

3.6 AIR QUALITY / GREENHOUSE GASES

AFFECTED ENVIRONMENT

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Topography and climate/meteorology are also important. The meteorological conditions of wind speed, wind direction, and air temperature gradients interact with physical features of the landscape to determine the movement and dispersal of air pollutants.

The distinctive topographic features of the project area are Lake Tahoe and the Sierra Nevada mountains located adjacent to the project area. The project area also includes high-rise casino towers and an urban environment, with roadways, structural development, and asphalt areas. The Lake Tahoe Basin is considered to have an alpine climate, characterized by cold, wet winters and temperate summers, caused by seasonal movement of a Pacific high-pressure system that migrates north in the summer, and south in the winter. When the high-pressure system moves north in summer, temperatures are typically in the upper 70s and low 80s (degrees Fahrenheit), with low humidity and clear skies, although thunderstorms from tropical area generated in the south are not uncommon. Winter brings highly variable amounts of precipitation in the form of snow with freezing temperatures, winds, and lake and valley fog. Winter thermal inversions in the stable air trap pollutants near the ground, which increases air pollutant concentrations. The South Lake Tahoe area, including Stateline, NV, is prone to elevated winter air pollutant levels as a result of the thermal inversion in conjunction with vehicle and wood stove/fireplace emissions.

The project area is located in Douglas County, Nevada, and is within the boundaries of the Tahoe Regional Planning Agency (TRPA) and the South Shore Area Plan. Located in the High Density Tourist District along U.S. 50, the Proposed Action is adjacent to the primary travel route through the area. Although the project area is not a particularly concentrated area for wood stove emission generation since it is a tourist/commercial area rather than a residential area, winds can blow in wood stove emissions from adjacent residential communities.

Air Quality Standards

The EPA, TRPA, and Nevada Department of Environmental Protection (NDEP) Bureau of Air Pollution Control, regulate air quality within the project area. NDEP utilizes the EPA's air quality standards and has established principal ambient air pollution standards for Nevada, most of which are the same as EPA's standards.

The EPA has established National Ambient Air Quality Standards (NAAQS) for ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), respirable particulate matter (with aerodynamic diameter less than or equal to a nominal 10 micrometers, PM₁₀), fine particulate matter (with aerodynamic diameter less than or equal to a nominal 2.5 micrometers, PM_{2.5}), and airborne lead. The NAAQS are of two types: primary and secondary. Primary standards are designed to protect human health, including the health of "sensitive" populations, such as asthmatics, children, and the elderly, with an adequate margin of safety. Secondary standards are designed to protect public welfare, including protection against decreased visibility and harm to animals, crops, vegetation, and buildings. Areas with air pollution levels above these standards can be designated by the EPA as "nonattainment areas" subject to stringent planning and pollution control requirements. TRPA and Nevada have also developed threshold standards. The standards for various pollutants are shown in Table 3.6-1. California standards

are also included for reference as California air management districts in the TRPA jurisdiction and adjacent to the Project area utilize these standards. The California standards are generally set at concentrations lower than the federal standards and in some cases have shorter averaging periods. This table also shows the TRPA 8-hour CO standard, which is more stringent than the California and national standards.

The Nevada portion of the Lake Tahoe Basin (Douglas County) is in attainment for all criteria air pollutants (EPA, 2018). TRPA designations indicate the area is at or somewhat better than target for ozone and visibility reducing particles, considerably better than target for fine particulate matter (PM_{2.5}) and carbon monoxide, somewhat worse than target for respirable particulate matter (PM₁₀), and has implemented management standards for nitrogen dioxide and odor (TRPA 2012a).

Hazardous air pollutants (HAPs) are pollutants that cause or contribute to an increase in serious illness, mortality, or are otherwise hazardous to human health. Typically, HAPs occur in trace quantities; however, human health risks can occur in response to low concentrations of these pollutants. Since there are no heavy industrial operations in the Project area, HAPs in the vicinity of the Project are attributed to diesel emissions and vehicle exhaust along area roadways, particularly U.S. 50.

Greenhouse Gases

Greenhouse gases (GHGs) are a set of compounds in the atmosphere that absorb more of the outgoing long-wave radiation from the surface of the earth than incoming short-wave solar radiation that affect the global energy balance of the atmosphere-ocean-land system, and thereby affect climate. The regulated GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

GHG emissions impact the world's climate and environment. Climate has been changing throughout history due to forces unrelated to human activity, such as solar energy input variation, volcanic activity, and changing concentrations of key atmospheric constituents like methane and carbon dioxide. Large-scale combustion of fossil fuels (i.e., coal, oil, and natural gas) by humans since the 1800s has resulted in significant increases in emissions of CO₂. The resulting increase in atmospheric levels of CO₂ corresponds to a simultaneous increase in average surface temperatures at many locations around the world.

Sensitive Receptors

A sensitive receptor is a location where people, especially children, the elderly, and persons in ill health might be found, and where there is a reasonable expectation of continuous human exposure, such as residences, hospitals, clinics, elder-care facilities and schools. The Project is adjacent to the MontBleu Casino and Resort, as well as near many other hotels. The nearest residences are located along Irwin Drive, less than 0.5 mile from the Project, while the nearest school is Bijou Community School, located approximately 2 miles southwest of the Project and Tahoe Douglas Christian Preschool approximately one mile north-northeast of the Project.

Table 3.6-1

Ambient Air Quality Standards

Pollutant	Averaging Time	TRPA Threshold Standards ^f	California ^{a,b}	Nevada	National ^c	
					Primary ^{b,d}	Secondary ^{b,e}
Ozone (O ₃)	1-hour	0.08.ppm	0.09 ppm (180 µg/m ³)	0.10 ppm (195 µg/m ³) ^e	–	Same as primary standard.
	8-hour	–	0.070 ppm (137 µg/m ³) LTAB: 0.08 ppm	–	0.075 ppm (147 µg/m ³)	
Carbon Monoxide (CO)	1-hour	–	20 ppm (23 mg/m ³) ^e	35 ppm (40 µg/m ³)	35 ppm (40 mg/m ³)	Same as primary standard.
	8-hour	9 ppm	9.0 ppm (10 mg/m ³) Lake Tahoe: 6 ppm (7 mg/m ³)	6 ppm (7 mg/m ³)	9 ppm (10 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	–	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary standard.
	1-hour	–	0.18 ppm (339 µg/m ³)	–	100 ppb (188 µg/m ³)	–
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	–	–	0.030 ppm ^e (80 µg/m ³)	–	–
	24-hour	–	0.04 ppm (105 µg/m ³)	0.14 ppm ^e (365 µg/m ³)	–	–
	3-hour	–	–	0.5 ppm (1,300 µg/m ³)	–	0.5 ppm (1300 µg/m ³)
	1-hour	–	0.25 ppm (655 µg/m ³) ^e	–	75 ppb (196 µg/m ³)	–
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	–	20 µg/m ³ ^e	50 µg/m ³	–	Same as primary standard.
	24-hour	–	50 µg/m ³ ^e	150 µg/m ³	150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	–	12 µg/m ³ ^e	–	12.0 µg/m ³	15 µg/m ³
	24-hour	–	–	–	35 µg/m ³	Same as primary standard.

Pollutant	Averaging Time	TRPA Threshold Standards ^f	California ^{a,b}	Nevada	National ^c	
					Primary ^{b,d}	Secondary ^{b,e}
Lead (Pb)	Calendar Quarter	–	–	1.5 µg/m ³	1.5 µg/m ³	
	30-day Average	–	1.5 µg/m ³	–	–	Same as primary standard
	Rolling 3-Month Average	–	–	–	0.15 µg/m ³	Same as primary standard
Hydrogen Sulfide (H ₂ S)	1-hour	–	0.03 ppm (42 µg/m ³)	0.08 ppm (112 µg/m ³)	No national standard.	
Sulfates	24-hour	–	25 µg/m ³	–		
Vinyl Chloride	24-hour	–	0.01 ppm (26 µg/m ³)	–		
Visibility-Reducing Particles	8-hour (10am to 6pm PST)	Regional: Extinction coefficient of 25 Mm ⁻¹ (157 km, 97 miles) 50 percent of the year, 34 Mm ⁻¹ (115 km, 71 miles) 90 percent of the year. Subregional: 50 Mm ⁻¹ (48 miles) 50 percent of the year, 125 Mm ⁻¹ (19 miles) 90 percent of the year.	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent (0.07 per kilometer for the LTAB).	No state standard.	No national standard.	

Notes: µg/m³ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million; TRPA = Tahoe Regional Planning Agency

- a. California standards for ozone, CO (except for 8-hour Lake Tahoe), SO₂ (1-and 24-hour), NO_x, particulate matter (PM₁₀ and PM_{2.5}), 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.
- b. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr. ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- c. 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 PM₁₀ 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
- d. National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- e. National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- f. Applicable in the Lake Tahoe Basin. The CO limit is discussed in Table 3-1 of TRPA, *2011 Threshold Evaluation Report*, October 2012.
- g. 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.
- h. 3-year average of 98th percentile of yearly 1-hour daily maximum concentrations.
- i. 3-year average of 99th percentile of yearly 1-hour daily maximum concentrations.
- j. EPA. National Ambient Air Quality Standards for Particulate Matter, Final Rule, Federal Register, Volume 78, No.10, pp. 3086-3287, January 15, 2013.

IMPACT EVALUATION CRITERIA

The California Emissions Estimator Model (CalEEMod) version 2016.3.2, an air emissions modeling program, provides a quantification of emissions levels during construction and operation. The model also quantifies greenhouse gas emissions to determine if impacts occur. The analysis of the Proposed Action utilizes these modeling results. Modeling is based on the Project but does not account for any reduction of vehicle trips associated with the proposed paid parking and micro transit programs in order to provide a more conservative analysis. The modeling conservatively assumed that project construction/grading phases could begin as early as 2020 and project improvements are anticipated to take up to 21 to 24 months spread out over 3 calendar years, with completion in early 2022. Consistent with SMAQMD guidance and TRPA standards used for the U.S. 50/South Shore Community Revitalization Project, construction activities were summed and amortized over 25 years to represent annual emissions over the life of the project. Note that SMAQMD guidance allows non-residential projects to amortize construction emissions over 40 years. However, for a conservative estimate (i.e., to avoid the risk of understating the impact), a 25-year life span for the project was applied to the emissions modeling. For a detailed description of model input and output parameters and assumptions, refer to Appendix G.

Criteria Air Pollutants, Emission Limits, and Ambient Air Quality Standards

Neither EPA nor the State of Nevada have established quantitative environmental impact thresholds of significance for air quality under NEPA. The TRPA threshold standards are being applied in this analysis. Since mass emissions significance criteria have not been adopted by NDEP or Douglas County, a criterion of 82 pounds per day of ROG, NO_x, or PM₁₀ emissions, which is used by other adjacent jurisdictions and TRPA, is applied in this analysis to determine whether a violation of air quality standards would occur. An air quality impact is defined as a significant increase of the air emissions level in the area, resulting in air quality levels that exceed air quality thresholds listed in Table 3.6-1, generate 82 pounds per day or more of ROG, NO_x, or PM₁₀, or exacerbate existing high levels of criteria pollutants. In addition, an impact occurs if Project air emissions conflict with implementation of an applicable air quality plan, expose sensitive receptors to substantial pollutant concentrations or objectionable odors. In regard to criteria pollutants significant impacts also occur when the Project results in construction generated emissions that exceed NDEP standards for heavy-duty equipment opacity and PM emissions-fugitive dust standards.

For construction activities, the adjacent El Dorado County Air Pollution Control District (EDCAPCD) established a project-level average daily pollutant emission significance threshold of 82 lbs/day for NO_x or ROG emitted by any combination of equipment.¹ Construction emissions of PM₁₀ or CO should not violate ambient air quality standards. Heavy-duty Diesel-fueled mobile pieces of equipment are the dominant sources of criteria pollutant emissions generated by construction.

For operation of a proposed project, the same project-level average daily significance threshold of 82 lbs/day was set by the District for NO_x or ROG emissions² from all sources. The District considers CO, PM₁₀ and SO₂ emissions from operation of a land development project to be less than significant if the NO_x and ROG emissions from the project are less than the same 82 lbs/day limit.³

1 El Dorado AQMD. *Guide to Air Quality Assessment: Determining Significance of Air Quality Impact Under the California Environmental Quality Act (CEQA)*, First Edition, Chapter 4, Table 4.10, page 17, February 2002,

http://www.edcgov.us/Government/AirQualityManagement/Guide_to_Air_Quality_Assessment.aspx

2 El Dorado AQMD. *Guide to Air Quality Assessment: Determining Significance of Air Quality Impact Under the California Environmental Quality Act (CEQA)*, First Edition, Chapter 5, Table 5.1, page 2,

http://www.edcgov.us/Government/AirQualityManagement/Guide_to_Air_Quality_Assessment.aspx

3 El Dorado AQMD. *Guide to Air Quality Assessment: Determining Significance of Air Quality Impact Under the California*

The TRPA operational emission significance thresholds are also shown in Table 3.6-2.

Table 3.6-2

Construction and Operational Criteria Pollutant Emission Significance Thresholds

Pollutant	Peak 24-Hour Emission Rate, lbs		
	AQMD		TRPA
	Construction	Operation	Operation
NO _x	82	82	24.2
VOC	82	82	125.7
PM ₁₀	Does not violate AAQS	Less than significant if the above NO _x /VOC limit is not exceeded.	22.0
CO	Does not violate AAQS		220.5
SO ₂	None published.		13.2

Cumulative impact criteria have not been adopted by NDEP or TRPA; therefore, criteria used by the EDCAPCD, adjacent to Douglas County is applied for this Project. According to EDCAPCD, proposed project emissions of ROG or NO_x would be considered cumulatively significant if one or more of the following conditions is met:

- The project requires a change in the existing land use designation (i.e., general plan amendment⁴, rezone), and projected emissions (ROG, NO_x, CO, or PM₁₀) are greater than the emissions anticipated for the site if developed under the existing land use designation;
- The project would individually exceed any significance criteria in this AQMD’s Guide to Air Quality Assessment⁵;
- For impacts that are determined to be significant under this AQMD’s Guide to Air Quality Assessment, the Lead Agency for the project does not require the project to implement the emission reduction measures contained in and/or derived from the Air Quality Attainment Plan⁶; or
- The project is located in a jurisdiction that does not implement the emission reduction measures contained in and/or derived from the Air Quality Attainment Plan.

Environmental Quality Act (CEQA), First Edition, Chapter 6, page 2,
[http://www.edcgov.us/Government/AirQualityManagement/Guide to Air Quality Assessment.aspx](http://www.edcgov.us/Government/AirQualityManagement/Guide%20to%20Air%20Quality%20Assessment.aspx)
⁴ TRPA, *Lake Tahoe Regional Plan*, December 12, 2012, <http://www.trpa.org/regional-plan/>; TRPA, *Mobility 2035 Regional Transportation Plan*, December 12, 2012; <http://tahoempco.org/Mobility2035/>; and El Dorado County, *County of El Dorado Adopted General Plan*, July 19, 2004,
https://www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx
⁵ El Dorado AQMD. *Guide to Air Quality Assessment: Determining Significance of Air Quality Impact Under the California Environmental Quality Act (CEQA), First Edition*, February 2002,
[http://www.edcgov.us/Government/AirQualityManagement/Guide to Air Quality Assessment.aspx](http://www.edcgov.us/Government/AirQualityManagement/Guide%20to%20Air%20Quality%20Assessment.aspx).
⁶ SMAQMD. *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions)*, September 26, 2013, <http://www.airquality.org/plans/federal/ozone/8hr1997/2008ROP/index.shtml>

For projects that are principally development projects, or where the majority of the emissions of these pollutants is attributable to motor vehicle sources (e.g. the Project proposed herein), a project's emissions of PM₁₀, SO₂, or NO₂ will not be considered cumulatively significant if the following conditions are met:

- a. The project is not significant for "project alone" emissions of these pollutants;
- b. The project complies with all applicable rules and regulations of the District; and
- c. The project is not cumulatively significant for ROG, NO_x, and CO based on the criteria set forth above.

EDCAPCD guidance⁷ states that a project's air toxics emissions will not be considered cumulatively significant if the "project alone" air toxics emissions do not cause a significant impact.

Concerning atmospheric deposition of nitrogen or phosphorus into Lake Tahoe, neither the TRPA nor any other regulatory agency has set a criterion or threshold for the amount of deposition from project NO_x emissions that would be considered significant.

Greenhouse Gas Emissions Standards

For GHGs, the Council on Environmental Quality has established a project emissions threshold level of 25,000 MT CO₂e/GHG emissions. In addition, an air quality or GHG impact would occur if the project conflicts with applicable plan, policy, or regulation adopted for the purpose of reducing criteria pollutant or GHG emissions.

Current, more conservative, guidance indicates that a project would result in a cumulatively considerable contribution to climate change if the project results in construction-related GHG emissions that exceed the recommended threshold of 1,100 MTCO₂e per year as recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and other air districts in the area. In 2017, California Air Resources Board released *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*, which guides future actions to reach the 2030 target of a 40 percent reduction in GHG emissions below 1990 statewide GHG emissions that was established by Executive Order B-30-15 and Senate Bill 32. To assess consistency with California's 2030 GHG target of 40 percent below 1990 levels, the SMAQMD threshold of 1,100 MTCO₂e/year, established for the purpose of reducing 2020 statewide emission to 1990 levels (2020 target), has been adjusted down by 40 percent to 660 MTCO₂e/year (2030 target). It is also consistent with the standard recently used by TRPA in the US 50/South Shore Community Revitalization Project EIR/EIS/EIS and reflects the recent GHG Inventory and reduction targets issued by the State of Nevada [footnote DCNR's recent inventory.

GHG planning guidance for the the Lake Tahoe Basin is outlined in the TMPO Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) which anticipates reducing GHG emissions per person by 12% in 2020 and 7% in 2035, to be accomplished by focusing on regional land use and transportation policies. Strategies in the 2017 RTP/SCS include transit programs (free-to-the-user transit, transit priority access, transit schedule coordination, etc.), parking management, and others, some of which are proposed by this project (pedestrian improvements, microtransit shuttle service, and a casino core paid parking program).

⁷ Ibid, page 4.

ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION

CalEEMod 2016.3.2 was run to evaluate air emissions emitted by project construction and operation, with and without built in mitigation assumptions, for the proposed Project. The inputs used to run the model and results are included in Appendix G and presented in the Tables 3.6-4 through 3.6-7. Complete trip reduction credits anticipated from implementation of the year-round paid parking and ~~summer~~ microtransit shuttle programs was not accounted for in the modeling. For the model assumptions, no new vehicle trips were included for operations ~~during the summer peak period~~, but this is considered a conservative input assumption as the traffic analysis documented in Section 3.5 demonstrates anticipated annual reductions in vehicle trips because of the year-round paid parking and microtransit programs included in the Project. Therefore, the actual operational mobile source emissions levels could have been reported as a net reduction in emissions and less than what is shown in the tables with implementation of those programs under the Proposed Action. The assumptions used to calculate daily and annual vehicle trips generated from operation of the TSEC and its associated paid parking and microtransit programs (when applicable) is provided in Table 3.6-3. The calculations show a net reduction in total annual trips based on reductions in existing casino area traffic that would result ~~during days~~ when paid parking and microtransit operations are in effect. Reductions exceed the new trips that would be generated by TSEC operations.

Table 3.6-3

Daily Vehicle Trip Ends for Annual Events Center Operations

Event Generation (Including Other Trips Made by Overnight Visitors in Tahoe on Day of Event)												
Type of Event		Attendees	Emp- loyees	Daily Trips							Days per Year	Annual Trips
				Direct Event Attendee Trips	Additional Event Attendee Trips in Tahoe Basin	Total Attendee Trips	Event Employee Trips	Utility Trips	Total Daily Trips			
Concert/ Entertainment	Peak	6,000	225	2,847	4,756	7,603	194	100	7,897	12	95,000	
	Typical	2,500	75	1,302	1,980	3,282	65	40	3,387	18	61,000	
Conventions/ Conferences	Peak	2,500	50	1,229	2,952	4,182	43	40	4,265	9	38,000	
	Typical	450	40	221	531	753	34	10	797	6	5,000	
Public/ Consumer Shows	Peak	2,500	65	1,475	347	1,822	56	40	1,918	6	12,000	
	Typical	2,100	50	1,239	292	1,531	43	40	1,614	4	6,000	
Corporate/ Association Meetings	Peak	4,800	130	2,492	6,468	8,961	112	80	9,153	14	128,000	
	Typical	450	40	234	606	840	34	10	885	102	90,000	
Sporting Events	Peak	4,200	150	2,194	4,960	7,153	129	70	7,353	4	29,000	
	Typical	2,100	50	1,097	2,480	3,577	43	40	3,660	5	18,000	
Banquets/ Receptions/Other	Peak	1,900	40	1,121	264	1,385	34	30	1,449	10	14,000	
	Typical	1,200	30	708	167	875	26	20	920	30	28,000	
									Subtotal	220	524,000	
Permanent Employees									11	255	3,000	
Total											527,000	

Change in Existing Trips Due to Paid Parking / Microtransit			
Daily Vehicle Trip Reduction on Busy Summer Day			
Visitor Trips Impact of Paid Parking			-3,220
Visitor Trip Impact of Microtransit			-315
Employee Trip Impact of Microtransit			-135
Total			-3,670
Factor: Average Peak Summer Month (July) Day to Peak Summer Day		90%	
Reduction on Average July Day			-3,303
	Month	Percent of Peak Month Based on Lodging Occupancy	Average Daily Reduction in Month
	Jan	70%	-2,306
	Feb	64%	-2,117
	Mar	64%	-2,130
	Apr	61%	-2,020
	May	58%	-1,921
	Jun	84%	-2,773
	Jul	100%	-3,303
	Aug	90%	-2,974
	Sep	57%	-1,895
	Oct	66%	-2,184
	Nov	58%	-1,931
	Dec	71%	-2,348
	Total Annual		-850,000
Net Change in Annual Vehicle-Trips			-323,000

Event Center Operational Scenarios	Number of Event Days¹	DVTE²	Total Trips
1. Peak summer day with event (assume 2,500 persons worst case) and paid parking/microtransit	40	-2,219	-88,760
2. Peak summer day without event and paid parking/microtransit	45	-3,541	-159,345
3. Off-peak day with event (assume 6,000 persons worst case) and paid parking (key	25	-337	-8,425

TAHOE SOUTH EVENTS CENTER PROJECT EA
AIR QUALITY/GREENHOUSE GASES

weekends and holiday periods)			
4. Off peak day with event (with a calculation of an average daily attendance number) and no paid parking	155	1,322	204,910
5. Off peak day without event and without paid parking	85	51	4,335
6. Off peak day without event and with paid parking	15	-2,431	-36,465
Annual Total	365		-87,750

Source: Hauge Brueck Associates, TDVA, Section 3.5 Traffic Analysis

Notes:

1. ~~Analysis assumes year-round paid parking and microtransit shuttle service.~~
2. ~~Bold entries indicate number of days with events at the TSEC. Up to 130 annual events are assumed per year with total event days of 220 based on the Event Center Fiscal and Economic Analysis; EPS, July 13, 2018.~~
23. ~~DVTE value used for each scenario based on calculations from Section 3.5 – traffic analysis. The valued used for row 6, off peak day without event and with paid parking was calculated by factoring paid parking benefit for peak summer period using differences in traffic volumes on US Highway 50.~~

Table 3.6-4

Proposed Action – Unmitigated Daily Construction Emissions (lbs/day)

Construction Year	NOx	CO	ROG	SO₂	PM₁₀	PM_{2.5}
2020	43.13	27.33	3.86	0.07	10.51	5.27
2021	21.46	20.66	10.29	0.05	2.54	1.21
2022	0.43	0.43	0.05	0.001	0.05	0.02
Maximum Daily Construction Emissions (rounded)	43.13	27.33	10.29	0.05	10.51	5.27
Significance Thresholds:	82	--a	82	--a	--a	None
Significant Impact?	No	No	No	No	No	No

Source:

Notes: lb/day = pounds per day; ROG = reactive organic gases; NOX = oxides of nitrogen; SO₂ = sulfur dioxide; PM₁₀ = 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

^a The EDCAPCD considers these emissions less than significant if the NOx and VOC/ROG emissions are quantitatively determined to be less than significant

Table 3.6-5

Proposed Action – Annual Unmitigated Construction Emissions (tons/year)

Construction Year	NOx	CO	ROG	SO₂	PM₁₀	PM_{2.5}	CO₂	CH₄	N₂O	MTCO_{2e}
2020	7.87	4.99	0.71	0.01	1.92	0.96	1,226	0.17	0.0	1230
2021	3.92	3.77	1.88	0.009	0.46	0.22	843	0.09	0.0	846
2022	0.08	0.08	0.009	0.0002	0.009	0.004	18	0.002	0.0	18
Total Project Construction Emissions Over a 3-Year Period (rounded)	11.87	8.84	2.51	0.02	2.39	1.18	2,087	0.26	0.0	2,094
Annual GHG Construction Emissions (amortized over 25 years)										83.76
Threshold of Significance (MTCO_{2e}/year)										660
Significant Impact?										No

Notes: lb/day = pounds per day; ROG = reactive organic gases; NOX = oxides of nitrogen; SO₂ = sulfur dioxide; PM₁₀ = 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; MTCO_{2e} = metric tons of carbon dioxide equivalents.

Table 3.6-6

Proposed Action – Unmitigated Maximum Daily Operation Emissions (lbs/day)

	NOx	CO	ROG	SO₂	PM₁₀	PM_{2.5}
Area	0.0001	0.01	3.26	0.00	0.00005	0.00005
Energy	0.10	0.09	0.011	0.0006	0.008	0.008
Mobile ¹	0.00	0.00	0.00	0.00	0.00	0.00
Stationary	0.15	0.51	0.037	0.003	0.039	0.039
Waste	-	-	-	-	-	-
Water	-	-	-	-	-	-
Total Daily Emissions (rounded)	0.25	0.61	3.31	0.0036	0.047	0.047
Significance Thresholds:	24.2	220.5^a	82	13.2^a	22.0^a	None
Significant Impact?	No	No	No	No	No	No

^a These emissions are less than significant if the NOx and VOC/ROG emissions are quantitatively determined to be less than significant.

Note: 1. Calculations are based on summer time peak period events capped at 2,500 persons and with year-round paid parking and microtransit programs in place ~~during summer period and other key weekends and holidays (e.g., when events would exceed 80% of capacity)~~. Up to 130 events anticipated to occur over a period of approximately 220 days per year.

Mobile emissions under the Proposed Action could be less than 0 based on the implementation of the year-round paid parking and ~~summer~~ shuttle programs, as documented in Table 3.6-3.

Table 3.6-7

Proposed Action – Unmitigated Annual Operation Emissions (tons/year)

	NOx	CO	ROG	SO₂	PM₁₀	PM_{2.5}	CO₂	CH₄	N₂O	MTCO_{2e}
Area	0.00002	0.0021	0.5956	0.00	0.00001	0.00001	0.00407	0.00001	0.0	0.00434
Energy	0.0187	0.0157	0.0021	0.0001	0.0014	0.0014	347.58	0.0075	0.0019	348.32
Mobile ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stationary	0.0271	0.0936	0.0068	0.00054	0.0071	0.0071	96.97	0.0020	0.0	97.02
Waste	-	-	-	-	-	-	0.0426	0.0025	0.0	0.106
Water	-	-	-	-	-	-	12.49	0.011	0.0026	16.03
Total Annual Operation Emissions (rounded)	0.046	0.111	0.605	0.0006	0.0085	0.0085	457.09	0.023	0.0045	461.48
Threshold of Significance (MTCO_{2e}/year)										660
Significant Impact?										No

Notes: lb/day = pounds per day; ROG = reactive organic gases; NOX = oxides of nitrogen; SO₂ = sulfur dioxide; PM₁₀ = 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; MTCO_{2e} = metric tons of carbon dioxide equivalents.

1. Calculations are based on summer time peak period events capped at 2,500 persons and with year-round paid parking and microtransit programs in place ~~during summer period and other key weekends and holidays (e.g., when events would exceed 80% of capacity)~~. Up to 130 events anticipated to occur over a period of approximately 220 days per year. *Mobile emissions under the Proposed Action could be less than 0 based on the implementation of the year-round paid parking and ~~summer~~ shuttle programs, as documented in Table 3.6-3.*

There are no impacts associated with the No Action alternative.

Impact: Create Substantial Increase in Air Pollutant Emissions, Deteriorate Existing Air Quality, or Conflict with or Obstruct Implementation of the Applicable Air Quality Plan? (TRPA 2.a, 2.b)

Analysis: The Proposed Action would establish a new regional indoor entertainment venue that would provide space for sports events, performances, and conventions/banquets. The facility would be used for scheduled, large events, with a large spectator base, such as semi-professional hockey, regional tournaments or competitions, or large sports clinics. The building would have a seating capacity for 6,000 spectators, and would also serve as an office for the TDVA and TSEC management. Events would not occur on a daily basis, but the office portion of the Proposed Action would be utilized regularly. Approximately 130 events would occur annually at varying levels of attendance over approximately 220 total days, with occupancy ranging from several hundred persons up to 6,000 attendees depending on the type of event and associated use configuration. During summer peak season periods (~~mid~~-June 15th through Labor Day weekend), occupancy of the TSEC would be limited to 2,500 persons per day as described in the project description.

Construction emissions would result from the use of heavy mobile equipment for site preparation, grading, and construction of the TSEC and from production and delivery of building materials. Such construction sources emit criteria pollutants (PM10, PM2.5, CO, NOX, and ROG), air toxics, and GHGs from combustion of diesel fuel, and fugitive dust from the motion of wheels and tracks. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. Construction is anticipated to occur over a three year period beginning in summer 2020, with active construction occurring during approximately 21-24 months over the 3 calendar year period, allowing for seasonal restrictions on construction activity. Demolition, site preparation and grading would occur over a five-month period, overlapped by a 20-month period for building construction, paving and architectural coatings. Equipment used during construction includes concrete saws, excavators, dozers, tractors, loaders, backhoes, graders, scrapers, cranes, forklifts, generators, welders, pavers, rollers, and air compressors.

As shown in Tables 3.6-4 through 3.6-7 above, Project construction and operation would not generate emissions that exceed applicable daily or annual standards/thresholds or deteriorate air quality or conflict with adopted air quality plans. The Proposed Action would likely result in fewer operational emissions than shown in the tables above due to implementation of the year-round paid parking program and ~~summer~~-shuttle program, which would result in a reduction of existing daily vehicle trips but was not included in the assumptions.

All alternatives would result in higher operational emissions because the paid parking and microtransit programs would not be implemented and vehicle trips for events would not be offset by reductions to existing vehicle trips from the two programs. For Alternative B, construction emissions would be higher because of greater volumes of excavation and associated haul trips associated with additional debris. The Alternative B increase in emissions associated with additional excavation and material hauling would not result in an emissions increase above thresholds. However, operational impacts under alternatives A, B and C would exceed annual GHG targets because of the increase in mobile emissions which adds approximately 1,325 MTCO₂e of emissions to the Project totals disclosed in Table 3.6-7. As discussed in the project description (Chapter 2), the

Proposed Action and Alternatives include air quality best management practices per TRPA Code. No significant impact would occur under the Project, but would occur under Alternatives A, B, and C because of no paid parking and microtransit programs.

Mitigation: Project: No mitigation is required.

Alternatives A, B, and C: Implement Paid Parking and Microtransit Programs as currently proposed for the Proposed Action.

Impact: Expose Sensitive Receptors to Substantial Pollution Concentrations

Analysis: As discussed in the setting, the nearest sensitive receptors are located within 0.5 mile from the project area. The Proposed Action and Alternatives A, B, and C would be located too far from the nearest residences to cause a significant impact. Tourist accommodations do not house permanent or long-term residents who would be measurably exposed to pollutants. Furthermore, the construction and operation of the TSEC is not anticipated to generate substantial pollutant concentrations. Up to 130 events are anticipated to take place over approximately 220 days annually. Since events would not be held on a daily basis, exposure to any levels of increased pollutants would be intermittent. No substantial pollutant concentrations are anticipated as shown on the tables above.

Mitigation: No mitigation is required.

Impact: Create Objectionable Odors (TRPA 2.c)

Analysis: The Proposed Action would develop a new community entertainment venue that accommodates a different variety of entertainment options. While banquets and small conferences can be accommodated in the existing casino facilities, the proposed TSEC would also facilitate theater and concert events, as well as a range of sporting events including hockey, volleyball, and basketball. These activities and operation of the TSEC would not generate objectionable odors. Trash generated during events would be compacted at the rear of the facility and removed regularly.

Construction would involve the use of diesel-fueled construction equipment. Odors associated with diesel-fueled construction equipment would be temporary in nature, and would be located too far from the nearest residences to cause a significant impact.

The same impacts would occur under Alternatives A, B, and C and no significant impact from construction or operation would occur.

Mitigation: No mitigation is required.

Impact: Generate More Than 660 MT CO₂e GHG Emissions to Alter Air Movement, Moisture or Temperature, or Change Climate Locally or Regionally (TRPA 2.d)

Analysis: Based on the modeling conducted and documented in Tables 3.6-5 and 3.6-7, the total annual GHG emissions from construction activities and operations would be less than the quantitative threshold selected from SMAQMD standards. Total MTCO₂e emissions over the combined 21-24 months of construction would result in 2,094 MTCO₂e, with a maximum annual construction output of 1,230 MTCO₂e during the initial demolition and grading phases of construction in 2020. When combined with all other construction phases and amortized over the life of the project, total annual construction emissions (84 MTCO₂e) would not exceed applicable thresholds of 1,100 MTCO₂e (2020 target) or 660

MTCO₂e (2030 target). CalEEMod modeling shown in Table 3.6-7 indicates operation of the TSEC is anticipated to generate 461 MTCO₂e annually, on average, with no mitigating features factored, except for the assumption of no increase in annual vehicle trips as a result of implementation of paid parking and microtransit shuttle programs ~~in summer and other busy weekends and holidays~~. The overall annual decrease in vehicle trips documented in the traffic analysis (Section 3.5 and the LSC memo dated March 4, 2020) and Table 3.6-3 for annual operations was not factored into the analysis. For modeling purposes, zero new vehicle trips was used for TSEC operations rather than the annual reduction of ~~87,750~~323,000 trips. Mitigating features, such as pedestrian accessibility, transit stop improvements, installation of energy and water efficient fixtures and appliances, and water-efficient landscaping and irrigation, would reduce operations emissions to 337 MTCO₂e annually. The Proposed Action will therefore not result in a significant impact.

Alternatives A and C would result in a higher level of operational GHG emissions than the Proposed Action since they do not include the microtransit shuttle or paid parking programs. Total MTCO₂e emissions over a combined three years of construction would be equal to the Project as reported above, and below the annual threshold. Under the alternatives, CalEEMod modeling calculates that operation of the TSEC would increase MTCO₂e by 1,325 annually, on average, with no mitigating features factored, because these alternatives do not include the paid parking and microtransit shuttle programs. Mitigating features, such as pedestrian accessibility, transit stop improvements, installation of energy and water efficient fixtures and appliances, and water-efficient landscaping and irrigation, would reduce annual operations emissions somewhat, but they would still exceed the 660 MTCO₂e threshold limit. Alternative B would relocate the TSEC to the rear of the parcel away from US 50. Operational impacts would be the same as Alternatives A and C as the building would provide the same capacity and operating systems. Construction would involve an increase in ground disturbance and grading and a decrease in pavement demolition. GHG emissions levels are anticipated to be essentially the same as Alternatives A and C, with some variation per pollutant, yet still well below emissions limits. However, because of annual mobile emissions associated with new trip generation, Alternatives A, B and C would each exceed operational GHG emission thresholds and this impact is significant.

Mitigation: Project: No mitigation is required.

Alternatives A, B, and C: Implement Paid Parking and Microtransit Programs as currently proposed for the Proposed Action.

Impact: Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs or Increase Use of Diesel Fuel (TRPA 2.e)

Analysis: The GHG emissions from construction and operation of the Proposed Action would not conflict with the GHG-related plans, policies or regulations. The Project and Alternatives would not conflict with federal, state, or TRPA applicable plans, policies, or regulations for reducing GHG emissions. Diesel fuel consumption would occur and increased vehicle trips would likewise occur; however, the location of the TSEC adjacent to existing tourist accommodations, and near existing residential areas surrounding the tourist and commercial core improve pedestrian and transit access to the proposed facility, and reduce overall reliance on vehicle trips to access the facility. For the Proposed Action, the microtransit ~~summer~~-shuttle and paid parking programs would reduce vehicle trips and associated use of diesel fuel to better achieve GHG reduction goals.

As shown in the traffic analysis (Section 3.5), the Proposed Action (evaluated for a 2,500-attendee event in summer) results in an increase of ~~13,636~~25,873 daily VMT with an additional ~~344~~566 VMT generated by the microtransit shuttle that is offset by the reduction of ~~35,391~~693 existing VMT due to the paid parking and microtransit programs. Adding 760 VMT generated by drivers searching for parking spaces to these figures ~~This~~ results in a net decrease of ~~21,411~~8,494 VMT in the Tahoe Basin over the course of the summer design day. This improvement represents a region-wide VMT reduction from existing conditions by approximately ~~48.4~~ percent. The paid parking program is estimated to eliminate ~~3,541~~3,220 existing one-way vehicle trips within the casino core per busy summer day. Although some increase in peak hour trips would occur on days when maximum summertime events (2,500 attendees) are held, the net impact is an overall reduction in total summer and annual trips. When a 2,500-person summer event is held, it would generate ~~1,322~~302 daily one-way vehicle trips at casino access points. These trips would be offset by the overall ~~3,541~~3,670 daily one-way vehicle trip reduction from paid parking and microtransit operation, for a net reduction of ~~2,219~~368 daily one-way vehicle trips.

The Proposed Action supports various policies of the 2017 Tahoe Metropolitan Planning Organization Regional Transportation Plan/Sustainable Communities Strategy (TMPO RTP/SCS) including Policy 1.6 (Require commercial interests to participate in transportation demand programs and projects), Policy 2.2 (Provide frequent transit service to major summer and winter recreational areas), Policy 2.4 (Improve the transit system for the user making it frequent, fun, and free in targeted locations), Policy 2.16 (Encourage parking management programs that incentivize non-auto modes and discourage private auto-mobile use at peak times in peak locations....), and promotes transit and pedestrian improvements onsite to further the goals of the RTP/SCS.

Although the Alternatives would not include the paid parking and ~~summer~~ shuttle programs, the location of the TSEC adjacent to existing tourist accommodations, near residential areas, and with the proposed improvement of the transit stop and pedestrian access, the Alternatives would not conflict with GHG reduction strategies.

Mitigation: No mitigation is required.

REFERENCES

EPA. 2018. My Environment – Nevada, MyMaps, <https://www3.epa.gov/myenv/>. Accessed April 30, 2018.

California Emissions Estimator Model™ CalEEMod. 2016.3.2, <http://www.caleemod.com/> and <http://www.capcoa.org/caleemod/>

TRPA, *2015 Threshold Evaluation*, Chapter 3 – Air Quality, Table 3-1 (TRPA threshold standards and state and federal air quality standards addressed for Tahoe regional air quality, p. 3-6, http://www.trpa.org/wp-content/uploads/POST_9_23_RELEASE_EDITS_Ch3_AirQuality-Edits-Accepted.pdf

TRPA, *Regional Plan Update Draft EIS*, Chapter 3.5 – Greenhouse Gas Emissions and Climate Change, page 3.5-24, April 2012, http://www.trpa.org/wp-content/uploads/3.5_GHG_Climate_Change.pdf

TMPO. *2017 Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy Horizon Year 2017-2040*. http://www.trpa.org/wp-content/uploads/2017-Regional-Transportation-Plan_Final.pdf

EPS. July 2018. Draft Technical Memorandum, Event Center Fiscal and Economic Analysis.