PM_{10}) [2]	**2011**	**2012**	**2013**	**2014**
Maximum Concentration (µg/m[3])	55.8	84.1	139.3	58.6
Number of days state standard exceeded (measured [3])	3	4	4	2
Number of days national standard exceeded (measured [3])	*	*	*	0
Fine Particulate Matter ($PM_{2.5}$) [4]	**2011**	**2012**	**2013**	**2014**
Maximum Concentration (µg/m[3])	68.9	27.5	61.2	253.0
Annual Average (µg/m[3])	*	11.0	*	14.3
Number of days national standard exceeded (measured [3])	0	0	0	0

Notes: µg/m[3] = micrograms per cubic meter; ppm = parts per million; * = Insufficient data to determine the value; N/A = not available

1 Data from the Echo Summit Station in Nebelhorn.

2 Data from the South Lake Tahoe – Sandy Way Station.

3 Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. The number of days above the standard is not necessarily the number of violations of the standard for the year.

4 Data from the Truckee Fire Station.

Sources: ARB 2015b, ARB 2015c, ARB 2015d.

In 2013, TRPA installed a CO monitor at their monitoring station at 128 Market Street in Stateline, Nevada. Existing conditions with regards to CO are characterized in TRPA's *2015 Threshold Evaluation* (TRPA 2016). The threshold evaluation uses three separate indicators to evaluate CO in the LTAB—the 1-hour CAAQS of 20 ppm; the 8-hour CAAQS of 6 ppm; and winter traffic volumes. The LTAB has been in compliance with the 1- and 8-hour CAAQSs since 1983 and 2003, respectively. The most recent threshold evaluation determined that the 1- and 8-hour CAAQS are "considerably better than target" and continuing to improve moderately with a moderate level of confidence. It also determined that winter traffic volumes are "considerately better than target" and this indicator has had "moderate improvement" since 1980 with a moderate level of confidence.

The EPA and ARB use monitoring data, such as that provided in Table 3.13-4, to designate areas according to their attainment status for criteria air pollutants. 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 areas that cannot be classified on the basis of available information as meeting or not meeting the standards. The current national and state attainment designations for the LTAB are shown above in Table 3.13-2 for each criteria air pollutant. Ambient air quality standards define clean air and are established to protect even the most sensitive individuals in communities. An air quality standard defines the maximum amount of a pollutant that can be present in outdoor air without harm to public health.

TOXIC AIR CONTAMINANTS

Concentrations of TACs are also used to indicate the quality of ambient air. A TAC is an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in trace quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the *California Almanac of Emissions and Air Quality* (ARB 2014), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. 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.

Sources of TACs vary considerably and include (but are not limited to) consumer products, gasoline dispensing stations, auto repair and auto body coating shops, dry cleaning establishments, chrome plating and anodizing shops, welding operations, and other stationary sources. Major sources of TACs in the vicinity of the project site are highways and roadways associated with the presence of diesel PM emissions from vehicle exhaust. US 50 and other local roadways are the primary source of TACs in the study area.

The Mobile Source Air Toxics Rule includes new standards as of 2011 that will decrease MSAT emissions through nationwide use of cleaner fuels and engines. Specifically, fuel refiners must meet lower gasoline benzene and non-methane hydrocarbon content. As a result of these standards, passenger vehicles will emit 45 percent less benzene, a direct reduction in $PM_{2.5}$ emissions. Based on emissions modeling conducted by FHWA, diesel PM is the dominant MSAT of concern for highway projects (FHWA 2016).

SENSITIVE LAND USES

Sensitive land uses are generally considered to include those uses where exposure to pollutants could result in health-related risks to individuals. Residential dwellings and places where people recreate or congregate for extended periods of time such as parks or schools are of primary concern because of the potential for increased and prolonged exposure of individuals to pollutants. Existing sensitive land uses near the project side include single family homes, multi-family homes, and vacation rentals in the area east of Pioneer Trail, west of Montreal Road, and south of the Village Center. The Bright Beginnings Preschool and Tahoe Douglas Christian Preschool are located approximately a half-mile from the northern end of the project site.

3.13.3 Environmental Consequences

METHODS AND ASSUMPTIONS

Short-term construction-related emissions of criteria air pollutants and precursors were calculated using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Roadway Construction Emissions Model (Version 8.1.0), and the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program (California Air Pollution Control Officers Association [CAPCOA] 2016), as recommended by EDCAQMD and other air districts in California. Modeling was based on project-specific information (e.g., length of road, area to be graded, and area to be paved), where available; reasonable assumptions based on typical construction activities; and default values that are based on the project's location and land use type. The modeling conservatively assumed that project construction/grading phases could begin as early as 2017 with final project completion for transportation improvements occurring by 2020. The potential redevelopment of the mixed-use development sites was conservatively assumed to occur simultaneously with the transportation improvements to evaluate maximum potential emissions. To model maximum construction emissions from the mixed-use sites, it was conservatively assumed that two of the three sites

could be constructed simultaneously. For a detailed description of model input and output parameters and assumptions, refer to Appendix J.

Operational-related emissions of criteria air pollutants and precursors was evaluated qualitatively by comparing the project to already adopted, applicable air quality plans in the region. The evaluation was based on information and traffic volumes available in the most recent traffic study completed for the project (Wood Rogers 2016).

The potential for project-generated traffic to result in concentrations of CO that exceed the NAAQS and CAAQS for this pollutant was evaluated using EDCAQMD-recommended screening criteria. Because EDCAQMD has not developed conservative screening methods for CO, the potential for CO hot-spots was further evaluated using a quantitative screening method recommended by SMAQMD as described in Impact 3.13-3, below.

Health 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 land uses developed under the project relative to onsite sensitive receptors as subsequent phases are built, as well as the duration during which TAC exposure would occur. Guidance for MSAT/TACs analysis is available from numerous agencies. The FHWA published the Interim Guidance on Mobile Source Toxic Analysis in NEPA, with a recent update in October 2016. The California Department of Transportation (Caltrans) also uses the FHWA Guidance, with some minor tweaks, and ARB published the Air Quality and Land Use Handbook in 2005, which provides screening distances and general guidance for siting receptors near roadways or locating new roadways near receptors (ARB 2005). To evaluate operational impacts associated with build alternatives, project-generated traffic volumes were available from the traffic study conducted for the project (Wood Rogers 2016).

SIGNIFICANCE CRITERIA

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed actions in comparison to the no build alternative. Context means that the significance of the action must be considered in terms of the region as a whole, affected interests, and the specific locality. Intensity refers to the severity of an effect. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects as compared to the no build alternative are based on available guidance from applicable regulatory agencies.

With regards to MSAT analysis in NEPA documents, FHWA has developed a tiered approach, depending on specific project circumstances. The guidance is shown below.

- Category 1: No analysis for projects with no potential for meaningful MSAT effects.
  - Projects qualifying as a categorical exclusion under Title 23 of the Code of Federal Regulations (CFR) Section 771.117(c);
  - Projects exempt under the CAA conformity rule under 40 CFR 93.126; or
  - Other projects with no meaningful impacts on traffic volumes or vehicle mix.
- Category 2: Qualitative analysis for projects with low potential MSAT effects.
  - Projects that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions.

- Project examples include minor widening projects; new interchanges; replacing a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 Average Annual Daily Traffic (AADT).

- Any projects not meeting the criteria in Category (1) or Category (3) should be included in this category.

- Category 3: Projects with higher potential MSAT effects.
  - Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel PM in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or

  - Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year;

    And also

  - Be proposed to be located in proximity to populated areas.

TRPA Criteria

The "Air Quality" criteria from the TRPA Initial Environmental Checklist were used to evaluate the air quality impacts of the alternatives. The project would result in a significant impact if it would result in:

- substantial air pollutant emissions;
- deterioration of ambient (existing) air quality;
- the creation of objectionable odors;
- alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally; or
- increased use of diesel fuel.

CEQA Criteria

Based on Appendix G of the State CEQA Guidelines, an air quality impact is considered significant if implementation of the project would do any of the following:

- 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 3.13-1);

- result in a cumulatively considerable net increase of any criteria air pollutant 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); or

- expose sensitive receptors to substantial pollutant concentrations (including TACs/HAPs).

As stated in Appendix G, the significance criteria established by the applicable AQMD or air pollution control district (APCD) may be used to make the above determinations. Thus, as identified by EDCAQMD, 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 or NO_X, that exceed mass emissions of 82 pounds per day (lb/day). Note that EDCAQMD does not have a threshold for exhaust $PM_{10}/PM_{2.5}$, but considers these emissions significant if ROG and NO_X thresholds are exceeded;

- not include construction-related dust control measures designed to prevent visible dust emissions beyond the property lines of the project site;

- would result in CO emissions from construction or operation that exceeds CAAQS/NAAQS. EDCAQMD considers development projects of the type and size that fall below the significance thresholds for ROG and NO_X to also be insignificant for CO emissions. Screening criteria established by SMAQMD that determined that traffic volumes at nearby intersections experiencing more than 31,600 vehicles per hour would result in CO impacts; or

- expose 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 noncarcinogenic Hazard Index of 1 for the maximally-exposed individual; and/or in accordance with ARB, FHWA, and Caltrans guidance, would result in exposure to sensitive receptors to a roadway experiencing more than 100,000 ADT.

Although significance criteria have not been adopted by the state of Nevada air quality agencies or Douglas County, significance thresholds developed by EDCAQMD are intended to ensure compliance with CAAQS and NAAQAS. Further, emissions that do not exceed EDCAQMD-recommended thresholds would not be expected to contribute substantially to a violation of applicable ambient air quality standards. Therefore, it is appropriate to apply EDCAQMD significance thresholds to portions of the project located in Nevada.

ENVIRONMENTAL EFFECTS OF THE PROJECT ALTERNATIVES

Impact 3.13-1: Short-term, construction-generated emissions of criteria air pollutants and precursors

Construction of Alternatives B, C, D, and E would not exceed EDCAQMD's ROG threshold. Construction of Alternatives B, C, and D would exceed EDCAQMD's NO_X threshold, and therefore CO, exhaust PM_{10}, and $PM_{2.5}$ emissions could be significant. Construction of Alternative E would not exceed EDCAQMD's NO_X or ROG threshold and therefore exhaust emissions would not be significant. All build alternatives (Alternatives B through E) could result in excessive fugitive dust emissions.

In addition to construction associated with the transportation improvements, construction emissions related to the potential mixed-use development sites for Alternatives B, C, and D would also occur. The mixed-use development would begin prior to the transportation improvements in California but may occur simultaneously with transportation improvements occurring in Nevada. Emissions from the mixed-use developments were evaluated separately and in combination with the construction activities for the transportation improvements. Construction associated with redeveloping the mixed-use sites alone or in combination with the transportation improvements would not exceed EDCAQMD's threshold for ROG. Construction associated with redeveloping the mixed-use sites alone and in combination with the transportation improvements would exceed EDCAQMD's thresholds for NO_X, and therefore CO, exhaust PM_{10}, and $PM_{2.5}$ could be significant. Excessive fugitive dust emissions could occur during construction of the mixed-use sites alone and in combination with the transportation improvements.

NEPA Environmental Consequences:	Mitigation Measures 3.13-1a and 3.13-1b have been incorporated into Alternatives B, C, D, and E to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors; No Impact for Alternative A
CEQA/TRPA Impact Determinations:	Less Than Significant for Alternatives B, C, D, and E after implementation of Mitigation Measures 3.13-1a and 3.13-1b; No Impact for Alternative A

Construction-related activities would result in project-generated emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, grading, and clearing), off-road equipment, material delivery, worker commute exhaust emissions, vehicle travel, construction, asphalt paving, application of architectural coatings, and other miscellaneous activities. Fugitive dust emissions are associated primarily with site

preparation and grading and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance. Ozone precursor emissions of ROG, NO_X, and CO are associated primarily with exhaust from construction equipment, haul truck trips, and worker trips. ROG emissions are also generated during asphalt paving and the application of architectural coatings.

Construction of the transportation improvements are conservatively expected to be completed as early as 2020. For Alternatives B, C, and D demolition activities for right-of-way acquisition would occur before the US 50 realignment work and other improvements. A portion of the mixed-use development is expected to begin before the transportation improvements in California to accommodate the displaced residents. The remainder of the mixed-use development is expected to occur following completion of the transportation improvements. Alternative E would not result in any demolition of existing structures or the development of any new land uses. Construction-related emissions are discussed for all alternatives as it relates to the transportation improvements and mixed-use development, where applicable, below.

Alternative A: No Build (No Project)

With Alternative A there would be no improvements to existing US 50, Lake Parkway, or other roadways within the project site. There would be no demolition or construction, and no new land use development. Alternative A would not result in any emissions of criteria air pollutants or precursors. Thus, there would be **no impact** for the purposes of NEPA, CEQA, and TRPA.

Alternative B: Triangle (Locally Preferred Action)

Transportation Improvements

As described in Chapter 2, "Proposed Project and Project Alternatives," Alternative B would include realignment of US 50, demolition of existing structures within the right-of-way of the proposed highway realignment, construction of an approximate 76-foot pedestrian bridge above the realigned US 50 alignment connecting the tourist core to Van Sickle Bi-State Park, and various bicycle and pedestrian facilities such as bicycle lanes and sidewalks. The maximum daily emissions associated with the construction of the transportation improvements were modeled and are shown below in Table 3.13-5.

Table 3.13-5 Maximum Daily Construction Emissions (lb/day) Associated with the Transportation improvements (Alternatives B, C, and D)

Construction Activity	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO
Demolition	1.5	17.7	4.9	1.4	10.6
Grubbing/Land Clearing	1.7	19.3	50.9	11.2	12.3
Grading/Excavation	8.5	93.1	54.7	14.7	61.4
Drainage/Utilities/Sub-Grade	4.5	43.2	52.4	12.6	35.9
Paving	2.0	18.92	1.2	1.0	19.1
Maximum Daily Emissions	**8.5**	**93.1**	**54.7**	**14.7**	**61.4**
EDCAQMD Thresholds of Significance	82	82	AAQS	AAQS	AAQS
Exceed EDCAQMD Thresholds of Significance?	NO	YES	YES	YES	YES

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less; AAQS = Ambient Air Quality Standards

Source: Modeled by Ascent Environmental, Inc. in 2016

As shown in Table 3.13-5, construction associated with the Alternative B transportation improvements could result in maximum daily NO_X emissions of approximately 93 lb/day, which would exceed EDCAQMD thresholds of significance for NO_X, while emissions of ROG would not exceed applicable EDCAQMD thresholds of 82 lb/day. Because maximum daily emissions of NO_X would exceed applicable thresholds, exhaust emissions of CO, PM_{10}, and $PM_{2.5}$ could also potentially result in exceedances of the AAQS. With respect to fugitive dust PM_{10} and $PM_{2.5}$ emissions, EDCAQMD determines significance based on whether or not all available fugitive dust control measures as described in EDCAQMD's CEQA Guide (2002) are implemented. Although some dust control measures would be required by TRPA and EDCAQMD (i.e., Rule

202 and 223-1) as described above in Section 3.13.1, "Regulatory Setting," further dust control measures are available and recommended for implementation by EDCAQMD. Thus, because all available dust control measures are not included in the project, construction activities could result in excessive fugitive dust emissions. Project construction could result in exceedances of NAAQS and CAAQS with respect to exhaust emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$, and could generate excessive fugitive dust emissions. This would be a **significant** impact for the purposes of CEQA and TRPA.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative B transportation improvements to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Mixed-use Development including Replacement Housing

In addition to the Alternative B transportation improvements discussed above, three individual mixed-use development sites could be redeveloped. It is assumed that one of these sites would be constructed prior to the construction of the transportation improvements in California to accommodate residents displaced for right-of-way purposes. Construction of these sites could occur in conjunction with transportation improvements. Each site would include a mix of commercial and residential land uses as well as a combination of parking structures and parking lots. See Exhibits 2-9 and 2-10 in Chapter 2, "Proposed Project and Project Alternatives," for the location of the three mixed-use sites and conceptual site plans.

The maximum allowable development that could occur between the three sites could include up to 224 housing units, 48,000 square feet of commercial space, and 472 parking spaces. Because development of the replacement housing at the three mixed-use development sites would occur prior to the US 50 improvements in California but may occur simultaneously with the US 50 improvements occurring in Nevada, emissions modeling was conducted separately so that the various scenarios could be evaluated. For a conservative analysis, it was assumed that construction of the two largest sites (i.e., Sites 1 and 2) could overlap in time. Existing structures and vegetation would be removed for development of Site 1 and Site 2. Site 3 is currently a surface parking lot and therefore would only require minimal site preparation. Maximum daily emissions associated with construction of the mixed-use sites and combined maximum emissions are shown in Table 3.13-6.

As shown in Table 3.13-6, construction associated with the mixed-use development sites, including replacement housing, would not result in maximum daily ROG emissions that exceed applicable EDCAQMD thresholds of significance of 82 lb/day. However, construction of the mixed-use development, whether constructed alone or simultaneously with the US 50 transportation improvements, would result in maximum daily NO_X emissions that exceed applicable EDCAQMD thresholds of significance of 82 lb/day. Because maximum daily emissions of NO_X would exceed applicable thresholds, exhaust emissions of CO, PM_{10}, and $PM_{2.5}$ could also potentially result in exceedances of the AAQS. With respect to fugitive PM_{10} and $PM_{2.5}$ emissions, EDCAQMD determines significance based on the consistency of the project with incorporation of all available fugitive dust control measures as described in EDCAQMD's CEQA Guide (2002). Although some dust control measures would be required by TRPA and EDCAQMD (i.e., Rule 202 and 223-1) as described above in Section 3.13.1, "Regulatory Setting," further dust control measures are available. Thus, because daily NO_X thresholds would be exceeded and all available dust control measures are not included in the project, construction activities could result in exceedances of NAAQS and CAAQS with respect to exhaust emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$, and could generate excessive fugitive dust PM_{10} and $PM_{2.5}$ emissions. This would be a **significant** impact for the purposes of CEQA and TRPA.

Because of the reasons stated above, for the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative B mixed-use development, including replacement housing, to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Table 3.13-6 Mixed-Use Development Maximum Daily Construction Emissions (lb/day) Associated with Alternatives B, C, and D

Mixed-Use Only	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO
Site 1 Maximum Emissions	27.7	52.3	21.0	12.6	24.8
Site 2 Maximum Emissions	21.4	52.4	21.1	12.6	24.6
Site 3 Maximum Emissions	35.6	45.4	7.6	4.5	24.6
Maximum Emissions (Site 1 and Site 2)	**49.1**	**104.7**	**42.1**	**25.2**	**48.9**
EDCAQMD Thresholds of Significance	82	82	AAQS	AAQS	AAQS
Exceed EDCAQMD Thresholds of Significance?	NO	YES	YES (fugitive dust only)	YES (fugitive dust only)	NO
Mixed-Use + Transportation Improvements Overlap	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**
Maximum Emissions (Mixed-Use + Transportation Improvements)	**57.7**	**197.8**	**96.8**	**39.9**	**110.3**
Exceed EDCAQMD Thresholds of Significance?	NO	YES	YES (fugitive dust only)	YES (fugitive dust only)	NO

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less; AAQS = Ambient Air Quality Standards

Source: Modeled by Ascent Environmental, Inc. in 2016

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for construction-period emission exceedances of NAAQS and CAAQS as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of the potential for short-term construction emissions to exceed NAAQS and CAAQS would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative B transportation improvements and mixed-use development, including replacement housing, would result in a **significant** impact as it relates to short-term construction-generated emissions of criteria air pollutants and precursors.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative B transportation improvements and mixed-use development sites to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Alternative C: Triangle One-Way

Transportation Improvements

The alignment of Alternative C would be the same as Alternative B. However, Alternative C would involve one-way travel within the tourist core and on the realigned US 50. Exhibit 2-3 provides and overview of the roadway network, intersection improvements, and travel patterns associated with Alternative C. Proposed construction activities and construction duration would be similar on a given day with Alternative C as compared to Alternative B (See Table 3.13-5 for emissions estimate). Therefore, maximum construction-related emissions and associated impacts would be the same. This would be a **significant** impact for the purposes of CEQA and TRPA.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative C transportation improvements to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Mixed-use Development including Replacement Housing

Alternative C includes the potential redevelopment of the same three mixed-use development sites within the project site as Alternative B. Exhibits 2-9 and 2-10 show the location and redevelopment potential for Alternative C. The maximum amount of development that could occur on these three sites with Alternative C would be the same as that described above for Alternative B (See Table 3.13-6 for emissions estimate). Therefore, maximum construction-related emissions and associated impacts would be the same. This impact would be a **significant** impact for the purposes of CEQA and TRPA.

Because of the reasons stated above, for the purposes of NEPA, additional mitigation measures have been incorporated into Alternative C mixed-use development, including replacement housing, to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for construction-period emission exceedances of NAAQS and CAAQS as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of the potential for short-term construction emissions to exceed NAAQS and CAAQS would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative C transportation improvements and mixed-use development, including replacement housing, would result in a **significant** impact as it relates to short-term construction-generated emissions of criteria air pollutants and precursors.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative C transportation improvements and mixed-use development sites to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Alternative D: Project Study Report Alternative 2

Transportation Improvements

Alternative D is similar to Alternative B in that it would construct a new alignment for US 50 to the southeast of existing US 50 from the Pioneer Trail intersection in California to Lake Parkway in Nevada. The relocated US 50/Pioneer Trail intersection would be further east than the Alternative B alignment. Exhibit 2-4 provides and overview of the realignment of US 50, intersection improvements, and travel patterns associated with Alternative D. Proposed construction activities and construction duration would be similar under this alternative as compared to Alternative B (see Table 3.13-5 for emissions estimate). Therefore, maximum construction-related emissions and associated impacts would be the same. This would be a **significant** impact for the purposes of CEQA and TRPA.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative D transportation improvements to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Mixed-use Development including Replacement Housing

Similar to Alternative B, Alternative D includes the potential redevelopment of the three mixed-use development sites. Because the highway realignment differs from Alternative B in the area southwest of the Heavenly Village Center, the configuration of Sites 1 and 2 are different for Alternative D. Exhibits 2-11 and 2-12 show the location and a potential mix of uses that could be developed at these sites through a public private partnership. The maximum amount of development that could occur on these three sites under Alternative D would be essentially the same as that described above for Alternative B (see Table 13.1-6 for emissions estimate). Therefore, maximum construction-related emissions and associated impacts would be the same. This impact would be a **significant** impact for the purposes of CEQA and TRPA.

Because of the reasons stated above, for the purposes of NEPA, additional mitigation measures have been incorporated into Alternative D mixed-use development, including replacement housing, to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for construction-period emission exceedances of NAAQS and CAAQS as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of the potential for short-term construction emissions to exceed NAAQS and CAAQS would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative D transportation improvements and mixed-use development, including replacement housing, would result in a **significant** impact as it relates to short-term construction-generated emissions of criteria air pollutants and precursors.

For the purposes of NEPA, additional mitigation measures have been incorporated into the Alternative D transportation improvements and mixed-use development sites to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Alternative E: Skywalk

Alternative E would feature a concrete deck over the entire width and length of existing US 50 within the tourist core between a location about 100 feet south of Stateline Avenue and a location near the northern end of the Montbleu Resort (about 450 feet south of Lake Parkway). The deck would serve as a pedestrian "skywalk" facility or pedestrian walkway above US 50 near the existing resort-casinos. The width would be approximately 75 feet. The skywalk would be constructed on 4-foot wide columns spaced approximately 20 feet on center running along both sides of the highway for the entire length of the bridge. Construction-related emissions associated with this alternative are shown below in Table 3.13-7.

Table 3.13-7 Maximum Daily Construction Emissions (lb/day) Associated with the Transportation improvements for Alternative E

	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO
Demolition	1.5	17.7	4.9	1.4	10.6
Grubbing/Land Clearing	1.2	14.1	50.6	10.9	7.2
Grading/Excavation	3.6	38.6	52.0	12.2	26.1
Drainage/Utilities/Sub-Grade	6.3	64.3	53.4	13.6	45.3
Paving	2.4	23.2	1.5	1.4	18.1
Maximum Daily Emissions	**6.3**	**64.3**	**53.4**	**13.6**	**45.7**
EDCAQMD Thresholds of Significance	82	82	AAQS	AAQS	AAQS
Exceed EDCAQMD Thresholds of Significance?	NO	NO	YES (fugitive dust only)	YES (fugitive dust only)	NO

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less; AAQS = Ambient Air Quality Standards

Source: Modeled by Ascent Environmental, Inc. in 2016

As shown in Table 3.13-7, construction associated with Alternative E would not result in maximum daily NO_X or ROG emissions that exceed applicable EDCAQMD thresholds of significance of 82 lb/day. With regards to construction-related exhaust emissions of CO, PM_{10}, and $PM_{2.5}$ because ROG and NO_X emissions would not exceed applicable thresholds, all other exhaust emissions would also be considered less than significant (EDCAQMD 2002). With respect to fugitive dust PM_{10} and $PM_{2.5}$ emissions, EDCAQMD determines

significance based on the consistency of the project with incorporation of all available fugitive dust control measures as described in EDCAQMD's CEQA Guide (2002). Although some dust control measures would be required by TRPA and EDCAQMD (i.e., Rule 202 and 223-1) as described above in Section 3.13.1, "Regulatory Setting," further dust control measures are available. Thus, because all available dust control measures are not included in the project, construction activities could result in excessive fugitive dust emissions. This would be a **significant** impact for the purposes of CEQA and TRPA.

For the purposes of NEPA, additional mitigation measures have been incorporated into Alternative E to further reduce to the extent feasible short-term construction-generated emissions of criteria air pollutants and precursors.

Impact 3.13-2: Consistency with air quality plans and regional transportation conformity

The US Department of Transportation (DOT) made a CAA conformity determination for the TMPO's 2012 RTP/SCS (i.e., Mobility 2035) on January 28, 2013 (FHWA 2013). The 2015 Federal Transportation Improvement Program is consistent with the transportation system and financial plan described in the most recent amendment to the Mobility 2035 and was adopted by TRPA and TMPO on December 12, 2012 (TRPA and TMPO 2012). The 2015 FTIP met all air quality conformity requirements when approved. The design concept and scope of Alternatives B, C, and D are consistent with the project description in the applicable RTP/SCS and FTIP. Although Alternative E would not be consistent with the design concept and scope described in the RTP/SCS, this alternative would not increase regional VMT. Therefore, implementation of Alternatives B, C, D, and E would be consistent with the assumptions in the regional emissions analysis in the RTP and would conform to the SIP and meet Federal Conformity Requirements. There would be no regional increase in mobile-source emissions and the region would continue to conform to applicable air quality plans.

NEPA Environmental Consequences:	Alternatives B, C, D, and E would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement; No Impact for Alternative A
CEQA/TRPA Impact Determinations:	Less Than Significant for Alternatives B, C, D, and E; No Impact for Alternative A

As discussed above in Section 3.13.1, "Regulatory Setting," the CAA of 1970, as amended, requires a demonstration that federal actions conform to the SIP and similar approved plans in areas that are designated as nonattainment or have maintenance plans for criteria pollutants. Transportation measures, such as the locally preferred action, are analyzed for conformity with the SIP as part of the applicable RTP and FTIP. If the design concept and scope of a proposed transportation project is consistent with the project description in the applicable RTP and FTIP, as well as the assumptions in the regional emissions analysis for the RTP and FTIP, then the locally preferred action would conform to the SIP, would meet Federal Conformity requirements, and would not result in an adverse impact on regional air quality.

Alternative A: No Build (No Project)

Under Alternative A there would be no improvements to existing US 50, Lake Parkway, or other roadways within the project site or new land use development. Alternative A would not result in any operational-related regional emissions. Existing traffic conditions, including existing levels of congestion and traffic flow would continue, and therefore, could potentially prevent full, effective implementation of the 2035 RTP, which aims to improve connectivity, reliability, travel times, and operations of public transportation, as well as increased mobility and safety of bicycles and pedestrians. However, with Alternative A there would be no change in existing conditions and, thus, **no impact** would occur for the purposes of NEPA, CEQA, and TRPA.

Alternative B: Triangle (Locally Preferred Action)

Transportation Improvements

TMPO and DOT must make a determination that the applicable RTP and FTIP conform to the applicable SIP. Conformity to the SIP means that transportation activities would not create new air quality violations, worsen existing violations, or delay the attainment of the NAAQS. Federal regulations also require TMPO to conduct an air quality conformity analysis of all regionally-significant projects that increase the capacity of the transportation system. All regionally-significant capacity-increasing transportation projects, regardless of funding sources, must be included in the FTIP.

TMPO adopted its RTP, *Mobility 2035: Lake Tahoe Regional Transportation Plan* (2035 RTP), on December 12, 2012 (TRPA and TMPO 2012). Upon adoption of the RTP, FHWA and the Federal Transit Administration (FTA) approved the air quality conformity finding. The locally preferred action, US 50 South Shore Community Revitalization Project, is included in the 2035 RTP in the "Planned Corridor Revitalization Projects" (TRPA and TMPO 2012). In addition, the 2013 FTIP, a four-year program of surface transportation projects, was adopted on September 26, 2012 and amended on January 23, 2013 (TMPO 2013). The locally preferred action is included in the 2015 FTIP and shown on the Project Location Map (TMPO 2014). The locally preferred action is also included in the list of projects in the 2017 RTP, which is an update to the 2012 RTP and has been circulated for public review.

The design concept and scope of Alternative B are consistent with the project description in the federally approved 2012 RTP and 2015 FTIP, and the assumptions included in TRPA's regional emissions analysis. Therefore, Alternative B would not result in long-term operational-related increases in criteria air pollutants or precursors, would conform to the SIP and meet Federal Conformity Requirements, and no adverse regional air quality impact would occur as a result of implementation of Alternative B. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative B transportation improvements would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

The Alternative B mixed-use development, including replacement housing, could generate slightly more trips in the study area than the land uses they would replace (a net increase of approximately 1,400 to 1,700 additional daily trips). However, the concentration of transit-oriented types of mixed-use development that could occur with Alternative B are an example of the type of project contemplated in the TRPA Regional Plan and RTP, as well as the TCAP, for this area. Because growth in the Tahoe Basin is controlled by the TRPA commodity system and the Regional Plan EIS, RTP EIR/EIS, and TCAP anticipated growth of this scale in this area, the development potential associated with the three mixed-use sites would not cause regional VMT in the Tahoe Basin to increase beyond that which has already been contemplated (TMPO and TRPA 2012). Therefore, because similar land uses and development densities were accounted for in TRPA's regional emissions analysis, the development of these mixed-use sites would not interfere with the Region's ability to meet VMT reduction targets set forth in the RTP.

Nonetheless, emission modeling was conducted to estimate potential impacts associated with the trips generated by the mixed-use sites. As shown in Appendix J, operational-related mobile emissions associated with all of the mixed-use sites combined and assuming no VMT benefits from existing surrounding land uses would not exceed 29 lb/day of NO_X or 10 lb/day of ROG, which is substantially below EDCAQMD's adopted operational thresholds for NO_X and ROG of 82 lb/day. (Note: Diesel exhaust emissions are discussed separately under Impact 3.13-4.) This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative B mixed-use development sites would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for an adverse effect on air quality to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air quality impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative B transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact on air quality and are consistent with air quality plans and regional transportation conformity.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative B would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Alternative C: Triangle One-Way

Transportation Improvements

Impacts of Alternative C transportation improvements would be the same as described for Alternative B transportation improvements because the design concept and scope of Alternative C would also be consistent with the description of the US 50 South Shore Community Revitalization Project in the 2035 RTP and the 2013 FTIP, and the assumptions in TMPO's Regional emissions analysis. Therefore, Alternative C would not result in long-term operational-related increases in criteria air pollutants or precursors, would conform to the SIP and meet Federal Conformity Requirements, and no adverse regional air quality impact would occur as a result of implementation of Alternative C. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative C transportation improvements would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

The Alternative C mixed-use development, including replacement housing, would result in the same trip generation increases as described above for Alternative B, because the redevelopment sites are the same. Thus, for the same reasons described for Alternative B, the addition of mixed-use development for this alternative would not result in substantial long-term operational criteria air pollutants or precursors, or interfere with the regions ability to meet VMT reduction targets set in the RTP. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative C mixed-use development sites would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for an adverse effect on air quality to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air quality impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative C transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact on air quality and are consistent with air quality plans and regional transportation conformity.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative C would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Alternative D: Project Study Report Alternative 2

Transportation Improvements

Impacts of Alternative D would be the same as described for Alternative B because the design concept and scope of Alternative D would also be consistent with the description of the US 50 South Shore Community Revitalization Project in the 2035 RTP and the 2013 FTIP, and the assumptions in TMPO's Regional emissions analysis. Therefore, Alternative D would not result in long-term operational-related increases in criteria air pollutants or precursors, would conform to the SIP and meet Federal Conformity Requirements, and no adverse regional air quality impact would occur as a result of implementation of Alternative D. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative D transportation improvements would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

The Alternative D mixed-use development, including replacement housing, under this alternative would result in similar trip generation increases as described above for Alternative B. Thus, for the same reasons described for Alternative B, the addition of the mixed-use developments under this alternative would not result in substantial long-term operational criteria air pollutants or precursors, or interfere with the Region's ability to meet VMT reduction targets set in the RTP. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the Alternative D mixed-use development would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for an adverse effect on air quality to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air quality impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative D transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact on air quality and are consistent with air quality plans and regional transportation conformity.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development as part of Alternative D would avoid an adverse effect on air quality and are consistent with air quality plans and regional transportation conformity such that no additional mitigation measures are needed or feasible to implement.

Alternative E: Skywalk

The design concept and scope of this alternative are not consistent with the project description in the approved RTP and FTIP. However, regional VMT would not increase over existing VMT as a result of this alternative. Therefore, Alternative E would be consistent with assumptions included in TRPA's regional emissions analysis and conform to the SIP and meet Federal Conformity Requirements. No adverse regional air quality impact would occur as a result of implementation of Alternative E. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, because Alternative E would avoid an adverse effect on air quality, as there would be no change in VMT, no additional mitigation measures are needed or feasible to implement.

Impact 3.13-3: Project-level transportation conformity with respect to localized, long-term mobile-source carbon monoxide emissions

Though implementation of all of the build alternatives (Alternatives B through E) and the mixed-use development, including replacement housing, associated with Alternatives B, C, and D would result in changes to the roadway network and traffic patterns in the study area, implementation of any of the alternatives would not result in increases in traffic such that quantitative screening criteria for local CO emissions would be triggered during project operations. Implementation of any of the alternatives, including Alternative A and mixed-use development sites, where applicable, would not result in increased concentrations of CO that would expose sensitive receptors to unhealthy levels.

NEPA Environmental Consequences:	The design features of Alternatives A, B, C, D, and E would avoid or minimize localized, long-term mobile-source carbon monoxide such that project-level conformity is met and no additional mitigation measures are needed or feasible to implement
CEQA/TRPA Impact Determinations:	Less Than Significant for Alternatives A, B, C, D, and E

In addition to a regional conformity determination, as discussed above under Impact 3.13-2, a microscale or "hot-spot" analysis is required for projects within a federal nonattainment or maintenance area. With regards to the NAAQS for CO, the El Dorado County portion of the LTAB is designated as a maintenance area and therefore, consistent with NEPA requirements, a further demonstration of conformity--at the project level—is required. This analysis includes a screening procedure consistent with EDCAQMD guidance.

In addition, a quantitative hot-spot analysis, consistent with information published by FHWA related to project-level Conformity Analysis, the Standard Environmental Reference (SER) Air Quality Conformity Findings Checklist, applicable U.S. EPA project-level analysis guidance, the Transportation Conformity Regulations at 40 CFR 93 Subpart A, and Section 176(c) of the CAA (42 USC 7506(c)) has been conducted and is included in Appendix J of this document. The following discussion is focused on compliance with EDCAQMD CEQA guidance.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. CO hotspots are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as housing units, schools, and childcare facilities. Thus, high CO concentrations are considered to have a direct influence on the receptors they affect.

Caltrans has developed a Transportation Project-Level Carbon Monoxide Protocol (Protocol) for assessing CO impacts for federal conformity determinations, NEPA, and CEQA. The Protocol is the standard method for project-level CO analysis used by Caltrans. Using this methodology, if a project is determined to not have a significant CO impact under these guidelines it would also not be considered to have a significant impact

under State of Nevada standards. According to the protocol, projects may worsen air quality if they increase the percentage of vehicles in cold start modes by 2 percent or more; significantly increase traffic volumes (by 5 percent or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections operating at Level of Service (LOS) E or F, or causing an intersection that would operate at LOS D or better without the project, to operate at LOS E or F.

EDCAQMD considers development projects of the type and size that fall below the significance thresholds for ROG and NO_X to also be insignificant for CO emissions. CO emissions associated with land use projects would mostly be associated with impacts from large concentrations of vehicles. EDCAQMD's CEQA guidance recommends that the project be modeled according to CO concentration isopleth maps available in the guidance. However, given that the guidance was published in 2002 and had forecasted CO concentrations only out to 2010, more recent screening criteria from SMAQMD and the Bay Area Air Quality Management District (BAAQMD) are considered in this CO impact discussion (EDCAQMD 2002).

Screening criteria for SMAQMD and BAAQMD were developed based on a conservative analysis of local intersections. If the project exceeds criteria, a detailed dispersion modeling analysis would need to be performed based on local data. These screening criteria have been developed in a manner such that, if they are met, operation-related local emissions of CO (associated with mobile sources generated by development) would not violate a standard or contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. According to BAAQMD, a project would result in a less-than-significant CO impact if the project traffic would not increase volumes at affected intersections to more than 44,000 vehicles per hour (BAAQMD 2010). According to SMAQMD, a project would result in a less-than-significant CO impact if the project would not result in an affected intersection experiencing more than 31,600 vehicles per hour (SMAQMD 2009). For the purpose of this analysis, a significant impact related to CO emissions during operation would occur if the project would increase traffic volumes at nearby intersections to more than 31,600 vehicles per hour.

Traffic volumes and traffic-related effects of the build alternatives discussed in this impact are based on information provided in Section 3.6, "Traffic and Transportation," as well as the traffic study conducted for this EIR/EIS/EIS (Wood Rogers 2016).

Alternative A: No Build (No Project)

With Alternative A, there would be no improvements to existing US 50, Lake Parkway, or other roadways within the project site. However, regional traffic would continue to grow and during summer peak hours, the US 50/Stateline Avenue intersection would degrade to LOS E. No new trips would be generated by this alternative and no changes to the roadway system would occur. Further, no study intersection would experience peak traffic volumes that exceed 31,600 vehicles per hour, the screening criterion used to determine whether a CO impact could occur. Therefore, implementation of this alternative would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of Alternative A would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Alternative B: Triangle (Locally Preferred Action)

Transportation Improvements

As described in more detail in Section 3.6, "Traffic and Transportation," implementation of Alternative B transportation improvements would result in changes to traffic patterns and delay times at affected intersections. However, implementation of Alternative B transportation improvements would not result in any intersections operating at LOS E or F. Further, no study intersection would experience peak traffic volumes that exceed 31,600 vehicles per hour. Therefore, implementation of Alternative B would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO

concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative B transportation improvements would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

As discussed in Section 3.6, "Traffic and Transportation," Alternative B mixed-use development, including replacement housing, at Sites 1, 2, and 3 would generate slightly more trips than the land uses they would replace. Further, operation of the mixed-use developments would result in changes to traffic patterns and delay times at affected intersections relative to the transportation improvements alone. However, with the addition of the mixed-use development for Alternative B, the LOS at study area intersections would not degrade to LOS E or F. Further, maximum peak-hour traffic volumes associated with all three sites combined would be 143 vehicles/hour. Adding this to intersection peak volumes described above for Alternative B transportation improvements, and dispersed over the study intersections, would not result in peak-hour traffic volumes that come close to or exceed the 31,600 vehicle/hour threshold. The mixed-use development associated with Alternative B would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative B mixed-use development, including replacement housing, would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for a CO hotspot effect to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential CO hotspots would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative B transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the potential to create CO hotspots.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative B would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Alternative C: Triangle One-Way

Transportation Improvements

As described in more detail in Section 3.6, "Traffic and Transportation," implementation of Alternative C transportation improvements would result in changes to traffic patterns and delay times at affected intersections. Based on the traffic study conducted for the project, implementation of Alternative C would cause operations at the signal at Realigned US 50/Pioneer Trail/Existing US 50 and the roundabout at Realigned US 50/Lake Parkway/Existing US 50 to be degraded from LOS B to LOS F, and operations at the signal at Realigned US 50/Lake Parkway/Existing US 50 to be degraded from LOS B to LOS E. However, with implementation of this alternative no study intersection would experience peak traffic volumes that exceed 31,600 vehicles per hour. Therefore, although LOS would be degraded at some intersections associated with Alternative C, existing plus project-related peak traffic volumes would not reach levels associated with

high CO concentrations. Thus, in accordance with applicable screening criteria, implementation of Alternative C transportation improvements would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative C transportation improvements would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

Alternative C includes redevelopment of the same three mixed-use development sites and replacement housing within the project site as with Alternative B. However, as described above for Alternative C transportation improvements, implementation of this alternative would cause three intersections to operate at LOS E or F.

With the addition of the mixed-use development, including replacement housing, and related traffic to Alternative C, the intersection of existing US 50/Stateline Ave would also operate at LOS F. However, maximum peak-hour traffic volumes associated with all three sites combined could reach 154 vehicles per hour. Adding this to intersection peak volumes described above for the transportation improvements, and dispersed over the study intersections, would not result in peak-hour traffic volumes that come close to or exceed the 31,600 vehicles per hour threshold. The addition of the mixed-use development to Alternative C would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative C mixed-use development, including replacement housing, would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for a CO hotspot effect to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential CO hotspots would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative C transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the potential to create CO hotspots.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative C would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Alternative D: Project Study Report Alternative 2

Transportation Improvements

As described in more detail in in Section 3.6, “Traffic and Transportation,” implementation of Alternative D transportation improvements would result in changes to traffic patterns and delay times at affected intersections. However, implementation of Alternative D would not result in any intersection operating at LOS E or F. Further, no study intersection would experience peak traffic volumes that exceed 31,600 vehicles per

hour. Therefore, implementation of Alternative D would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative D transportation improvements would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

Alternative D includes redevelopment of the same three sites within the project site as Alternative B. Because the highway realignment differs from Alternative B, the configuration of Sites 1 and 2 are different for Alternative D. However, the maximum amount of development that could occur on these three sites under Alternative D would be similar to that evaluated and described above for Alternative B. Similar to Alternative B, LOS would not be altered as a result of adding the mixed-use developments. Peak-hour traffic volumes associated with Alternative D mixed-use development, including replacement housing, with this alternative would be slightly lower as compared to Alternative B (i.e., 126 vehicles per hour). Therefore, impacts associated with operational-related CO emissions would be the same as Alternative B. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of the Alternative D mixed-use development site, including replacement housing, would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for a CO hotspot effect to occur as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential CO hotspots would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative D transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the potential to create CO hotspots.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative D would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Alternative E: Skywalk

As described in more detail in Section 3.6, “Traffic and Transportation,” implementation of Alternative E would result in changes to traffic patterns in the resort-casino area with the removal of the signal and at-grade pedestrian scramble between Hard Rock and Montbleu and delay times at affected intersections. However, implementation of Alternative E would not result in any intersections operating at LOS E or F. Further, no study intersection would experience peak traffic volumes that exceed 31,600 vehicles per hour. Therefore, implementation of Alternative E would not result in operational-related CO emissions that could exceed applicable standards or expose receptors to high CO concentrations. Further, the modeling results shown in Appendix J indicate that project-related CO emissions would not cause or contribute to any new or worsened localized violations of the federal 1-hour or 8-hour CO ambient standards. This impact would be **less than significant** for the purposes of CEQA and TRPA.

For the purposes of NEPA, the design features of Alternative E would avoid creating a CO hotspot such that no additional mitigation measures are needed or feasible to implement.

Impact 3.13-4: Exposure of sensitive receptors to Mobile Source Air Toxics/Toxic Air Contaminants

Construction-related activities would result in short-term project-generated emissions of diesel PM under all build alternatives. However, construction would be relatively short in duration (i.e., up to 3 years), would not occur in the same location for extended periods of time, and with incorporated mitigation exhaust emissions would not be significant. As such, construction activities associated with Alternatives B, C, D, and E transportation improvements and mixed-use development, including replacement housing, would not expose sensitive receptors to excessive levels of MSAT/TACs.

In accordance with FHWA guidance, projects that do not result in more than 140,000 AADT have a low potential to result in impacts from MSAT. Further, guidance provided by ARB indicates that elevated health risks from operational exposure to diesel exhaust is associated primarily with high volume roadways of 100,000 ADT or more. Implementation of Alternatives B, C, D, and E would result in less than 40,000 ADT during the summer peak season for all affected roadway segments. Therefore, implementation of Alternatives B, C, D, and E is not anticipated to result in a significant health risk impact to sensitive receptors in the study area. Implementation of Alternative A would not result in any new sensitive receptors placed in close proximity to existing sources of MSAT/TAC emissions and no sources of MSAT/TAC emissions would be placed in close proximity to sensitive land uses.

NEPA Environmental Consequences:	The design features of Alternatives A, B, C, D, and E would avoid or minimize the exposure of sensitive receptors to air toxics such that no additional mitigation measures are needed or feasible to implement
CEQA/TRPA Impact Determinations:	Less Than Significant for Alternatives A, B, C, D, and E

In addition to the criteria air pollutants for which there are NAAQS and CAAQS, the EPA and ARB also regulate air toxics. As described in Section 3.13.1, “Regulatory Setting,” above, the seven compounds acrolein, benzene, 1,3-butadiene, diesel PM, formaldehyde, naphthalene, and polycyclic organic matter are collectively referred to as MSAT.

Diesel PM, one of the seven MSAT mentioned above, was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs and MSAT. As a result, diesel PM is the primary TAC of concern with regards to health effects on sensitive receptors. However, because diesel PM is included within the compounds determined by EPA as an MSAT, for purposes of this analysis, MSAT are synonymous with TACs.

When it comes to evaluating MSAT emissions at the project level, health effects on nearby sensitive receptors is the primary concern. In FHWA’s view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the CAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute. Two Health Effects Institute studies are summarized in Appendix D of FHWA’s Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents (FHWA 2016). Among the adverse health

effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts; each step in the process builds on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by the Health Effects Institute. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA and the Health Effects Institute have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the CAA to determine whether more stringent controls are required to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires the EPA to determine a “safe” or “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the United States Court of Appeals for the District of Columbia Circuit upheld the EPA’s approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against project benefits such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, which are better suited for quantitative analysis.

Considering the limitations and uncertainties involved in MSAT analysis. FHWA has published guidance for conducting MSAT analyses, which provides a tiered approach, depending on the specific project circumstances. Based on 2016 FHWA guidance, no analysis for projects with no potential for meaningful MSAT effects; Qualitative analysis for projects with low potential MSAT effects; or Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects should be conducted. In 2005 ARB published the Air Quality and Land Use Guidebook, which provides recommendations for siting sensitive land uses near roadways. Operational-related MSAT/TAC emissions were evaluated in accordance with FHWA and

ARB guidance. The basis of this analysis relies on the FHWA guidance and incorporates California-specific requirements/considerations where applicable.

The project would include on- and off-road mobile sources associated with construction vehicle fleet as well as on-road vehicle travel on existing and new roadway alignments associated with the build alternatives. Based on the project-specific traffic study, implementation of any of the build alternatives transportation improvements and mixed-use development, including replacement housing, would not result in traffic volumes of 140,000 AADT or greater and therefore a qualitative analysis is warranted (Wood Rogers 2016). Emissions from construction and operations are evaluated separately.

Traffic volumes and traffic-related effects as a result of action alternatives discussed in this impact is based on information provided in Section 3.6, "Traffic and Transportation," as well as the traffic study conducted for this EIR/EIS/EIS (Wood Rogers 2016).

Alternative A: No Build (No Project)

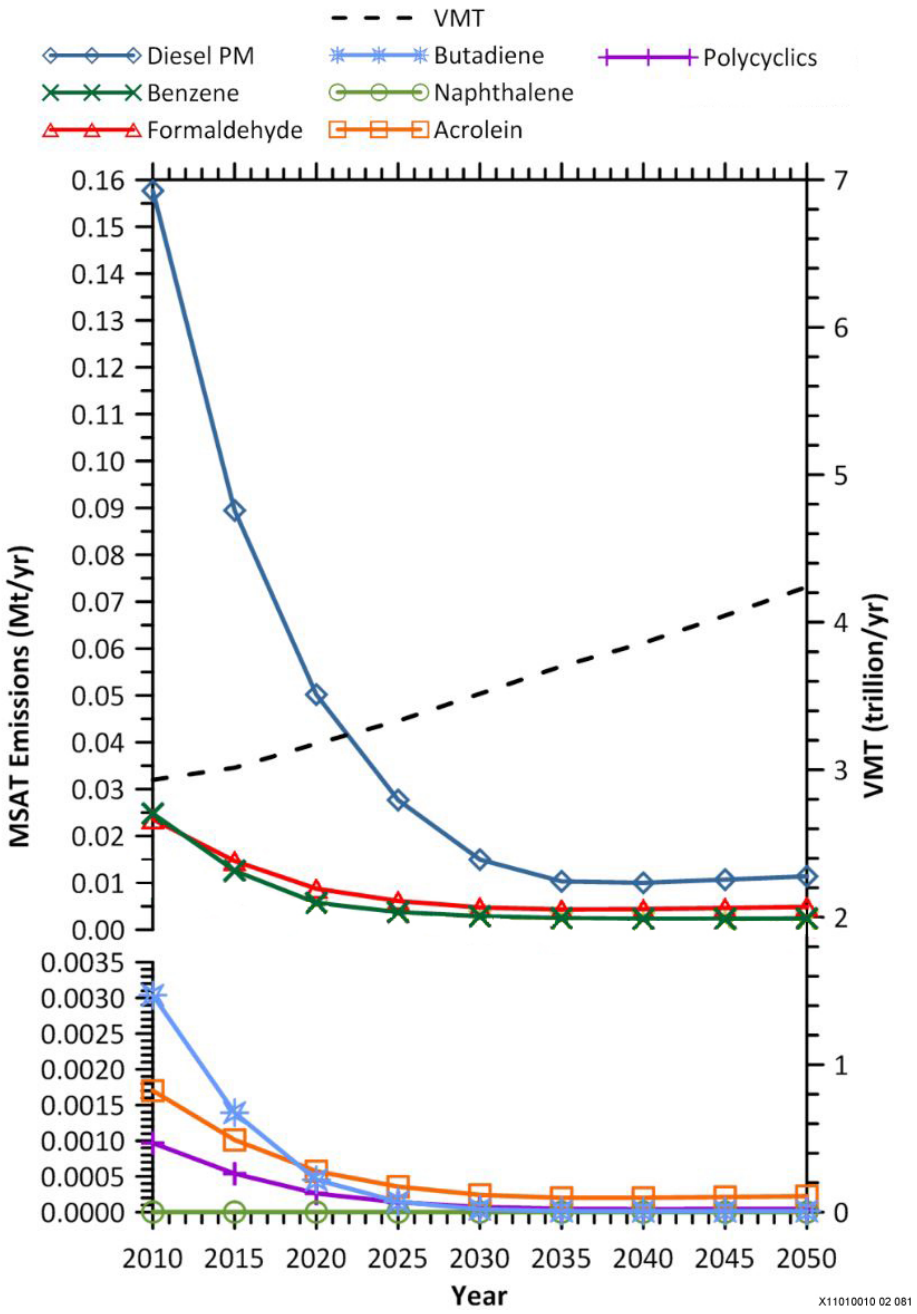
Under Alternative A there would be no improvements to existing US 50, Lake Parkway, or other roadways within the project site. There would be no demolition or construction, and no new land use development. Alternative A would not result in any construction-related emissions of MSAT/TACs. No new sensitive receptors would be placed in close proximity to existing sources of MSAT/TACs and no sources of MSAT/TACs emissions would be placed in close proximity to sensitive land uses. Further, as described in the Regulatory Setting and in further detail below, MSAT emissions are expected to continue to decrease into the future. This impact would be **less than significant** for the purposes of CEQA and TRPA.

With Alternative A (No Project), the roadway system within the project site boundaries would continue to be inadequate to meet the existing or projected traffic volumes. The continued periods of traffic congestion during the peak summer and winter seasons would degrade and discourage bicycle and pedestrian travel in the tourist core and along major roadways, and inhibit the operation of and accessibility to transit services. Cut-through traffic on local roadways would continue as it does today.

Further, Alternative A assumes that the US 50/South Shore Community Revitalization Project, which is included in RTP EIR/EIS Alternative 3, would not be constructed. Therefore, the community revitalization opportunity of the highway realignment would not be realized, including the reduction of VMT made possible by revitalization of a more walkable, bikable, and transit-served urban center. Alternative A would not substantially change VMT nor contribute toward the Region reaching its goal of reducing VMT below 1981 levels.

Nonetheless, according to recent FHWA MSAT trends analysis using updated emissions modeling that incorporates all MSAT-reducing rules and regulations, FHWA estimates that even if VMT increases (nationwide) by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period. Exhibit 3.13-1 below shows the results of MSAT emissions analysis conducted by FHWA.

As shown above, a substantial decrease in MSAT emissions can be expected between the existing and future No Project conditions. Thus, even considering that no regional benefits to VMT would occur with Alternative A, MSAT emissions would be expected to continue to decrease in the future. For the purposes of NEPA, Alternative A would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.



Notes: MSAT = Mobile Source Air Toxics; Mt = Megatonnes; yr = year; VMT = Vehicle Miles Traveled.

Source: FHWA 2016

Exhibit 3.13-1 **Projected National Mobile Source Air Toxics Emission Trends 2010 through 2050 for Vehicles Operating on Roadways**

Alternative B: Triangle (Locally Preferred Action)

Transportation Improvements

For construction activities, diesel PM is the primary TAC of concern. Construction-related activities for Alternative B transportation improvements would result in 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 and worker commute vehicles (MSAT other than diesel PM are associated with gasoline engines) 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.

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. Existing sensitive receptors are located throughout the study area and could be located in relative close proximity to construction activities (i.e., within 100 feet).

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 (OEHHA 2012). Construction activities associated with the transportation improvements under this alternative are conservatively assumed to last up to three years. However, due to the linear nature of the project and the relatively short duration of overall activities, no one receptor would be exposed to construction-related emissions for excessive periods of time. Thus, given that construction activities would move throughout the site limiting exposure to any one area, and the relatively short overall construction period of three years, emissions of MSAT/TAC during construction would not expose nearby sensitive receptors to excessive levels (i.e., an incremental increase in cancer risk that exceeds of 10 in one million or a Hazard Index greater than 1.0 at the maximally exposed individual).

With regards to operations and as described in more detail in Section 3.6, “Traffic and Transportation,” implementation of Alternative B would result in slight increases in AADT and VMT on affected roadway segments. Further, as a result of the new alignment, existing sensitive land uses currently not in close proximity to US 50 (e.g., residences along Primrose Road and Moss Road) would now be located as close as 100 feet to the realigned US 50 alignment.

In accordance with FHWA guidance, projects that do not result in more than 140,000 AADT have a low potential to result in impacts from MSAT. Further, given the regulatory environment associated with MSAT, as described in Section 3.13.1, “Regulatory Setting,” and shown above in Exhibit 3.13-1, MSAT emissions have been trending down and will continue to decrease into the future. In addition, guidance provided by ARB indicates that elevated health risks from operational exposure to diesel exhaust is associated primarily with high volume roadways (100,000 ADT) and facilities with substantial diesel exhaust such as truck stops, distribution centers and transit centers. Based on the traffic study conducted, implementation of this alternative would result in less than 40,000 ADT during the summer peak season for all affected roadway segments, with less than 3 percent truck trips. Therefore, Alternative B transportation improvements are not anticipated to result in a significant health risk impact to sensitive receptors in the study area. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). While the highway realignment in Alternative B would result in a small increase in VMT when through trips are analyzed on their own, it is consistent with the community revitalization objectives of the approved RTP Alternative 3, which results in a beneficial reduction in regional VMT. Thus, because Alternative B would contribute to an overall regional reduction in VMT, higher levels of MSAT are not expected from Alternative B compared to Alternative A (No

Project). Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations. Because of the reasons stated above, for the purposes of NEPA, the Alternative B transportation improvements would not expose sensitive receptors to air toxics such that additional mitigation measures are not needed or feasible to implement.

Mixed-use Development including Replacement Housing

Construction of the mixed-use sites would generally be less intense than the construction associated with the transportation improvements. Based on modeling conducted for the mixed-use sites, assuming maximum buildout for each site and overlapping construction between Sites 1 and 2, ROG and NO_X emissions would not exceed EDCAQMD's daily thresholds. Construction of the mixed-use development sites would not be expected to overlap with construction of the transportation improvements and would generate lower amounts of exhaust emissions than construction of the transportation improvements on a daily basis. Thus, the corresponding MSAT/TAC emissions generated during construction would also be less.

The mixed-use development under Alternative B would generate more trips than the land uses being replaced (approximately 1,400–1,700 additional daily trips), which could lead to an increase in regional VMT. However, buildout of the Region in this manner was considered in the RTP EIR/EIS when VMT impacts were analyzed. All of the mixed-use development sites would occur within the City of South Lake Tahoe near the Tourist Core, which is one of the areas designated by the RTP as a Town Center/Regional Center. This is the type of development that was considered and accounted for under the RTP EIR/EIS and the TCAP, which would contribute to the overall benefit to regional VMT. That is, locating development within the Tourist Core with a variety of land uses in close proximity, would contribute to reducing VMT.

Based on the traffic study conducted, ADT increases from the mixed-use development sites combined with ADT increases from this alternative without the mixed-use development would be less than 40,000 ADT during the summer peak season for all affected roadway segments, with less than 3 percent truck trips. Therefore, the project is not anticipated to result in a significant health risk impact to sensitive receptors in the study area. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables, such as fleet mix, remain the same as Alternative A (No Project). Alternative B, even with the mixed-use development, would result in an overall reduction in VMT. Therefore, higher levels of MSAT are not expected from Alternative B compared to Alternative A (No Project). Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations. Because of the reasons stated above, for the purposes of NEPA, the Alternative B mixed-use development sites would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for exposure of sensitive receptors to air toxics as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air toxics impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative B transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the exposure of sensitive receptors to air toxics.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development site as part of Alternative B would avoid exposure of sensitive receptors to air toxics such that no additional mitigation measures are needed or feasible to implement.

Alternative C: Triangle One-Way

Transportation Improvements

Construction activities, intensity, and duration associated with the transportation improvements under this alternative would be the same as described above for Alternative B. Implementation of this alternative would result in similar increases in traffic as Alternative B, but peak ADT would also be below FHWA-recommended volumes of 140,000 AADT and ARB-recommended volumes of 100,000 ADT. Impacts would be same as Alternative B. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). While the highway realignment in Alternative C would result in a small increase in VMT when through trips are analyzed on their own, this alternative would also provide similar regional VMT benefits as Alternative B and higher levels of MSAT are not expected. Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Because of the reasons stated above, for the purposes of NEPA, the Alternative C transportation improvements would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

Construction activities, intensity, and duration associated with Alternative C mixed-use development, including replacement housing, under this alternative would be the same as described above for Alternative B.

The mixed-use development with Alternative C would generate more trips than the land uses being replaced (approximately 1,400 to 1,700 additional daily trips), which could lead to an increase in regional VMT. However, buildout of the Region in this manner was considered in the RTP EIR/EIS when VMT impacts were analyzed. All of the mixed-use development, including replacement housing, would occur within the City of South Lake Tahoe near the Tourist Core, which is one of the areas designated by the RTP as a Town Center/Regional Center. This is the type of development that was considered and accounted for under the RTP EIR/EIS and TCAP, which would contribute to the overall benefit to regional VMT. That is, locating development within the Tourist Core with a variety of land uses in close proximity, would contribute to reducing VMT.

The addition of the mixed-use development associated with Alternative C would result in similar increases in traffic as Alternative B, but peak ADT would also be below FHWA-recommended volumes of 140,000 AADT and ARB-recommended volumes of 100,000 ADT. Impacts would be same as Alternative B. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). While the additional mixed-use development in Alternative C would result in a small increase in VMT, potential development would contribute to the regional VMT benefit as discussed above for Alternative B. Therefore, similar to Alternative B, this alternative is consistent with the community revitalization objectives of the approved RTP Alternative 3, which results in a beneficial reduction in regional VMT, and higher levels of MSAT are not expected from Alternative C, even with the mixed-use development. Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to

reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Because of the reasons stated above, for the purposes of NEPA, the Alternative C mixed-use development, including replacement housing, would not expose sensitive receptors to air toxics such that additional mitigation measures are not needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for exposure of sensitive receptors to air toxics as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air toxics impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative C transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the exposure of sensitive receptors to air toxics.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative C would avoid exposure of sensitive receptors to air toxics such that no additional mitigation measures are needed or feasible to implement.

Alternative D: Project Study Report Alternative 2

Transportation Improvements

Proposed construction activities and construction duration for Alternative D transportation improvements would be similar those for Alternative B. Implementation of Alternative D would result in similar increases in traffic as Alternative B, but peak ADT would also be below FHWA-recommended volumes of 140,000 AADT and ARB-recommended volumes of 100,000 ADT. Impacts would be same as Alternative B. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). While the highway realignment in Alternative D would result in a small increase in VMT when through trips are analyzed on their own, this Alternative would also provide similar regional VMT benefits as Alternative B and higher levels of MSAT are not expected. Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Because of the reasons stated above, for the purposes of NEPA, the Alternative D transportation improvements would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.

Mixed-use Development including Replacement Housing

Proposed construction activities and construction duration would be similar for Alternative D mixed-use development, including replacement housing, as compared to Alternative B. The addition of the mixed-use development would result in similar increases in traffic as Alternative B, but peak ADT would also be below FHWA-recommended volumes of 140,000 AADT and ARB-recommended volumes of 100,000 ADT. Impacts would be same as Alternative B. This impact would be less than significant for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). While the additional mixed-use development in Alternative D would result in a small increase in VMT, potential development would contribute to the regional VMT benefit as discussed above for Alternative B. Therefore, similar to Alternative B, this alternative is consistent with the community revitalization objectives of the approved RTP Alternative 3, which results in a beneficial reduction in regional VMT, and higher levels of MSAT are not expected from Alternative D, even with the mixed-use development. Also, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are

projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Because of the reasons stated above, for the purposes of NEPA, the Alternative D mixed-use development sites would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.

Construction of replacement housing at a location other than the three mixed-use development sites could result in a similar potential for exposure of sensitive receptors to air toxics as described for the mixed-use development sites. However, because the location of replacement housing elsewhere is unknown, analysis of potential air toxics impacts would be speculative at this time. Full, project-level environmental review of replacement housing somewhere other than the mixed-use development sites would be required prior to construction of replacement housing and displacement of existing residents.

Conclusion

For the purposes of CEQA and TRPA, taken as a whole, the Alternative D transportation improvements and mixed-use development, including replacement housing, would result in a **less-than-significant** impact as it relates to the exposure of sensitive receptors to air toxics.

For the purposes of NEPA, the design features of the transportation improvements and the mixed-use development sites as part of Alternative D would avoid exposure of sensitive receptors to air toxics such that no additional mitigation measures are needed or feasible to implement.

Alternative E: Skywalk

Construction-related emissions of ROG and NO_X would be lower for Alternative E as compared to Alternative B. Implementation of Alternative E could result in minor increases in traffic, but peak ADT would also be below FHWA-recommended volumes of 140,000 AADT and ARB-recommended volumes of 100,000 ADT. Impacts would be same as Alternative B. This impact would be **less than significant** for the purposes of CEQA and TRPA.

The amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix remains the same as compared to Alternative A (No Project). This alternative would not include highway realignment or community revitalization elements and therefore would not provide similar VMT benefits as discussed under Alternative B. However, emissions would likely be lower than present levels in the design year as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050 (FHWA 2016). Because of the reasons stated above, for the purposes of NEPA, Alternative E would not expose sensitive receptors to air toxics, such that no additional mitigation measures are needed or feasible to implement.

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure 3.13-1a: Reduce short-term construction-related NO_X emissions

This mitigation would apply to the Alternatives B, C, and D transportation improvements and mixed-use development sites for the purposes of NEPA, CEQA, and TRPA.

Measures that Apply to the Transportation Improvements

If the chosen alternative does not include development of the mixed-use sites, for all construction activities, the project proponent shall ensure that construction contractors comply with the following on-site construction measures to reduce emissions of NO_X:

- The prime construction contractor shall submit to EDCAQMD a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that would be used for 40 or more hours, in aggregate, during a construction season. If any new equipment is added after submission of the inventory, the prime contractor shall contact EDCAQMD 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 EDCAQMD 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 Permits, the construction contractor shall submit for EDCAQMD 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 EDCAQMD's Construction Mitigation Calculator.

Measures that Apply to the Mixed-Use Development Sites

If the chosen alternative would include development of the mixed-use sites and anticipated construction timing would not coincide with construction activities associated with US 50 transportation improvements, the project proponent shall ensure that construction contractors comply with the following on-site construction measures to reduce emissions of NO_X:

- All measures as discussed above for the transportation improvements, but shall achieve a project wide fleet average 25 percent reduction in NO_X emissions as compared to ARB statewide fleet average emissions.

If the chosen alternative would include development of the mixed-use sites and anticipated construction timing could potentially coincide with construction activities associated with US 50 transportation improvements, the project proponent shall ensure that construction contractors comply with the following on-site construction measures to reduce emissions of NO_X:

- All measures as discussed above for the scenario for the transportation improvements, but shall achieve a project wide fleet average 60 percent reduction in NO_X emissions as compared to ARB statewide fleet average emissions.

- To achieve a 60 percent reduction in NO_X emissions, the use of US EPA-approved Tier 3 and Tier 4 engines would be required. Any combination of said engines may be used so as the fleet average emissions are reduced by a minimum of 60 percent as compared to the ARB statewide fleet average.

Mitigation Measure 3.13-1b: Reduce short-term construction-related fugitive dust (PM_{10} and $PM_{2.5}$)

This mitigation would apply to the Alternatives B, C, and D transportation improvements and mixed-use development sites, and Alternative E for the purposes of NPEA, CEQA, and TRPA.

To reduce fugitive dust emissions during all construction activities involving earth-moving activities, the prime construction contractor shall implement all available fugitive dust control measures as indicated in Table C.4 and C.5 (Table 3.13-8) in Appendix C-1 of the El Dorado County Air Pollution Control District CEQA Guide (2002) and included below.

Table 3.13-8 Best Available Control Measures

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	◢ Mix backfill soil with water prior to moving. ◢ Dedicate water truck or high capacity hose to backfilling equipment. ◢ Empty loader bucket slowly so that no dust plumes are generated. ◢ Minimize drop height from loader bucket.

Table 3.13-8 Best Available Control Measures

Source Category	Control Measure	Guidance
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	◢ Maintain live perennial vegetation where possible. ◢ Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	◢ Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	◢ Follow permit conditions for crushing equipment. ◢ Pre-water material prior to loading into crusher. ◢ Monitor crusher emissions opacity. ◢ Apply water to crushed material to prevent dust plumes.
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	◢ For large sites, pre-water with sprinklers or water trucks and allow time for penetration. ◢ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition-mechanical/ manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris.	◢ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	◢ Limit vehicular traffic and disturbances on soils where possible. ◢ If interior block walls are planned, install as early as possible. ◢ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	◢ Grade each project phase separately, timed to coincide with construction phase. ◢ Upwind fencing can prevent material movement on site. ◢ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/ exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least 6 inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	◢ Use tarps or other suitable enclosures on haul trucks. ◢ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage. ◢ Comply with track-out prevention/mitigation requirements. ◢ Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	10-1 Stabilize soils, materials, slopes.	◢ Apply water to materials to stabilize ◢ Maintain materials in a crusted condition ◢ Maintain effective cover over materials ◢ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ◢ Hydroseed prior to rainy season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and	◢ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs.

Table 3.13-8 Best Available Control Measures

Source Category	Control Measure	Guidance
	11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	◢ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	◢ Dedicate water truck or high-capacity hose to screening operation. ◢ Drop material through the screen slowly and minimize drop height. ◢ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	◢ Limit size of staging area. ◢ Limit vehicle speeds to 15 mph. ◢ Limit number and size of staging area entrances/exits
Stockpiles/bulk material handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	◢ Add or remove material from the downwind portion of the storage pile. ◢ Maintain storage piles to avoid steep sides or faces.
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	◢ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ◢ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	◢ Pre-watering of soils prior to trenching is an effective preventive measure; for deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench, and resume trenching. ◢ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds 6 inches (CVC 23114)	◢ Empty loader bucket such that no visible dust plumes are created ◢ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	◢ Haul waste material off site immediately.
Unpaved roads/ parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	◢ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Notes: CVC = California Vehicle Code; mph = miles per hour

Source: South Coast Air Quality Management District, Rule 403, June 2005

Significance after Mitigation

Implementation of Mitigation Measure 3.13-1a would reduce NO_X emissions from off-road equipment by 20 percent, 25 percent, or 60 percent depending on the construction activities that take place and specific measures implemented, as outlined by the measure. Based on the modeling conducted for the Alternatives B, C, and D transportation improvements, a 20 percent NO_X reduction would result in maximum daily NO_X emissions of 71 lb/day. If mixed-use development occurs as proposed, and not elsewhere to meet the replacement housing needs, a 25 percent reduction in NO_X emissions would result in a maximum of 79 lb/day. If construction of the mixed-use development sites were to occur simultaneously with the transportation improvements, a 60 percent reduction would result in maximum daily NO_X emissions of 79 lb/day. With incorporation of this measure, all construction-related emissions would be reduced to below EDCAQMD's threshold of 82 lb/day. Because ROG emissions would not exceed applicable thresholds and NO_X emissions would be reduced to levels below the significance thresholds for all build alternatives, CO emissions would also be considered less than significant (EDCAQMD 2002). Further, implementation of Mitigation Measure 3.13-1b would require all alternatives and the potential mixed-use development sites to incorporate and adhere to all available dust control measures, thus minimizing fugitive dust emissions such that PM_{10} and $PM_{2.5}$ would not result in significant levels that could exceed ambient air quality standards. This impact would be reduced to a **less-than-significant** level for all build alternatives and associated mixed-use development, for purposes of CEQA and TRPA.

Because of the reasons stated above, for the purposes of NEPA, environmental consequences of implementing Alternatives B, C, D, and E with the implementation of Mitigation Measures 3.13-1a and 3.13-1b **would not be adverse**.