

3.7 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions; a summary of climate change science and GHG sources in California; quantification of GHGs generated by the Tahoe Cross-Country Lodge Replacement and Expansion Project (Project) accompanied by a discussion about its contribution to global climate change; and analysis of the Project's resiliency to climate change-related risks. During the NOP scoping process, comments were raised indicating that the EIR should evaluate these impacts against applicable thresholds of significance.

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

3.7.1 Regulatory Setting

FEDERAL

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFÉ) standards for light-duty vehicles for model years 2017 and beyond (77 Federal Register [CFR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO₂ per mile for the fleet of cars and light-duty trucks by model year 2025 (77 CFR 62630). However, on April 2, 2018, the U.S. Environmental Protection Agency (EPA) administrator announced a final determination that the current standards are not appropriate and should be revised. It is not yet known what revisions will be adopted or when they will be implemented (EPA 2018).

In January 2017, EPA Administrator Gina McCarthy signed her determination to maintain the current GHG emissions standards for model year 2022–2025 vehicles. However, on March 15, 2017, the then EPA Administrator, Scott Pruitt, and Department of Transportation Secretary Elaine Chao announced that EPA intends to reconsider the final determination. On August 12, 2018, EPA proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule which would amend CAFÉ standards. The SAFE Vehicles Rule is currently undergoing public review and comment.

Clean Power Plan

In 2015, EPA unveiled the Clean Power Plan. The purpose of the plan was to reduce CO₂ emissions from electrical power generation by 32 percent relative to 2005 levels within 25 years. EPA is proposing to repeal the Clean Power Plan because of a change to the legal interpretation of Section 111(d) of the federal Clean Air Act, on which the Clean Power Plan was based. The comment period on the proposed repeal closed April 26, 2018. A final ruling by EPA has not yet been issued.

TAHOE REGIONAL PLANNING AGENCY

The Tahoe Regional Planning Agency (TRPA) has not specifically identified any goals, policies, or Environmental Threshold Carrying Capacities (environmental threshold standards) directly related to GHG emissions or climate change. Through its Regional Plan and Code of Ordinances, however, TRPA has defined conformance requirements

for area plans relative to GHG reduction strategies. In addition, through its Regional Transportation Plan and Sustainability Action Plan, both prepared in partnership with the Tahoe Metropolitan Planning Organization (TMPO), TRPA addresses GHG reduction targets for cars and light trucks mandated by Senate Bill (SB) 375 and defines a GHG emissions target and broader GHG reduction strategies, respectively.

Regional Plan and Code of Ordinances

The Regional Plan Update Environmental Impact Statement (RPU EIS) proposed mitigation measures to address potentially significant impacts of GHG emissions from implementation of the Regional Plan. Mitigation Measure 3.5-1 of the RPU EIS required TRPA to coordinate implementation of a GHG Emission Reduction Policy through TRPA-approved plans, project permitting, or projects/programs (TRPA 2012). In accordance with that measure, Subsection 13.5.3.E, Greenhouse Gas Reduction Strategy, was added to the TRPA Code of Ordinances in November 2013. It requires area plans to include a strategy to reduce GHGs from the construction and operation of buildings. Specifically, Subsection 13.5.3.E reads:

Greenhouse Gas Reduction Strategy. To be found in conformance with the Regional Plan, area plans shall include a strategy to reduce emissions of greenhouse gases from the operation or construction of buildings. The strategy shall include elements in addition to those included to satisfy other state requirements or requirements of this code. Additional elements included in the strategy may include but are not limited to the following:

- ▶ a local green building incentive program to reduce the energy consumption of new or remodeled buildings;
- ▶ a low interest loan or rebate program for alternative energy projects or energy efficiency retrofits;
- ▶ modifications to the applicable building code or design standards to reduce energy consumption; or
- ▶ capital improvements to reduce energy consumption or incorporate alternative energy production into public facilities.

The following provision of Chapter 33, Air Quality and Transportation, of the TRPA Code of Ordinances is applicable to the Project.

Chapter 33—Grading and Construction

Chapter 33 includes requirements about grading and construction activity, which include limiting grading and earth disturbance activity to the portion of the calendar year between May 1 and October 15 unless approval is granted by TRPA and TRPA-approved dust control measures are implemented.

Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy

In 2017, TRPA adopted *Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy* (RTP/SCS), which seeks to improve mobility and safety for the commuting public while at the same time delivering environmental improvements throughout the transportation network in the Tahoe Region. The plan's horizon year extends to 2040 (TRPA 2017a). Important directions of the plan are to reduce the overall environmental impact of transportation in the region, create walkable, vibrant communities, and provide real alternatives to driving. The reduction targets assigned by the California Air Resources Board (CARB) to TRPA for this RTP/SCS include a 7 percent reduction in GHG per capita by 2020 and a 5 percent reduction in GHG per capita by 2035, as compared to 2005 levels. In 2018, consistent with state law, CARB adopted new targets under SB 375 which include an 8 percent reduction by 2020 and a 5 percent reduction by 2035 for TRPA as compared to 2005 levels (CARB 2019).

Lake Tahoe Sustainability Action Plan

The Sustainability Action Plan (SAP) provides tools to assist local governments, agencies, businesses, residents, visitors, and community groups with prioritizing and adopting consistent sustainability actions throughout the Tahoe Region. The SAP represents an integrated approach to reducing GHG emissions and striving toward zero-impact in all aspects of sustainability. The SAP includes the revised GHG emissions inventory and reduction targets, and climate change and adaptation strategies vetted through the Lake Tahoe Sustainability Collaborative and the Tahoe Basin

Partnership for Sustainable Communities. Table 3.7-1 below summarizes major recommended actions in the SAP that have the potential to reduce GHG emissions during construction and operation of land uses and protect against the effects of climate change. Within the SAP, TMPO and TRPA established a GHG reduction goal for the Tahoe Region of 5 percent and 49 percent below the 2005–2010 average baseline by 2020 and 2035, respectively. The baseline inventory is shown in Table 3.7-3 under Section 3.7.3, “Environmental Setting.”

Table 3.7-1 Summary of Recommended Sustainability Actions with GHG Reduction Potential

Sustainability Benefit	Sustainability Action
Construction-Related GHG Reduction Actions	Local Construction Materials Procurement in New Development
	Best Construction Practices
	Enforce Idling Time Limitations
	Construction and Demolition Debris Diversion
	Alternative Fueled Vehicle Fleet
Operation-Related GHG Reduction Actions	Green Building Ordinance
	Property Assessed Clean Energy Financing Program
	Energy Efficient Lighting Development Standards
	Energy Star Appliances
	Community Choice Aggregation
	Renewable Energy Standards or Incentives for New Development
	Innovative Approaches to Energy Generation and Distribution
	Complete Neighborhoods
	Expand Bicycle and Pedestrian Network
	Improve Transit Services
	Streetscape and Bicycle Amenities
	Electric Vehicle Changing Network
	Alternative Fueled Vehicle Fleet
	Solid Waste Diversion
	Water Efficiency Measures/Water Conservation
Replace Wood Stoves and Wood Fireplaces	
Local Food Production & Farmers Markets	
Urban Forestry	
Climate Change Impacts	Vulnerability Assessment and Outreach
	Wildfire Emergency Response
	Emergency and Disaster Preparedness Training
	100-year Storm Event Planning
	Prohibit Development in 100-Year Flood Plain
	Evacuation Access
	Coordinated Hazard Mitigation Planning

Notes: GHG = greenhouse gas

Source: Lake Tahoe Sustainable Communities Program 2013:Table 1.1

TRPA Best Construction Practices Policy for Construction Emissions

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

In addition to existing permit limits, TRPA developed a Best Construction Practices Policy for Construction Emissions, pursuant to the requirements of RPU EIS mitigation measures adopted by the TRPA Governing Board. This policy addresses potentially significant construction-generated emissions of GHGs associated with development under the RPU, including development within the project area. The following items constitute TRPA's development of its Best Construction Practices Policy for Construction Emissions:

- ▶ TRPA Code Section 65.1.8, Idling Restrictions, was revised to, among other things, limit idling for certain diesel engines to no longer than 5 minutes in California and 15 minutes in Nevada.
- ▶ TRPA's Standard Conditions of Approval for projects involving grading (Attachment Q, Standard Conditions of Approval for Construction Projects) and residential projects (Attachment R, Standard Conditions of Approval for Residential Projects) were revised to:
 - limit idling time for diesel powered vehicles exceeding 10,000 pounds in Gross Vehicle Weight and self-propelled equipment exceeding 25 horsepower to no more than 15 minutes in Nevada and 5 minutes in California, or as otherwise required by state or local permits (TRPA Code Section 65.1.8); and
 - utilize existing power sources (e.g., power poles) or clean-fuel generators rather than temporary diesel power generators, wherever feasible.

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

The overall efficacy of these measures and other efforts to attain and maintain air quality standards will continue to be monitored through a comprehensive multi-agency air quality program. The existing air quality monitoring program is being expanded to ensure adequate data continues to be available to assess the status and trends of a variety of constituents. In 2011, TRPA established additional ozone and particulate monitoring at the Stateline Monitoring Site. Working under a cooperative agreement with the TRPA, the Placer County Air Pollution Control District (PCAPCD) installed additional ozone and PM₁₀ monitors in Tahoe City and Kings Beach in 2011. In 2013, TRPA installed an additional Visibility Monitoring Station and an ozone monitor in South Lake Tahoe.

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

STATE

Plans, policies, regulations, and laws established by state agencies are generally presented in the order they were established.

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades (State of California 2018). GHG emission targets established by the state legislature include reducing statewide GHG

emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (SB 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the U.S. to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and “substantially advance toward our 2050 climate goals” (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). CARB and other state agencies are currently developing a Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of Executive Order B-55-18.

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

Cap-and-Trade Program

CARB administers the state’s cap-and-trade program, which covers GHG emission sources that emit more than 25,000 metric tons of carbon dioxide equivalent per year (MTCO_{2e}/year), such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions.

Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel powered on-road vehicles. In addition, the program’s zero-emission vehicle (ZEV) regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California’s new vehicle sales by 2025 (CARB 2016a:15). By 2025, when the rules will be fully implemented, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2016b:1).

Executive Order B-48-18, signed into law in January 2018, requires all state entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct–current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California’s transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and by off-road vehicles, including construction equipment (Wade, pers. comm., 2017).

In addition to regulations that address tailpipe emissions and transportation fuels, the state legislature has passed regulations to address the amount of driving by on-road vehicles. Since passage of SB 375 in 2008, CARB requires metropolitan planning organizations to adopt plans showing reductions in GHG emissions from passenger cars and light trucks in their respective regions for 2020 and 2035 (CARB 2018a:1). These plans link land use and housing allocation to transportation planning and related mobile-source emissions. Under SB 3754, TMPO adopted their RTP in 2012. See the discussion under the heading “Mobility 2035: Lake Tahoe Regional Transportation Plan” for additional detail regarding TMPO’s requirements under SB 375.

Under SB 743 of 2013, the Governor’s Office of Planning and Research (OPR) amended the State CEQA Guidelines, including the addition of Section 15064.3, which requires that CEQA transportation analysis move away from focusing on vehicle delay and level of service (LOS) to analyzing vehicle miles traveled (VMT), which refers to the amount and distance of automobile travel associated with a project (OPR 2017a:77–90). In support of these changes, OPR

published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether the project would generate a level of VMT per capita (or VMT per employee) that is 15 percent lower than that of existing development in the region (OPR 2017b:12–13). OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017b:18). This metric is intended to replace the use of delay and level of service to measure transportation-related impacts. More detail about SB 743 is provided in the "Regulatory Setting" section of Section 3.5, "Transportation."

Legislation Associated with Electricity Generation

The state has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018); and 100 percent by 2045 (also SB 100 of 2018).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Commission (CEC) updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code (2016) is scheduled to be replaced by the 2019 standards on January 1, 2020. The 2019 California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. Additionally, new residential units will be required to include solar panels, sized to offset the estimated electrical requirements of each unit (California Code of Regulations Title 24, Part 6, Section 150.1[c]14). CEC estimates that the combination of required energy-efficiency features and mandatory solar panels in the 2019 California Energy Code will result in new residential buildings that use 53 percent less energy than those designed to meet the 2016 California Energy Code. The CEC also estimates that the 2019 California Energy Code will result in new commercial buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficacy lighting (CEC 2018).

LOCAL

PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

PCAPCD has quantitative significance criteria for evaluating GHG emissions associated with land use development projects. In the justification report that supplemented PCAPCD's guidance, PCAPCD indicates that application of these significance criteria would be sufficient for projects to do their fair share of reducing emissions such that the state will meet its 2030 GHG reduction targets as mandated by SB 32 (discussed above). However, the Project is located within the boundaries of the Placer County Tahoe Basin Area Plan (Area Plan), which, during its environmental review, identified program-level mitigation measures that would be applied to new projects built within in the plan area. This mitigation is discussed in greater detail below.

PLACER COUNTY AREA PLAN POLICIES AND PROGRAMS

The following policies from the Area Plan pertain to GHG emissions and climate change.

- ▶ **Policy AQ-P-4:** Prioritize projects and services that reduce vehicle miles traveled (VMT) and support alternative modes of transportation.
- ▶ **Policy AQ-P-6:** Continue to implement the mPOWER incentive program to reduce greenhouse gas emissions from buildings and other site improvements.

- ▶ **Policy AQ-P-7:** Implement building design standards and design capital improvements to reduce energy consumption and where feasible to incorporate alternative energy production.

The following projects related to GHG reduction are being pursued to implement the Area Plan (Part 8, Implementation Plan).

- ▶ **Evaluation of GHG Reduction Strategies:** This project began in 2011 and completes science-based evaluations of the effectiveness of alternative strategies to control and reduce GHG throughout the region. The program includes annual monitoring and evaluation of the effectiveness of specific actions and strategies implemented to reduce GHG at achieving regional Reduction Targets as directed in the Climate Sustainability Plan. (Lead Agency: Pacific Southwest Research Station-Southern Nevada Public Land Management Act, CA)
- ▶ **Placer County mPOWER (Money for Property Owner Water and Energy Efficiency Retrofitting) Program:** This program was launched in 2010 and provides residential and non-residential property owners with financing opportunities to retrofit existing buildings with energy efficiency and water conservation improvements and renewable energy systems. The program promotes energy and water efficiency, reduces reliance on fossil fuels, and reduces GHG emissions. (Lead Agency: Placer County)

The Placer County Tahoe Basin Area Plan and Tahoe City Lodge Project EIR/EIS (Area Plan EIR/EIS) determined that GHG emissions associated with construction and operation of land uses under the Area Plan would have a cumulatively considerable contribution to global climate change. The Area Plan EIR/EIS identified plan-level mitigation that would apply to all new construction located within the Area Plan boundaries. Placer County and TRPA developed Mitigation Measure 12-1 to ensure that new land use projects constructed under the Area Plan would not generate levels of GHG emissions that could conflict with statewide GHG targets for 2030 and beyond. The language of Mitigation Measure 12-1 is shown below and would apply to the proposed Project and Alternative A:

Mitigation Measure 12-1: Implement all feasible greenhouse gas reduction measures to achieve no net increase in emissions.

Require-new construction (both redevelopment and greenfield) to implement energy, water, transportation, and vegetation measures to achieve a no net increases in GHG emissions as stated by ARB in the 2017 Climate Change Scoping Plan to the extent feasible. Such measures may include those recommended by PCAPCD available in Appendix F-1 of the District's CEQA Handbook and other feasible measures contained in Appendix B of ARB's Scoping Plan Update dated January 20, 2017. This would apply to new construction occurring under the Area Plan, including the proposed Project and Alternative A. Also, Placer County will initiate a funding program to apply these measures to existing facilities, as feasible, within the Plan area (PCAPCD 2012).

These recommended measures include, but are not limited to:

- ▶ Install tank-less or energy-efficiency water heaters (E5). This would result in less emissions than water heaters powered with propane or natural gas.
- ▶ Install solar water heaters (E3)
- ▶ Install energy-efficient roofing (E4)
- ▶ Require Energy Star-rated appliances in new construction (E9)
- ▶ Pre-Plumb new construction for Solar Energy and design for load (E12)
- ▶ Install low-flow water fixtures (W1)
- ▶ Use reclaimed water for irrigation (W3)
- ▶ Provide bus shelters and lanes and provide bike parking (T1, T2, and T3)
- ▶ Plant drought tolerant plants (V2)
- ▶ Prohibit gas-powered landscaping equipment (V3)

- ▶ Achieve Zero Net Energy (ZNE) or equivalent level of energy efficiency, renewable energy generation, or GHG emission savings
- ▶ Require new developments to demonstrate that each new residence be equipped with a minimum of one single-port electric vehicle charging station that achieves similar or better functionality as a Level 2 charging station (referring to the voltage that the electric vehicle charger uses)
- ▶ Require residential projects to contribute to a fund to subsidize purchase of zero emission vehicles
- ▶ Require applicants for commercial projects to demonstrate that parking areas will be equipped with electric vehicle charging stations for an appropriate percentage of parking spaces
- ▶ Adopt a program of parking fees to generate funding for sustainable transportation modes
- ▶ Install ground source heat pumps (GSHPs) to reduce the need for natural gas in winter
- ▶ Require purchase of carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district to offset emissions over the operational life of the project
- ▶ Applicant shall consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its offsite mitigation measure for GHG emissions and that will facilitate the state's efforts in achieving the GHG emission reduction goal
- ▶ Additional Reduction Measures to Help Individual Projects Achieve a Net Zero Increase in Greenhouse Gas Emissions

As stated above, Appendix B of [C]ARB's Scoping Plan Update includes additional examples of GHG reduction measures that could be considered for individual projects. This list of reduction measures includes items that address GHG emissions generated by construction activity, transportation, onsite electricity generation, electricity consumption, and water consumption ([C]ARB 2017:B-7 to B-9). The reductions achieved by these measures would vary according to many factors including the climate in the Tahoe Region and the nature and number of new or redevelopment projects. However, a project applicant may be able to provide the site-specific information necessary to quantify a reduction. The following additional project-level measures will be applicable to new projects and redevelopment projects developed under the Area Plan unless determined to be infeasible. Also included is some information about the effectiveness of each measure:

Construction-Related Reduction Measures

- ▶ Enforce idling time restrictions for construction vehicles. *Reducing the time construction equipment is operating will reduce GHG emissions.*
- ▶ Require diesel equipment fleets to be lower emitting than any current emission standard. This can be implemented by requiring construction equipment to operate with the highest tier engines commercially available. *Higher tier engines generate lower levels of GHG emissions than lower tier engines.*
- ▶ Increase use of electric-powered construction equipment including use of existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators. *Electric powered equipment generates lower levels of indirect GHG emissions than diesel- and gasoline-powered equipment.*
- ▶ Require diesel-powered construction equipment to be fueled with renewable diesel fuel. The renewable diesel product that is used shall comply with California's Low Carbon Fuel Standards and be certified by the California Air Resources Board Executive Officer. *Use of renewable diesel fuel instead of conventional diesel fuel can result in a 40 to 70 percent reduction in CO₂e emissions generated by construction equipment (SMAQMD 2015:3).*
- ▶ Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible. *This measure would reduce upstream emissions associated with the manufacture of building materials.*

Design- and Operation-Related Reduction Measures

- ▶ Allow for new construction to install fewer onsite parking spaces than required by local municipal building code, while still maintaining requirements of the Americans with Disabilities Act (ADA) and any dedicated spaces for the charging of electric vehicles. *This measure would incentivize people to use other modes of transportation, including biking, walking, and transit, thereby reducing mobile-source GHG emissions. Exact reductions would vary according to many factors, including the local viability of these alternative modes of transportation.*
- ▶ Dedicate onsite parking for shared vehicles. *This measure would discourage the use of single occupancy vehicles, thereby reducing mobile-source GHG emissions.*
- ▶ Provide adequate, safe, convenient, and secure onsite bicycle parking and storage in multi-family residential projects and in non-residential projects. *This measure would encourage and support bicycling as a viable mode of transportation, thereby reducing mobile-source GHG emissions.*
- ▶ Provide onsite and offsite safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan. *This measure would incentivize people to use other modes of transportation, including biking, walking, and transit, thereby reducing mobile-source GHG emissions.*
- ▶ Require onsite renewable energy generation. *This measure would reduce the indirect GHG emissions associated with the consumption of electricity from the grid.*
- ▶ Require solar panels on all roof area with adequate solar exposure. *This measure would reduce the indirect GHG emissions associated with the consumption of electricity from the grid.*
- ▶ Require organics collection in new developments. *This measure would reduce the level of GHG emissions associated with the decomposition of organic waste in landfills.*
- ▶ Require low-water landscaping in new developments and redevelopment sites. Require water efficient landscape maintenance to conserve water and reduce landscape waste. *This measure would reduce the level of indirect GHGs associated with the consumption of water.*
- ▶ Require new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program or the LEED rating system. *This measure would reduce the GHGs associated with the consumption of water and the consumption of electricity from the grid, natural gas, and propane for the heating and cooling of buildings and for water heating.*
- ▶ Require the design of bike lanes to connect to the regional bicycle network. *This measure would encourage and support bicycling as a viable mode of transportation, thereby reducing mobile-source GHG emissions.*
- ▶ Require preferential parking spaces for park-and-ride to incentivize carpooling, vanpooling, commuter bus, and electric vehicles. *This measure would discourage the use of single occupancy fossil fuel-powered vehicles, thereby reducing mobile-source GHG emissions.*
- ▶ Develop a rideshare program targeting commuters to major employment centers. *This measure would discourage the use of single occupancy vehicles for work commute trips, thereby reducing mobile-source GHG emissions.*
- ▶ Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass-transit. *This measure would incentivize people to mass transit, thereby reducing mobile-source GHG emissions.*
- ▶ Require gas or propane outlets in private outdoor areas of residential land uses for use with outdoor cooking appliances such as grills if natural gas service or propane service is available. *By providing a fuel source other than charcoal This measure would reduce GHG emissions from outdoor cooking.*
- ▶ Require the installation of electrical outlets on the exterior walls of both the front and back of residential and non-residential buildings to support the use of electric landscape maintenance equipment. *This measure would reduce GHG emission generated by fossil fuel-powered outdoor maintenance equipment.*

- ▶ Require the installation of whole-house fans instead of air conditioning units for cooling during the summer season. *Whole-house fans consume less electricity than air conditioners, resulting in a reduction in indirect GHG emissions from electricity consumption.*
- ▶ Require each residential and commercial building to be equipped with programmable thermostats/timers. *This allows for more energy-efficient operation of heating and cooling systems, resulting in less consumption of natural gas, propane, and electricity and associated GHG emissions.*
- ▶ Require the use of energy-efficient lighting for all street, parking, and area lighting. *This reduces the amount of electricity consumed for outdoor lighting.*

3.7.2 Environmental Setting

THE PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014:5).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is considered to be enormous. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

As discussed previously, GHG emissions are attributable in large part to human activities. The total GHG inventory for California in 2016 was 429 million metric tons of carbon dioxide equivalent (MMTCO₂e) (CARB 2018b). This is less than the 2020 target of 431 MMTCO₂e (CARB 2018c:1). Table 3.7-2 summarizes the statewide GHG inventory for California by percentage.

Table 3.7-2 Statewide GHG Emissions by Economic Sector

Sector	Percent
Transportation	41
Industrial	23
Electricity generation (in state)	10
Electricity generation (imports)	6
Agriculture	8
Residential	7
Commercial	5
Not specified	<1

Source: CARB 2018b

As shown in Table 3.7-2, transportation, industry, and electricity generation are the largest GHG emission sectors.

Emissions of CO₂ are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (CO₂ dissolving into the water), respectively, two of the most common processes for removing CO₂ from the atmosphere.

A GHG inventory for the Tahoe Region is provided in the SAP and summarized in Table 3.7-3. These emissions are averaged over 5 years from 2005 to 2010 to account for non-linear factors and other sources of variation.

Table 3.7-3 Baseline Average Region-Wide Greenhouse Gas Emissions from 2005 to 2010 (MTCO₂e/year)

Emissions Sector	2005 to 2010 Average Emissions per Year
Electricity Consumption	498,682
On-Road Transportation	314,815
Natural Gas Consumption	239,654
Wood Combustion	100,999
Solid Waste	68,608
Off-Road Transportation	56,306
Wildfires and Prescribed Burns	47,968
Water Consumption	26,366
Recreational Boats	19,199
Livestock	12,734
Other Combustion	6,010
Aircraft	4,935
Wastewater Treatment	2,279
Total	1,398,554

Notes: Totals may not equal the sum of the numbers because of independent rounding.

MTCO₂e/year = metric tons of carbon dioxide equivalent per year.

Source: Lake Tahoe Sustainable Communities Program 2013:3-1

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature will increase by 3.7 to 4.8 degrees Celsius (°C) (6.7 to 8.6 degrees Fahrenheit [°F]) by the end of the century unless additional efforts to reduce GHG emissions are made (IPCC 2014:10). According to CEC, temperatures in California will warm by approximately 2.7°F above 2000 averages by 2050 and by 4.1°F to 8.6°F by 2100, depending on emission levels (CEC 2012:2).

According to *California's Fourth Climate Change Assessment*, with global GHGs reduced at a moderate rate California will experience average daily high temperatures that are warmer than the historic average by 2.5°F from 2006 to 2039, by 4.4°F from 2040 to 2069, and by 5.6°F from 2070 to 2100; and if GHG emissions continue at current rates then California will experience average daily high temperatures that are warmer than the historic average by 2.7°F from 2006 to 2039, by 5.8°F from 2040 to 2069, and by 8.8°F from 2070 to 2100 (OPR, CEC, and CNRA 2018:5).

Since its previous climate change assessment in 2012, California has experienced several of the most extreme natural events in its recorded history: a severe drought from 2012-2016, an almost non-existent Sierra Nevada winter snowpack in 2014-2015, increasingly large and severe wildfires, and back-to-back years of the warmest average temperatures (OPR, CEC, and CNRA 2018:3). According to CNRA's *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018:55). In contrast, the northern Sierra Nevada experienced one of its wettest full year on record during the 2016-2017 water year (CNRA 2018:64). The changes in precipitation exacerbate wildfires throughout California through a cycle of high vegetative growth coupled with dry, hot periods which lowers the moisture content of fuel loads. As a result, the frequency, size, and devastation of forest fires increases. In November 2018, the Camp Fire completely destroyed the town of Paradise in Butte County and caused 85 fatalities, becoming the state's deadliest fire in recorded history. Moreover, changes in the intensity of precipitation events following wildfires can also result in devastating landslides. In January 2018, following the Thomas Fire, 0.5 inches of rain fell in 5 minutes in Santa Barbara causing destructive mudslides formed from the debris and loose soil left behind by the fire. These mudslides resulted in 21 deaths.

As temperatures increase, the amount of precipitation falling as rain rather than snow also increases, which could lead to increased flooding because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley during winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018:190-192). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet and the glaciers atop Greenland, the sea level along California's coastline is expected to rise 54 inches by 2100 if GHG emissions continue at current rates (OPR, CEC, and CNRA 2018:6).

Temperature increases and changes to historical precipitation patterns will likely affect ecological productivity. Existing habitats may migrate from climatic changes where possible, and those habitats and species that lack the ability to retreat will be severely threatened. Altered climatic conditions dramatically endanger the survival of arthropods (e.g., insects, spiders) which could have cascading effects throughout ecosystems (Lister and Garcia 2018). Conversely, a warming climate may support the populations of other insects such as ticks and mosquitos, which transmit diseases harmful to human health such as the Zika virus, West Nile virus, and Lyme disease (European Commission Joint Research Centre 2018).

Changes in temperature, precipitation patterns, extreme weather events, wildfires, and sea-level rise have the potential to threaten transportation and energy infrastructure, crop production, forests and rangelands, and public health (CNRA 2018:64, 116-117, 127; OPR, CEC, and CNRA 2018:7-14). The effects of climate change will also have an indirect adverse impact on the economy as more severe natural disasters cause expensive, physical damage to communities and the state.

Additionally, adjusting to the physical changes associated with climate change can produce mental health impacts such as depression and anxiety.

Cal-Adapt is a climate change scenario planning tool developed by CEC that downscales global climate model data to local and regional resolution under two emissions scenarios. The Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a future with reduced GHG emissions. According to Cal-Adapt, annual average minimum temperatures in the Project area are projected to rise by 5.5°F to 10.7°F by 2099 under the RCP 4.5 and RCP 8.5 scenarios, respectively. Annual average maximum temperatures in the Project vicinity are expected to increase by 5.8°F to 11°F by 2099 under each scenario, respectively (CEC 2019).

The Project area experienced an average precipitation of 38.0 inches per year between 1961 and 1990. Under the RCP 4.5 scenario, the Project area is projected to experience an increase of 5 inches per year by 2099 (CEC 2019). Under the RCP 8.5 scenario, the Project area is projected to experience an increase of 6.8 inches per year by 2099 (CEC 2019). It should be noted, however, that such increases in precipitation would likely occur in the form of rain rather than snow, which is inconsistent with historical climate trends in the Tahoe Region (CEC 2019).

3.7.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

GHG emissions associated with the Project would be generated during Project construction and during operation after the Project is built. Estimated levels of construction- and operation-related GHGs are presented below. The Project is evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions, including the 2017 Scoping Plan and the 2016 RTP/SCS. TRPA does not have adopted Environmental Threshold Carrying Capacities specific to climate change. Estimation of project-related GHG emissions is consistent with guidance in PCAPCD's 2017 CEQA Handbook and accompanying Thresholds of Significance Justification Report (PCAPCD 2016).

Construction-Related Greenhouse Gas Emissions

Short-term construction-generated GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 (CAPCOA 2016) for the proposed Project and Alternative A sites, as recommended by PCAPCD and other air districts in California. Modeling was based on Project-specific information (e.g., building size, area to be graded, area to be paved, energy information) where available; assumptions based on anticipated construction activities; and default values in CalEEMod that are based on the Project's location and land use type. Consistent with Chapter 65 of the TRPA Code of Ordinances, construction of the Project was assumed to be limited to May 1 through October 15. Based on assumptions developed in the initial planning stages for the Project, construction was assumed to commence on May 1, 2020 and end in June 2023, when the Project would become operational. However, as described under Section 2.5.3, "Construction Schedule and Activities," Project construction activities may be completed faster, beginning in 2021 instead of 2020 and completed in 2 years rather than 4 years. Construction would be limited to Monday through Friday within exempt hours.

Operational Greenhouse Gas Emissions

GHG emissions associated with operation of either the proposed Project or Alternative A were estimated for the following sources: area sources (e.g., landscape maintenance equipment), energy use (i.e., electricity and natural gas consumption), water use, solid waste generated, and mobile sources. Operation-related mobile-source GHG emissions were modeled based on the estimated level of VMT by employees and recreational visitors to the proposed Project site. VMT estimates were derived from data generated during the traffic impact analysis conducted for the Project (see Section 3.5, "Transportation"). Mobile-source emissions were calculated using CalEEMod. Indirect emissions associated with consumption of electricity and natural gas supplied by Liberty Utilities were estimated using non-baseload intensity values for the WECC California (CAMX) region in EPA's eGRID 2014v2 (EPA 2014). The Project's electricity usage was based on default consumption rates provided in CalEEMod for similar land use types; however, CalEEMod Version 2016.3.2 does not account for reductions made from the application of the mandatory and prescriptive requirements under the 2019 California Energy Code. Thus, as the Project would be constructed following the official adoption of the 2019 California Energy Code, the Project's level of electricity and natural gas use were adjusted to reflect related improvements in energy efficiency. Detailed model assumptions and inputs for these calculations are presented in Appendix D.

SIGNIFICANCE CRITERIA

State CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant adopted plans and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. Under Appendix G of the State CEQA Guidelines, implementation of the Project would result in a cumulatively considerable contribution to climate change if it would:

- ▶ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and/or
- ▶ conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

On October 13, 2016, PCAPCD adopted new thresholds of significance for GHG emissions. Development of the new thresholds included evaluation of existing thresholds from other air districts such as the Sacramento Metropolitan Air Quality Management District, San Luis Obispo Air Pollution Control District, and Bay Area Air Quality Management District. The thresholds consider (1) existing GHG significance thresholds adopted by other districts, (2) PCAPCD's historical CEQA review data, (3) the statewide GHG emissions reduction target and regulation requirement beyond 2020, and (4) the special geographic features in Placer County (PCAPCD 2016). Based on Appendix G of the State CEQA Guidelines and PCAPCD thresholds of significance for construction- and operational-related emissions of GHGs, impacts to global climate change would be significant if the project would:

- ▶ generate construction emissions exceeding 10,000 metric tons of carbon dioxide equivalent per year (MT CO₂e/year),
- ▶ generate operational emissions that would exceed the Efficiency Matrix of 27.3 metric tons of CO₂e per capita (applicable to non-residential in rural areas) which exceed the De Minimis level, and
- ▶ generate operational emissions of the De Minimis level of 1,100 MT CO₂e/year.

The 1,100 MT CO₂e De Minimis Level significance threshold was developed to encompass the operational emissions of smaller land use projects that may be proposed in rural areas but are subject to CEQA review. The 1,100 MT CO₂e threshold is derived from consideration of other air districts and the goal of achieving 1990 levels of GHGs by 2020; PCAPCD uses this threshold as a measure of compliance with post-2020 GHG reduction goals (40 percent of 1990 levels by 2030). However, as explained in Section 3.7.1, "Regulatory Setting," the proposed Project and Alternative A sites are located in the plan area of the Area Plan. The GHG impact analysis in the Area Plan EIR/EIS determined that the increase in GHG emissions associated with development of the land uses under the Area Plan would result in a significant and cumulatively considerable contribution to climate change (TRPA 2017b). As explained in Section 3.7.1, "Regulatory Setting," the EIR/EIS prepared for the Area Plan includes a mitigation measure that requires individual projects developed in the plan area to reduce their GHGs to zero. (See Section 3.7.1, "Regulatory Setting," for the full text of Mitigation Measure 12-1 from the Area Plan EIR/EIS.) Therefore, a net zero significance criterion is used to determine whether the proposed Project or Alternative A would result in a significant and cumulatively considerable contribution to climate change.

This "net zero" approach is consistent with direction provided by CARB in the 2017 Scoping Plan, which states (CARB 2017:101-102):

Achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. There are recent examples of land use development projects in California that have demonstrated that it is feasible to design projects that achieve zero net additional GHG emissions. Several projects have received certification from the Governor under AB 900, the Jobs and Economic Improvement through Environmental Leadership Act (Buchanan, Chapter 354, Statutes of 2011), demonstrating an ability to design economically viable projects that create jobs while contributing no net additional GHG emissions. Another example is the Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan, in which the applicant, Newhall Land and Farming Company, proposed a commitment to achieve net zero GHG emissions for a very large-scale residential and commercial specific planned development in Santa Clarita Valley.

Achieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.

With no increase in GHG emissions compared to existing conditions, any potential inconsistencies with relevant GHG reduction plans would be avoided. Therefore, if a project demonstrates that it may be implemented and operated without resulting in a net increase in GHG emissions the project's contribution to global climate change would be less than cumulatively considerable and less than significant.

ENVIRONMENTAL EFFECTS OF THE PROJECT

Impact 3.7-1: Project-Generated Emissions of GHGs

The proposed Project would result in construction-related GHG emissions totaling 841 MTCO₂e/year over a period of up to 4 years and would generate operational emissions of 316 MTCO₂e/year. Alternative A would result in construction-related GHG emissions totaling 922 MTCO₂e/year over a period of up to 4 years and would generate operational emissions slightly less than what is emitted for the proposed Project. These levels of emissions would not be consistent with Mitigation Measure 12-1 identified in the Area Plan EIR/EIS, which indicates that projects should achieve a no net increase in GHG emissions to demonstrate consistency with statewide GHG reduction goals. Proposed Project- and Alternative A-generated GHG emissions would be **potentially significant**.

Proposed Project

Proposed Project construction activities would result in the generation of GHG emissions. Heavy-duty off-road construction equipment, materials transport, and worker commute during construction of the Project would result in exhaust emissions of GHGs. There would be no construction associated with the Highlands Community Center. Table 3.7-4 summarizes the projected emissions associated with construction of the Project by year (2020-2023). As mentioned above under "Methods and Assumptions," and in Section 2.5.3, "Construction Schedule and Activities," the Project was initially anticipated to be constructed over an up to 4 year period and was anticipated to begin in 2020, which is reflected in Table 3.7-4 below. In the event that construction activities are completed faster than presented here, beginning in 2021 instead of 2020 and completed in as few as 2 years rather than 4 years, the GHG emissions shown in separate years in the table would be combined over fewer years. The emissions generated over a shorter timeframe would not change the impact conclusion provided below. See Appendix D for detailed input parameters and modeling results.

Table 3.7-4 Summary of Unmitigated Maximum Construction-Generated Emissions of GHGs by Year for the Proposed Project

Year	MTCO ₂ e/year
2020	202
2021	318
2022	303
2023	18
Total	841

Notes: GHGs = greenhouse gases, MTCO₂e/year = metric tons of carbon dioxide equivalent per year, PCAPCD = Placer County Air Pollution Control District

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

As shown above, construction-generated GHG emissions would total 841 MTCO₂e if construction were to occur over 4 years.

The Existing Lodge currently supports the Tahoe Cross-Country facility. With implementation of the proposed Project, operations at the Highlands Community Center would continue at a lower rate as compared to existing conditions as these activities would be redirected to the proposed Project site. As such, operational emissions of GHGs were modeled to demonstrate the net difference in operational activity between baseline conditions and the proposed Project. Operational emissions of GHGs would be generated by automobile travel to and from the proposed Project site, electricity usage, natural gas combustion, water usage, wastewater and solid waste generation, and area sources such as landscaping equipment. The analysis of GHG emissions also includes operation of the Existing Lodge with some community meetings and recreation classes. These emissions associated with the proposed Project are summarized in Table 3.7-5 for 2023, the first year of proposed Project operation.

Table 3.7-5 Summary of Unmitigated Maximum Operational-Related Emissions of GHGs by Source for Proposed Project

Source	MTCO _{2e} /year
Mobile-Source Emissions	229
Energy-Related Emissions	54
Solid Waste-Related Emissions	29
Water Consumption-Related Emissions	3
Area-Source Emissions	0
Total Operational Emissions	316

Notes: GHGs = greenhouse gases, MTCO_{2e}/year = metric tons of carbon dioxide equivalent per year, PCAPCD = Placer County Air Pollution Control District

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

As shown in Table 3.7-5, operational-related GHG emissions for the year 2023 would total 316 MTCO_{2e}/year.

Proposed Project construction would generate an approximate total of 841 MTCO_{2e} and operation of the proposed Project would generate approximately 316 MTCO_{2e}/year. The Project would also result in an increase in VMT to the proposed Project site, which would not be consistent with the regional goal of reducing VMT. (See Section 3.5, "Transportation," for an additional discussion of VMT.) Because the proposed Project would not be consistent with the Tahoe Basin Area Plan goal of achieving zero net emissions or the goal of reducing VMT within the region, the proposed Project's GHG emissions would contribute to climate change. This would be a **potentially significant** impact.

Alternative A

The same construction activities would occur under Alternative A as the proposed Project; however, under Alternative A, demolition of the Existing Lodge would occur prior to building construction. Table 3.7-6 summarizes the projected emissions associated with construction of Alternative A by year (2020-2023). See Appendix D for detailed input parameters and modeling results.

As shown in Table 3.7-6, construction emissions would total 922 MTCO_{2e}. Construction emissions under Alternative A would be greater in total as compared to the proposed Project due to the demolition of the Existing Lodge, which would require the use of additional heavy-duty equipment. As mentioned above under "Methods and Assumptions," and in Section 2.5.3, "Construction Schedule and Activities," the Project was initially anticipated to be constructed over an up to 4 year period and was anticipated to begin in 2020, which is reflected in Table 3.7-6 below. In the event that construction activities are completed faster than presented here, beginning in 2021 instead of 2020 and completed in 2 years rather than 4 years, the GHG emissions shown in separate years in the table would be combined over fewer years. The emissions generated over a shorter timeframe would not change the impact conclusion provided below.

Operational emissions under Alternative A would be expected to be less than that under the proposed Project due to the demolition of the Existing Lodge. Thus, electricity usage and natural gas combustion to heat and power the

Existing Lodge (i.e., Community Center) would not occur. Moreover, visitor- and employee-related vehicle trips under Alternative A would only be made to the Schilling Lodge instead of vehicle trips to the Schilling Lodge and the Community Center that would occur with the proposed Project. Thus, operational emissions generated from operation of Alternative A are not presented.

Because construction emissions would be greater under Alternative A and operational emissions would be less under Alternative A as compared to the proposed Project, the impact would be similar. However, similar to the proposed Project, these emissions would result in a contribution to climate change. This would be a **potentially significant** impact.

Table 3.7-6 Summary of Unmitigated Maximum Construction-Generated Emissions of GHGs by Year for Alternative A

Year	MTCO _{2e} /year
2020	194
2021	319
2022	306
2023	103
Total	922

Notes: GHGs = greenhouse gases, MTCO_{2e}/year = metric tons of carbon dioxide equivalent per year, PCAPCD = Placer County Air Pollution Control District

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

Mitigation Measure 3.7-1: Incorporate Design Features and Purchase and Retire Carbon Offsets to Reduce Project-Related Greenhouse Gas Emissions to Zero

This mitigation measure would apply to the proposed Project and Alternative A.

The applicant shall implement measures to reduce all GHG emissions associated with construction and operation of the Project to zero. More detail about measures to reduce construction-related GHGs, operational GHGs, and the purchase of carbon offsets is provided below.

Construction-Related Greenhouse Gas Emissions

The applicant shall implement all onsite feasible measures to reduce GHGs associated with Project construction. Such measures shall include, but are not limited to, the measures in the list below. Many of these measures are identical to, or consistent with, the measures listed in Appendix B of the 2017 Scoping Plan (CARB 2017:B-7 to B-8), Appendix F-1 of PCAPCD's CEQA Thresholds of Significance Justification Report (PCDAPCD 2016), and measures listed in Mitigation Measure 12-1 of the Placer County Tahoe Basin Area Plan (TRPA 2017b). The effort to quantify the GHG reductions shall be fully funded by the applicant.

- ▶ The applicant shall enforce idling time restrictions for construction vehicles.
- ▶ The applicant shall increase use of electric-powered construction equipment including use of existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators.
- ▶ The applicant shall require diesel-powered construction equipment to be fueled with renewable diesel fuel. The renewable diesel product that is used shall comply with California's Low Carbon Fuel Standards and be certified by the California Air Resources Board Executive Officer.
- ▶ The applicant shall require that all diesel-powered, off-road construction equipment shall meet EPA's Tier 4 emissions standards as defined in 40 Code of Federal Regulation (CFR) 1039 and comply with the exhaust emission test procedures and provisions of 40 CFR Parts 1065 and 1068.

- ▶ The applicant shall implement waste, disposal, and recycling strategies in accordance with Sections 4.408 and 5.408 of the 2016 California Green Building Standards Code (CALGreen Code), or in accordance with any update to these requirements in future iterations of the CALGreen Code in place at the time of Project construction.
- ▶ Project construction shall achieve or exceed the enhanced Tier 2 targets for recycling or reusing construction waste of 65 percent for nonresidential land uses as contained in Sections A5.408 of the CALGreen Code.

Operational Greenhouse Gas Emissions

The applicant shall implement all onsite feasible measures to reduce GHGs associated with operation of the Project. Such measures shall include, but are not limited to, the measures in the list below. Many of these measures are identical to, or consistent with, the measures listed in Appendix B of the 2017 Scoping Plan (CARB 2017:B-7 to B-8), Appendix F-1 of PCAPCD's Thresholds of Significance Justification Report (PCDAPCD 2016), and measures listed in Mitigation Measure 12-1 of the Placer County Tahoe Basin Area Plan (TRPA 2017b). The effort to quantify the GHG reductions shall be fully funded by the applicant.

- ▶ The applicant shall achieve zero net energy (ZNE) if feasible. Prior to the issuance of building permits the Project developer or its designee shall submit a Zero Net Energy Confirmation Report (ZNE Report) prepared by a qualified building energy efficiency and design consultant to the county for review and approval. The ZNE Report shall demonstrate that development within the Project area subject to application of the California Energy Code has been designed and shall be constructed to achieve ZNE, as defined by CEC in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation, or GHG emissions savings. This measure would differ from the achievement of zero net electricity because ZNE also concerns onsite consumption of natural gas.
- ▶ The applicant shall consult with Liberty Utilities to assess the feasibility of onsite solar. If it is determined that onsite solar is feasible, the building shall include rooftop solar photovoltaic systems to supply electricity to the building.
- ▶ If onsite solar is determined to be feasible, the applicant shall install rooftop solar water heaters if room is available after installing photovoltaic panels.
- ▶ Any household appliances required to operate the building shall be electric and certified Energy Star-certified (including dish washers, fans, and refrigerators, but not including tankless water heaters).
- ▶ All buildings shall be designed to comply with requirements for water efficiency and conservation as established in the CALGreen Code.
- ▶ The applicant shall also provide Level 2 electric vehicle charging stations at a minimum of 10 percent of parking spaces that the Project.
- ▶ The applicant shall dedicate onsite parking for shared vehicles.
- ▶ The applicant shall require gas or propane outlets in private outdoor areas of residential land uses for use with outdoor cooking appliances such as grills if natural gas service or propane service is available.
- ▶ The applicant shall require the installation of electrical outlets on the exterior walls of both the front and back of proposed lodge to support the use of electric landscape maintenance equipment.
- ▶ The applicant shall require the use of energy-efficient lighting for all area lighting.

Notably, the California Air Pollution Officers Associations (CAPCOA) identifies parking restrictions as a feasible measure to reduce GHG emissions; however, parking restrictions have not been dismissed as infeasible onsite mitigation due to existing and projected community impacts associated with spillover parking into nearby residential neighborhoods during peak seasonal periods. Nonetheless, even without limitations on parking availability, a no net increase in GHG emissions can be achieved.

Carbon Offsets

In addition to implementing all feasible onsite measures to reduction GHGs associated with construction and operation of the Project, the applicant shall offset the remaining levels of GHG emissions to zero by funding activities that directly reduce or sequester GHG emissions or by purchasing and retiring carbon credits from any of the following recognized and reputable voluntary carbon registries:

- (A) American Carbon Registry;
- (B) Climate Action Reserve; and/or
- (C) Verra (formally named Verified Carbon Standard).

The applicant shall demonstrate that it has purchased and retired a sufficient quantity of carbon offsets prior to receipt of building permits from Placer County. The applicant shall purchase and retire a quantity of carbon credits sufficient to fully offset the Project's remaining operational emissions multiplied by the number of years of operation between commencement of operation and 2045, which is the target year of Executive Order B-55-18.

Significance after Mitigation

TCPUD notes that the list of recommended measures includes limiting the number of parking spaces as a means of reducing GHG emissions. This item has not been included in Mitigation Measure 3.7-1, because the community has expressed concern regarding the intrusion of spillover parking into residential neighborhoods. TCPUD would like to minimize spillover parking. For this reason, sufficient parking has been provided to avoid significant spillover parking problems. TCPUD notes that, even without limiting the supply of onsite parking, the threshold – no net increase of GHG emissions – can be achieved.

Implementation of Mitigation Measure 3.7-1 would ensure that the proposed Project or Alternative A would not result in a net increase in GHG emissions and, thus, would not conflict with CARB's 2017 Scoping Plan or any established statewide GHG reduction targets (i.e., SB 32 of 2016 and Executive Order B-55-18). Thus, the proposed Project's or Alternative A's contribution to climate change would be reduced to **less than significant**.

CUMULATIVE IMPACTS

As noted previously, climate change is global phenomenon and the result of cumulative emissions of greenhouse gases from emissions sources across the globe. Therefore, climate change impacts are inherently cumulative in nature and discussed above under Impact 3.7-1.

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