3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.1.1 Setting

The project area is located in a mountainous landscape on the North Shore of the Tahoe Basin. Topography in the project area consists of gently rolling slopes, with areas of steeper rocky slopes. There are limited views of Lake Tahoe and scenic mountain views from within the project area. Vegetation in the project area consists of primarily Sierra mixed conifer forest, with patches of riparian vegetation. Jeffrey pine are more prominent on sunny, south-facing slopes and white fir are more prominent on shaded, north-facing slopes. A network of trails is found within the project area, which is actively used by hikers, mountain bikers, and cross country skiers. Site topography and vegetation contribute to the visual quality of the project area. Vistas from the project area and views of the project area from public gathering areas are largely obscured by intervening vegetation and topography. The properties surrounding the project area contain similarly forested lands. Distant views of the project area as part of the regional forest landscape may be seen from various points throughout the north Lake Tahoe area.

SR 28 and SR 89 in the North Lake Tahoe area are eligible for listing as a State-designated scenic highway, but are not officially designated (California Department of Transportation [Caltrans] 2011). Portions of the project area could be visible from these highways, although views of the project area are obscured by intervening vegetation and topography. Nighttime views in the project area are relatively dark and unaffected by regional light pollution. There are currently no sources of light or glare within the project area.

The project area encompasses approximately 263 acres near Dollar Point and north of the community of Highlands. Conservancy-owned and private land, including the North Tahoe High School and North Tahoe School, are located to the south. Burton Creek State Park is west of the project area.

Typical views of the site are dominated by dense, mixed conifer forest (see Exhibit 3.1-1). Views within the project area also consist of numerous trails and roads, a water storage tank, riparian habitat, and stream environment zones (SEZs). Viewer groups for the project area include recreation users on trails within the project area and from nearby trails.

Exhibit 3.1-1 Typical View of the Project Area

3.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

Less than significant. As described under "Setting" above, the project area is in a forested landscape with some limited mountain views. Because project activities would reduce fuel loads and would not remove or replace forested areas with some other landscape type, views of the treatment area from Lake Tahoe and other distant viewpoints would remain as forested evergreen slopes. Treatment activities would not occur in riparian areas, including SEZs. Thinning activities may result in some short-term limited changes to close-range viewing locations from nearby trails and residences in the neighborhoods to the south of the site while thinning is occurring. However, these impacts would be temporary and would not result in substantial changes to the visual character of the forested landscape in the project area. After project completion, the site would be a more open, but still forested, landscape. Views from the trails would provide visibility further into the forest, because of the removal of dense vegetation. Changes to views within the project area and views of the project would be typical of a natural forested environment and would not be adverse. The project would result in a less-than-significant impact on any scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than significant. The nearest highway to the project area is SR 28, which is eligible for designation as a scenic highway. SR 28 is approximately 0.3 miles from the project area. Views of the project area are very limited from SR 28, because of intervening vegetation and topography. Project activities would thin overstocked stands of forested areas to reduce fire fuels and improve forest health. The project would not result in changes to the visual character of the forested landscape. The project would not result in removal of rock outcroppings. There are no historic buildings in the project area. Therefore, the proposed project would not substantially damage scenic resources that could be visible from a state scenic highway. The impact would be less than significant.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than significant. The project area is characterized by mixed conifer forest with some limited areas dominated by chaparral or riparian vegetation. Current conditions include large amounts of dense understory vegetation, downed woody debris in some places, and other ground litter. Treatment activities would require removal of trees that would temporarily change the foreground scenery during operations, because of the short-term use of vehicles and mechanical equipment within the project area.

Treatment activities would increase visibility into the project area from nearby areas, but would not alter the existing visual character or scenic quality of the site as a forest landscape. Forestry prescriptions would retain between 80 and 150 square feet of basal area per acre, which would maintain the forest visual character of the project area. The treatment activities could require skid trails crossing a Class III waterway, which would only occur at existing crossings if surface conditions are dry. No ground-disturbing activities would occur beyond the crossing, both within and adjacent to the waterway.

In general, the forested lands would become more open. The treatment prescriptions would retain old-growth trees, old-growth candidate trees, and an uneven-aged stand structure arranged in multiple canopy layers, selected clumps of shrubs and understory vegetation, snags, and pockets of coarse woody debris. Following completion of the treatment activities, there would be short-term effects on views related to fresh cut stumps and visual signs of ground disturbance and the thinning process. Within a few years, as vegetation regrows, visual evidence of treatment activities that occurred would diminish and ultimately disappear.

Within the project area, there would be temporary changes to the visual character during treatment activities because of the presence of equipment used for removal of fuels and in the short term following treatment; however, because of intervening topography, vegetation, and distance, these changes would not be clearly visible from surrounding areas. Additionally, the results of the treatment activities after the conclusion of operations would not alter the visual character typical of a forested area that currently exists. Visual impacts from the project on the forest landscape character or scenic quality of the project area and surrounding properties would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No impact. The proposed project would include no development of structures or other occupied facilities and would not include any new lighting or other sources of light or glare. Treatment activities would occur during daytime hours and would not require the use of nighttime lighting. The project would result in no impact on light and glare.

CUMULATIVE IMPACTS

The geographic area for cumulative impacts on aesthetics encompasses the area around the North Shore of Lake Tahoe. The topography in this area includes the shore of Lake Tahoe, gently rolling slopes, and mountainous terrain. Much of this area consists of Sierra mixed conifer forest with views of Lake Tahoe and the surrounding mountains. Most of the cumulative projects identified in Table 3.18-1 are fuels management projects similar to the proposed project that would thin overstocked forested areas. Because the cumulative projects, in combination with the project, are temporary and would not change the landscape character, the cumulative impact on aesthetic resources from these projects would be less than significant. Because the project would be temporary, would not change the landscape character, and would improve the health of the forest, the project would not result in a considerable contribution to a temporary or permanent cumulative adverse impact on aesthetic resources.

The project would result in no impacts on scenic highways, light, or glare. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative impact on scenic highways, light, or glare.

As described above, the project would **not make a considerable contribution** to a significant cumulative impact related to aesthetics.

3.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Setting

The land within the project area is undeveloped forested areas within eastern Placer County that is not in agricultural or timber production. In addition, the project area is not designated as Farmland of Statewide or Local Importance, Unique Farmland, or Prime Farmland by the Farmland Mapping and Monitoring Program (FMMP). The project area is located outside of the area surveyed for the FMMP (Department of Conservation 2014). Additionally, there are no lands under Williamson Act contract within the project area (Placer County 2015).

As identified in the Placer County Tahoe Basin Area Plan, the project area is publicly owned land zoned Conservation and Recreation. The project area is not zoned for or managed as Timber Production Zones. The project would not convert forest lands to other uses. All lands designated as forested would be retained and managed as forest.

3.2.2 Discussion

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No impact. The project area is outside of the survey boundary for the FMMP. In addition, no agricultural uses exist in the project area and no grazing currently occurs within project area. The proposed project would have no impact on the conversion of Prime, Unique, or Farmland of Statewide Importance.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No impact. The project area is zoned as Conservation and Recreation. The project area is not zoned for agricultural uses and do not contain any Williamson Act contracts. There would be no impact on zoning for agricultural use or conflict with an existing Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No impact. The project area is zoned as Conservation and Recreation and predominately consists of mixed conifer forest. As described under Section 2.10, "Land Use and Planning," forest thinning operations, such as those that would occur under the proposed project, are identified as an allowable use within the Area Plan. The proposed project would implement forest thinning operations to thin overstocked forested areas, improve forest health, and reduce the risk of catastrophic wildfire. The project area is located on publicly owned land managed by the Conservancy and is not planned for timber production. The site would remain undeveloped forest and would allow for existing uses of the land to continue. For these reasons, the proposed project would result in no impact related to conflicts with the zoning of forest land or timberland.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. As described above under "c," the project area contains forested land. The proposed project would implement forest thinning operations to thin overstocked forested areas, improve forest health, and reduce the risk of catastrophic wildfire. The proposed project does not involve any other changes that would result in the loss of forest land or conversion of forest land to non-forest use. Therefore, implementation of the proposed project would result in no impact on loss of forest land.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No impact. Implementation of the proposed project would not involve other changes that could result in conversion of farmland or forest land to non-agricultural or non-forest use. As described in the discussions under "a" through "d" above, implementation of the proposed project would result in no impact related to conversion of agricultural or forest land.

CUMULATIVE IMPACTS

The project would result in no impacts on farmland or forest land. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative loss of farmland or forest land. There would be **no cumulative impact**.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Setting

The project area is in the portion of Placer County that lies within the Lake Tahoe Air Basin (LTAB) and is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). The LTAB comprises portions of El Dorado and Placer counties on the California side of the Lake Tahoe basin, and Washoe County, Douglas County, and the Carson City Rural District on the Nevada side. The LTAB is currently designated as nonattainment with respect to the California Ambient Air Quality Standard (CAAQS) for ozone and respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}) (CARB 2016). Ozone and PM_{10} are two of the criteria air pollutants for which the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) have established health-based standards designed to protect human health.

Air quality within Placer County is regulated by the EPA and CARB at the federal and state levels, respectively, and locally by PCAPCD. PCAPCD seeks to improve air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of PCAPCD includes the development of programs for the attainment and maintenance of the CAAQS and the National Air Quality Ambient Standards (NAAQS), adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. PCAPCD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the federal Clean Air Act (CAA), federal Clean Air Act Amendments of 1990 (CAAA), and the California Clean Air Act (CCAA).

PCAPCD has developed plans to attain and maintain the CAAQS and NAAQS for ozone, PM_{10}, and $PM_{2.5}$. PCAPCD's air quality plans include emissions inventories to measure the sources of air pollutants, to

evaluate how well different control methods have worked, and to show how air pollution will be reduced. Because ozone is a secondary pollutant that is generated from a reaction of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight, PCAPCD's activities include measures to reduce emissions of ROG and NO_X in the LTAB and other parts of Placer County.

As part of its efforts to attain and maintain CAAQS and NAAQS, PCAPCD has also adopted thresholds of significance for evaluating proposed projects. The most recent thresholds adopted by PCAPCD include separate mass emission thresholds for evaluating emissions of ROG, NO_X, and PM_{10} generated by construction activity and operational activity (PCAPCD 2016a:1 to 2). Therefore, PCAPCD considers the thresholds of 82 lb/day to represent the allowable incremental contribution of project-related construction activity while still progressing toward overall attainment within Placer County. PCAPCD's thresholds for construction-generated emissions of ROG, NO_X, and PM_{10} is 82 pounds per day (lb/day) (PCAPCD 2017:21). This analysis evaluates emissions generated by thinning activity using PCAPCD's recommend thresholds for construction-generated emissions because, like typical construction activity, the thinning activity would be temporary, would occur only once for this proposed project, and would use the same types of heavy-duty off-road equipment. PCAPCD considers the thresholds of 82 lb/day to represent the allowable incremental contribution of project-related construction activity while still progressing toward overall attainment of the CAAQS and NAAQS within Placer County NAQQS (PCAPCD 2017:20 to 21; PCAPCD 2016b:E-2).

3.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant. The emission inventories used to develop a region's air quality attainment plans are based primarily on projected population growth and vehicle miles traveled (VMT) for the region that are determined, in part, based on the planned growth identified in regional and community plans. Therefore, projects that would result in increases in population or employment growth beyond that projected in regional or community plans could result in increases in VMT above that planned in the attainment plan, further resulting in mobile-source emissions that could conflict with a region's air quality planning efforts. Increases in VMT beyond that projected in area plans generally would be considered to have a significant adverse incremental effect on the region's ability to attain or maintain the CAAQS and NAAQS.

The project would not result in any new long-term employment opportunities or new housing, and it would not change the amount of development projected in the LTAB and; therefore, it would be consistent with the population growth and VMT projections used in PCAPCD's air quality planning efforts. Also, the project would not result in any new stationary sources of emissions. Moreover, thinning of the forest in the project area would improve regional air quality by reducing emissions of criteria air pollutants and precursors generated in the event of a catastrophic wildfire and the open burning of biomass waste. Thus, implementation of the proposed project would not conflict with or obstruct implementation of any air quality planning efforts. As a result, this impact would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than significant. The project would not increase the population or bring new, permanent employees to the project area. All thinning activity, and associated truck hauling and worker trips would occur during the summer months. This is time of year when there is less potential for vehicle congestion to result in high concentrations of carbon monoxide, which is a criteria air pollutant of local concern, because emission rates of carbon monoxide are lower in warmer temperatures. As stated in Section 3.16, "Transportation/Traffic," the number of daily vehicle trips generated during thinning activity would not be substantial and would not substantially affect the performance of the circulation system. For these reasons, the project would not increase traffic on the surrounding roadways or intersections to levels that could result in increases in carbon monoxide concentrations that could cause an exceedance of CAAQS or NAAQS.

Project activities would result in temporary emissions of ozone precursors (i.e., ROG and NO_X), PM_{10}, and $PM_{2.5}$ from off-road forest thinning equipment, haul truck trips, and worker trips. Emissions associated with forest thinning were evaluated in accordance with PCAPCD's guidance regarding emissions-generating construction activity. Like construction, forest thinning involves the operation of off-road, heavy-duty equipment and truck transport of materials and is temporary in nature (i.e., up to 55 days).

Emissions generated by off-road forest thinning equipment were also estimated using the construction module of the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program (CAPCOA 2016). This modeling was based on detailed equipment information provided by a local thinning contractor (Holland, pers. comm., 2015) and default values in CalEEMod that are based on the project's location and land use types.

Mobile-source emissions from the hauling of merchantable logs to the mill in Quincy, the hauling of chipped biomass to the biomass power facility in Lincoln (which is a conservative approach assuming the most distant of the biomass power facilities that could be used by the project), and worker commute trips were estimated using the Emission Factor 2014 model (EMFAC 2014, Version 1.0.7) (CARB 2014). Road dust emissions of PM_{10} and $PM_{2.5}$ resulting from vehicle travel on unpaved forest roads were estimated using Air Pollutant (AP)-42 emission factors published by EPA (EPA 2006).

Table 3.3-1 summaries the maximum daily emissions of criteria air pollutants and precursors by the project in the LTAB. Refer to Appendix E for a detailed description of all calculations, model runs, and assumptions used to support the modeling.

Table 3.3-1 Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors in the Lake Tahoe Air Basin (lb/day)

Forest Treatment Activities	ROG	NO_X	PM_{10}	$PM_{2.5}$
Forest Thinning Equipment[1]	1.9	21.1	0.8	0.8
Trucks Hauling Merchantable Logs[2]	<0.1	1.3	0.1	<0.1
Trucks Hauling Chipped Biomass[2]	0.1	2.3	0.1	0.1
Worker Trips[2]	0.3	<0.1	<0.1	<0.1
Fugitive Road Dust[3]	–	–	5.5	0.6
Total Maximum Daily Emissions[5]	**2.2**	**24.8**	**6.5**	**1.4**
PCAPCD Thresholds of Significance	**82**	**82**	**82**	–[6]

Notes: See Appendix C for detail on model inputs, assumptions, and project-specific modeling parameters.
lb/day = pounds per day
ROG = reactive organic gases
NO_X = oxides of nitrogen
PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
PCAPCD = Placer County Air Pollution Control District

1. Emissions from thinning equipment were estimated using the construction module in CalEEMod Version 2016.3.1 computer program (CAPCOA 2016) with detailed equipment data provided by a local thinning contractor (Holland, pers. comm. 2015).
2. Exhaust emissions from the truck hauling of merchantable logs and chipped biomass and worker commute trips were estimated using the Emission Factor 2014 model EMFAC2014, Version 1.0.7 (CARB 2014).
3. Fugitive dust emissions from vehicle travel over unpaved forest roads were estimated using AP 42 emission factors (EPA 2006).
4. Totals may not add up due to rounding.
5. PCAPCD has not designated a mass emission threshold for evaluating emissions of $PM_{2.5}$ but estimates are shown for informational purposes.

Source: Modeling conducted by Ascent Environmental in 2015

As shown in Table 3.3-1, maximum daily emissions from forest thinning, which would occur for up to 60 days within the span of two years, would reach 2.2 lb/day of ROG, 24.8 lb/day of NO_X, 6.5 lb/day of PM_{10} and 1.4 lb/day of $PM_{2.5}$. These emissions levels would not exceed PCAPCD's significance thresholds for ROG, NO_X, or PM_{10}, and; thus, would not be expected to contribute to pollutant concentrations that exceed the NAAQS or

CAAQS. PCAPCD does not recommend a mass emission threshold for evaluating construction-generated emissions of $PM_{2.5}$. Because $PM_{2.5}$ is a subset of PM_{10}, and because project-generated PM_{10} emissions would be less than the threshold for PM_{10} of 82 lb/day, construction activity would not result in concentrations of $PM_{2.5}$ that would violate or substantially contribute to a violation of the ambient air quality standards for $PM_{2.5}$. Thus, project-generated emissions of criteria air pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation. This impact would be less than significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than significant. Past, present and future development projects contribute to adverse air quality in the LTAB on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of CAAQS or NAAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. This is why PCAPCD also recommends using the mass emission threshold of 82 lb/day for evaluating whether construction-generated emissions of ROG, NO_X, and PM_{10} would be cumulatively considerable. As shown in Table 3.3-1, project emissions of ozone precursors (i.e., ROG and NO_X) and PM_{10} would not exceed the thresholds of 82 lb/day.

As discussed in the analysis under item "a" above, the project would not conflict with or obstruct implementation of any air quality planning efforts and, as discussed in item "b" above, project-generated emissions of ROG, NO_X, and PM_{10} would not violate or contribute substantially to an existing or projected air quality violation. Moreover, over the long term, the project would reduce emissions of criteria air pollutants and precursors associated with catastrophic wildfire and open burning of biomass waste. Therefore, project-generated emissions of criteria air pollutants and precursors would not be cumulatively considerable. This impact would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than significant. As discussed in "b" above, the project would not result in local increases in carbon monoxide concentrations that could cause an exceedance of CAAQS or NAAQS. As also discussed in "b," project implementation would not result in regional emissions of criteria air pollutant or precursors (e.g., ROG, NO_X, PM_{10}) that would exceed PCAPCD's mass applicable mass thresholds of significance. Thus, project-generated criteria air pollutant and precursor emissions would not expose sensitive receptors to substantial pollutant concentrations.

The project would result in short-term diesel exhaust emissions from off-road equipment used for forest thinning and trucks used to haul away merchantable logs and chipped biomass. Particulate exhaust emitted by diesel-fueled engines (diesel PM) was identified as a toxic air contaminant (TAC) by CARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (CARB 2003), so diesel PM is the focus of this discussion.

Multiple pieces of diesel-powered equipment would be used for forest thinning, but recognizing that a crew would treat an average of approximately 5 acres per day, diesel PM generated by this activity also would not take place near any single sensitive receptor for an extended period. The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time.

According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year

exposure period. However, such assessments should be limited to the period/duration of activities that generate TAC emissions (OEHHA 2012:11-3). None of the diesel PM-emitting activities associated with the project would take place in the same location for more than two weeks, which is a short exposure period relative to the 30- or 70-year exposure timeframe recommended for health risk assessments. In addition, diesel PM dissipates rapidly from the source, and exposure concentrations would decline with distance from these activities (Zhu et al. 2002:1032). Therefore, because the use of off-road heavy-duty diesel equipment would be temporary and not take place at a fixed location for an extended period and because of the highly dispersive properties of diesel PM, project-related activity would not expose sensitive receptors to substantial levels of pollutants and this impact would be less than significant.

Also, an emerging set of research of diesel PM generated by roadway traffic (i.e., on-road vehicles) indicates that vegetation, particularly fine-needle tree species, remove particulates from the air (Islam et al. 2012:2; Fuller et al. 2009; Sacramento-Emigrant Trails Health Effects Task Force and SMAQMD 2008; Zhang 2015:14). The research demonstrates that buffer areas of trees further reduce potential exposure to diesel PM along roadways. Trees surrounding the forest treatment areas would have the same mitigating effect on diesel PM emitted by construction and thinning equipment, because the forest trees provide the same buffering condition as addressed in the research.

e) Create objectionable odors affecting a substantial number of people?

Less than significant. The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. Implementation of the proposed project would not result in the introduction of any new operational sources of odors to the area or the introduction of new sensitive receptors that could be exposed to existing odor sources. Diesel equipment used for forest treatments could result in odorous diesel exhaust emissions. As discussed under item "d," diesel exhaust emissions would be temporary and not be generated at any one location for an extended period and diesel exhaust would also dissipate rapidly from the source with an increase in distance. Accordingly, the proposed project would not create objectionable odors affecting a substantial number or people. This impact would be less than significant.

CUMULATIVE IMPACTS

The project area is in LTAB, which is designated as nonattainment with respect to the CAAQS for ozone and PM_{10} (CARB 2016). The project area is also in the jurisdiction of the PCAPCD. As discussed under item "c," above, project emissions of ozone precursors (i.e., ROG and NO_X) and PM_{10} would not exceed of 82 lb/day, which is the mass emission threshold PCAPCD recommends for determining whether construction-related emissions would be cumulatively considerable. Moreover, thinning of the forest in the project area would improve regional air quality by reducing emissions of criteria air pollutants and precursors generated by catastrophic wildfire and the open burning of biomass waste.

The potential for the project to expose sensitive receptors to substantial levels of diesel particulate matter (diesel PM) is discussed under item "d," above. This analysis concluded that, because the use of off-road heavy-duty diesel equipment would be temporary and not take place at a fixed location for an extended period, and because of the highly dispersive properties of diesel PM, project-related activity would not expose sensitive receptors to substantial levels of pollutants. Furthermore, most diesel PM-emitting activity related to the project would not occur near sensitive receptors. None of the projects listed in the cumulative project list would include diesel PM-emitting activity in close proximity to any of the same sensitive receptors potentially affected by diesel PM-emitting activities associated with the Dollar Creek Forest Health and Biomass Project. For this reason, project-related emissions of diesel PM **would not be cumulatively considerable**.

The project would not create objectionable odors affecting a substantial number or people, as discussed under item "e," above. None of the projects listed in the cumulative project list would include odor-emitting activity in close proximity to any of the same sensitive receptors potentially affected by odor-emitting activities associated with the Dollar Creek Forest Health and Biomass Project. For this reason, project-related odorous emissions would not be cumulatively considerable. As described above, the project **would not make a considerable contribution** to a significant cumulative impact.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Setting

To evaluate and describe the presence or absence and quality of common and sensitive biological resources in the project area, map land cover types, and identify potential effects of project implementation on those resources, Ascent biologists reviewed several existing data sources and conducted reconnaissance surveys of the project area. The data review included:

- *Dollar Creek Shared-Use Trail Project Initial Study/Initial Environmental Checklist* (Placer County and TRPA 2012);
- a records search of the California Natural Diversity Database (CNDDB) (CDFW 2016);
- Tahoe Regional Planning Agency (TRPA) and U.S. Forest Service—Lake Tahoe Basin Management Unit survey and GIS data;

- California Native Plant Society Online Inventory of Rare and Endangered Plants (CNPS 2016);
- a database search of the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) and a list of federally proposed, candidate, threatened, and endangered species that may occur in the project region (USFWS 2017);
- USFS Region 5 EVeg land cover data (U.S. Forest Service [USFS] 2014); and
- USFWS National Wetlands Inventory (updated July 2016) (USFWS 2016).

The following sections summarize the biological resources in the study area that are most relevant to the CEQA checklist questions and impact analysis for the project, which are provided in Section 3.4.2, "Discussion."

VEGETATION AND HABITAT TYPES

Sierran mixed conifer forest is the predominant habitat type in the project area, followed by montane chaparral and white fir. Although the Dollar Creek (a perennial stream) channel is located just outside the project area along its northeast boundary, a small amount of montane riparian habitat associated with the creek is present in the project area. The project area also includes reaches of Lake Forest Creek (intermittent stream and ephemeral drainage) and Barton Creek (ephemeral drainage). Table 3.4-1 summarizes the acreages of each habitat type mapped in each treatment unit. Classification of habitat types follows the California Wildlife Habitat Relationships system (CDFW 2015).

Table 3.4-1 Vegetation and Habitat Types in the Project Area (Acres)

Jeffrey Pine	Sierran Mixed Conifer	White Fir	Montane Chaparral	Montane Riparian	Freshwater Emergent Wetland	Perennial Grassland	Total
0.02	227.2	8.2	23.0	0.35	0.32	3.3	**262.4**

Source: compiled by Ascent Environmental in 2017

SPECIAL-STATUS SPECIES

Special-status species include botanical species (plants, lichen, and fungi) and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource agencies and conservation organizations. In this document, special-status species are defined as botanical species and animals in the following categories.

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA).
- Designated as a candidate for listing as threatened or endangered under ESA.
- Designated as a sensitive, special interest, or threshold species by TRPA.
- Listed or proposed for listing as threatened or endangered under the California Endangered Species Act (CESA).
- Listed or a candidate for listing by the state of California as threatened or endangered under CESA.
- Listed as fully protected under the California Fish and Game Code.
- Animals identified by CDFW as species of special concern.

- Plants considered by CDFW to be "rare, threatened or endangered in California" (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California; 1B, considered rare or endangered in California and elsewhere; and 2, considered rare or endangered in California but more common elsewhere). The California Rare Plant Ranks correspond with and replace former California Native Plant Society listings. While these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under CEQA.

- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section15125 [c]) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G).

- Otherwise meets the definition of rare or endangered under CEQA Sections 15380(b) and (d).

A preliminary list of special-status botanical and animal species with potential to occur in the project area was developed based on the field surveys and a review of the existing data sources described previously.

The data review preliminarily identified 26 special-status animal species and 30 special-status botanical species that could occur in or near the project area. Table D-1 (Appendix D) summarizes the regulatory status, habitat associations, and potential for occurrence in the project area of each special-status botanical and animal species evaluated during this analysis. Of these 56 animal and botanical species, one (mule deer [*Odocoileus hemionus*]) is known to occur in the project area and was observed during project surveys in 2017; 17 have a moderate to high likelihood to occur (California spotted owl [Strix occidentalis occidentalis], northern goshawk [*Accipiter gentilis*], western red bat [*Lasiurus blossevillii*], Sierra Nevada mountain beaver [*Aplodontia rufa califórnica*], olive-sided flycatcher [*Contopus cooperi*], yellow warbler [*Setophaga petechia*], pallid bat [*Antrozous pallidus*], upswept moonwort [*Botrychium ascendens*], scalloped moonwort [*Botrychium crenulatum*], common moonwort [*Botrychium lunaria*], mingan moonwort [*Botrychium minganense*], western goblin [*Botrychium montanum*], Davy's sedge [*Carex davyi*], short-leaved hulsea [*Hulsea brevifolia*], Santa Lucia dwarf rush [*Juncus luciensis*], alder buckthorn [*Rhamnus alnifolia*], and marsh skullcap [*Scutellaria galericulata*]); and the remainder have a low potential and are not expected to occur (Table D-1 [Appendix D]). For species not known to occur within the project area, these determinations were based on the types, extent, and quality of habitats in the project area determined during the reconnaissance-level field surveys; the proximity of the project area to known occurrences of the species; and the regional distribution and abundance of the species.

SENSITIVE NATURAL COMMUNITIES AND HABITATS

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through the TRPA Goals and Policies and TRPA Code, Section 404 of the Clean Water Act, and other applicable regulations. Sensitive natural habitats may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Many of these communities are tracked in the CNDDB.

Sensitive natural communities and habitats in the project area include: Dollar Creek (perennial stream with a reservoir) and its associated montane riparian habitat to the north of the project area; ephemeral and intermittent streams in the western portion of the project area; and a freshwater emergent wetland, along an intermittent stream in the western portion of the project area. These stream and riparian/wetland features are described in Section 3.9, "Hydrology and Water Quality."

Most of the stream and riparian/wetland habitats would likely be considered jurisdictional by U.S. Army Corps of Engineers (USACE) and the Lahontan Regional Water Quality Control Board (Lahontan RWQCB) under Section 404 of the federal CWA and the state's Porter-Cologne Act. Also, the California Department of Fish and Wildlife (CDFW) has jurisdiction over activities affecting the bed and bank of drainages. Additionally, habitats consisting of deciduous trees, wetlands, and meadows (i.e., riparian, wetland, and meadow

habitats) are designated by TRPA as habitats of special significance. The TRPA threshold standard for habitats of special significance is non-degradation while providing for opportunities to increase the acreage of these habitats.

Riparian/wetland habitats in the Tahoe Basin are also designated as stream environment zone (SEZ), which is one of two TRPA-adopted threshold standards for soil conservation. SEZ is a term used specifically in the Tahoe Basin to describe perennial, intermittent, and ephemeral streams; wet meadows, marshes, and other wetlands; riparian areas; and other areas expressing the presence of surface and ground water through its biological and physical characteristics.

3.4.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to biological resources. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- To prevent the spread of noxious weeds, all off-road equipment shall be cleaned prior to entry to the project area to remove all soil, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds.
- Forestry contractors shall be instructed to notify the Conservancy representative of sighting of any roosting bird of prey, and any nesting bird, bat, or furbearer species. Project work shall cease in the vicinity of a newly discovered nest, den, or wildlife habitation site pending review by a qualified Conservancy representative.
- Prior to a competitive bidding process as well as implementation of project operations, the Conservancy, shall prepare a project area map that identifies boundaries of treatment units, access routes, landing areas, known invasive species infestations, and locations of known resources to be avoided (e.g., wildlife or habitat resources, stream courses, meadows, and wetlands).

3.4.3 Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than significant with Mitigation Incorporated. Mitigation measures are described below for special-status species that could be adversely affected by proposed forest management activities.

SPECIAL-STATUS ANIMALS

Mule deer is designated as a special interest species by TRPA and was observed in the project area during reconnaissance surveys conducted for the project in August 2017. Six other special-status wildlife species were identified as having a moderate or high potential to occur in the project area (Table D-1, Appendix D): northern goshawk, California spotted owl, Sierra Nevada mountain beaver, western red bat, pallid bat, olive-sided flycatcher, and yellow warbler. Additionally, a small amount of the southwest corner of the project area is located just within a TRPA-designated goshawk disturbance zone. Potential impacts are discussed below for these species, except mule deer, Sierra Nevada mountain beaver, and yellow warbler. Potential impacts on mule deer are discussed under checklist item "d," which addresses effects on wildlife movement corridors. Dollar Creek and its associated riparian habitat, at the northwest boundary of the project area, provide suitable habitat for Sierra Nevada mountain beaver and yellow warbler; other riparian areas in the project area also

provide potential habitat for yellow warbler. Because treatment activities and crossings would not occur on Class I (e.g., Dollar Creek) or Class II (intermittent) waterways, or within riparian areas and SEZs (except for the potential for stream crossings on dry, Class III watercourses), potential impacts to Sierra Nevada mountain beaver and yellow warbler habitat would be avoided and this issue is not addressed further.

California Spotted Owl and Northern Goshawk

Northern goshawk is designated as a species of special concern by CDFW and a special interest species by TRPA. In the Sierra Nevada, northern goshawks breed at elevations from approximately 2,500 feet in the ponderosa pine/mixed-conifer vegetation types through approximately 10,000 feet in the red fir and lodgepole pine vegetation types, and throughout eastside pine forests on the east slope (Bloom et al. 1986). Additionally, northern goshawks nest in aspen stands occurring in shrub vegetation types on the eastern slope of the Sierra Nevada (Bloom et al. 1986). Northern goshawks are year-round residents in the Truckee and Lake Tahoe regions and are suspected to be year-round residents throughout the Sierra Nevada, although some limited seasonal altitudinal movements may occur.

California spotted owl is designated as a species of special concern by CDFW. California spotted owl occurs in several forest vegetation types: mixed conifer, ponderosa pine, red fir, and montane hardwood. In the Sierra Nevada, approximately 80 percent of known spotted-owl sites occur in mixed conifer forest, 10 percent are in red fir, 7 percent are in ponderosa pine/hardwood forest, and 3 percent occur in foothill riparian/hardwood forest and eastside pine (USFS 2001). Nesting habitat is generally characterized by dense canopy closure (i.e., 70 percent or greater) with medium to large trees and multistoried stands (i.e., at least two canopy layers). Foraging habitat can include intermediate to late-successional forest with greater than 40 percent canopy cover (Verner et al. 1992).

Spotted owl and northern goshawk have not been documented in the project area. In 2011, focused surveys for both species were conducted the vicinity by Hauge Brueck Associates biologists for the Dollar Creek Shared-Use Trail Project (Placer County and TRPA 2012). However, suitable foraging and nesting habitat for northern goshawk and California spotted owl are present in conifer forest throughout much of the project area, and multiple detections of both species, and goshawk nesting, have been documented in the vicinity west and north of the project area. Additionally, a small amount of the southwest corner of the project area is located just within a TRPA-designated goshawk disturbance zone (see Exhibit 3.4-1).

If northern goshawk or California spotted owl use any of the treatment areas for nesting, removing nest trees, reducing habitat complexity in a nesting area, or conducting activities during the active nesting season could adversely affect these species by causing nest failure or territory abandonment, or reducing the quality of habitat.

The forestry prescriptions and RPMs provide for the retention of key elements of forest structural complexity and habitat suitability for these species. For example, old-growth trees, old-growth candidate trees, and trees 30 inches diameter at breast height (dbh) and would be retained, except in limited circumstances where removal may be required (see Section 2, “Project Description”). Residual canopy cover would average at least 60 percent and a diversity of tree size classes and species would be retained; and two snags and three to five downed logs per acre, on average, would be retained.

The proposed vegetation and fuels management treatments may cause the loss or injury of spotted owl or northern goshawk, or disturbance to occupied nesting habitat, if these species are present in the project area and if project activities occur during the active nesting period (February 15 to September 15). A reduction in reproduction success could reduce the local population sizes and viability of these species. Therefore, potential impacts of project implementation would be potentially significant.

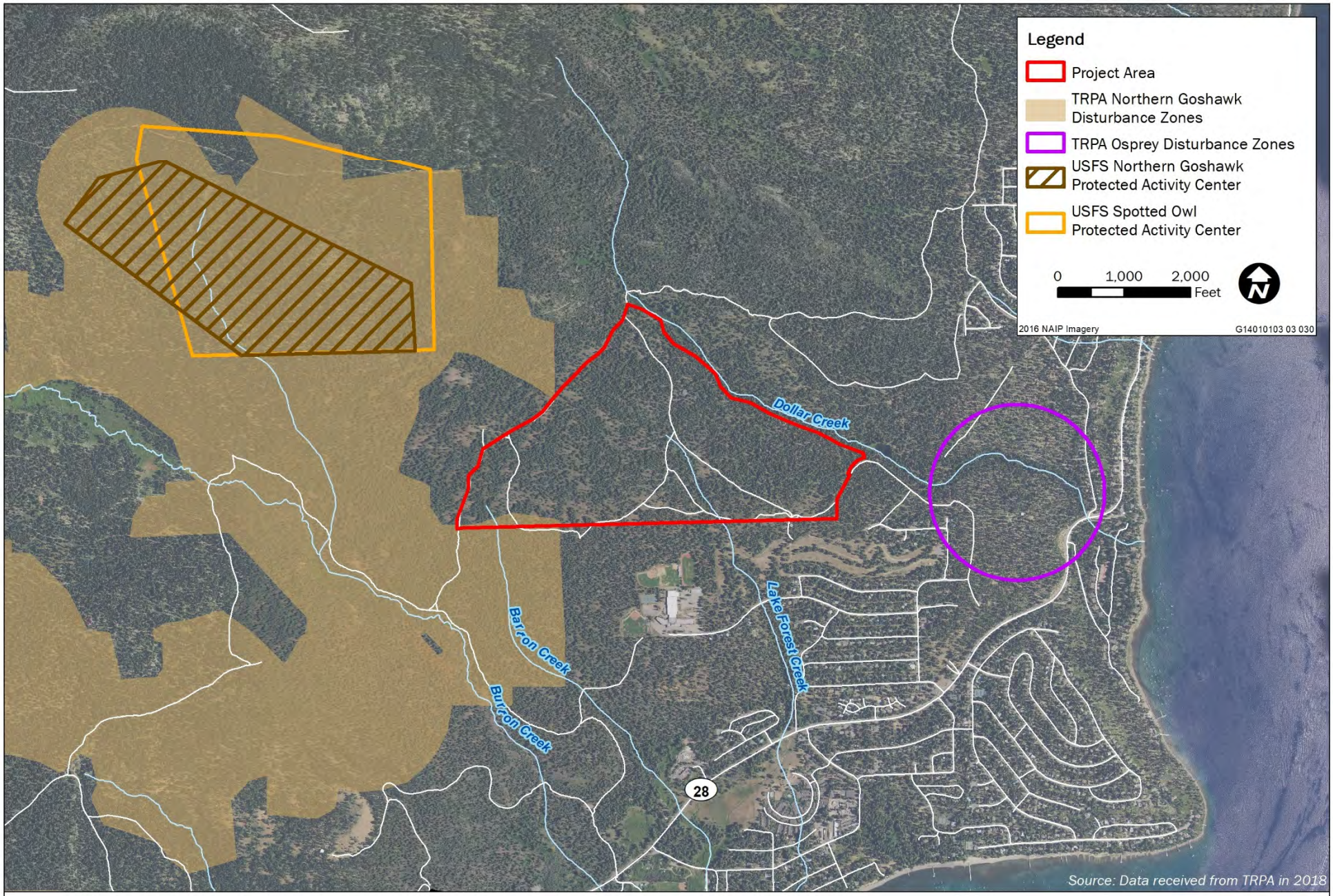


Exhibit 3.4-1 **TRPA and USFS Special Status Species**

Mitigation Measure BIO-1: Avoid Disturbances to Nesting Northern Goshawk and California Spotted Owl

This measure requires that forestry treatments do not occur reduce the quality of habitat for northern goshawk within the small portion of the project area designated as a TRPA goshawk disturbance zone; and that forestry treatments either occur outside of the active breeding seasons and sensitive nesting period for northern goshawk (February 15 to September 15) and California spotted owl (March 1 to August 31), or if work occurs during the breeding season, that pre-project surveys be conducted for the species and active nest sites be avoided during the sensitive nesting periods. Specifically, this measure requires the following:

- Forestry treatments shall not be implemented within TRPA wildlife disturbance zones, unless habitat enhancement for the species is part of the treatment objectives and approved by TRPA. Currently, the southwest corner of the project area includes a small portion of a TRPA goshawk disturbance zone. TRPA maintains a nondegradation standard for habitat within disturbance zones. For areas outside of TRPA urban plan areas, Section 62.4.1, "Disturbance Zones," of the TRPA Code states that the habitat in TRPA-designated disturbance zones around goshawk nests "shall not be manipulated in any manner unless such manipulation is necessary to enhance the quality of the habitat." Section 62.4.3, "Environmental Documents," states that "applicants for projects within disturbance zones shall submit with their applications appropriate environmental documentation prepared by a biologist that includes specific recommendations for avoiding significant adverse impacts to the … species."

- To the extent feasible, for treatments within suitable habitat for northern goshawk or California spotted owl, project activities shall occur outside the breeding season to avoid potential disturbances to nesting activities. The breeding season for northern goshawk is defined as February 15 to September 15; the breeding season for California spotted owl is defined as March 1 to August 31.

- For vegetation treatments that may occur within suitable habitat for northern goshawk or California spotted owl during the breeding season, the following shall be implemented.

  - A qualified biologist shall conduct protocol surveys for northern goshawk and California spotted owl, to identify nest sites that may be affected by project activities. The survey protocols for each species include multiple options for specific survey methods and timing to meet the survey objectives. Generally, for northern goshawk, the standard broadcast acoustical survey methodology recommends a two-year survey, which involves completing two survey visits between June 1 and August 15 in each of two consecutive years (i.e., four total survey visits over two years). However, completing all four survey visits within one year has also been used to fulfill the survey protocol for projects in the Tahoe Basin.

  - The spotted owl survey protocol includes one-year and two-year options for completing a total of six survey visits at a project site (i.e., three visits per year for the two-year option, or six visits within the same year for the one-year option). The protocol recommends conducting spot calling surveys between March 1 and August 15. Under the one-year survey option, the protocol requires that at least four of the six survey visits are completed before June 30. Under the two-year survey option, three visits would be completed during each of two consecutive years, with two of the three visits each year completed before June 30.

  - If an active northern goshawk or California spotted owl nest is present, no project activities, other than vehicle passage on existing roadways, shall occur within 0.25 mile of active California spotted owl or northern goshawk nests during the breeding season (March 1 to August 31 for spotted owl; February 15 to September 15), unless protocol-level surveys confirm that the birds are not nesting. A qualified biologist may amend the start and end dates of these limited operating periods with concurrence from appropriate agencies if it can be determined that breeding has not started, or that fledglings have left the nest or the nest is otherwise no longer active. If the location of a nest site within a likely nesting area is unknown (based on bird activity and behavior that indicates nesting,

but no confirmation of a nest location), either surveys are required to locate the nest stand and determine nesting status or, as an alternative to surveys, an activity buffer shall be applied to the 0.25-mile radius surrounding the area. The activity buffer may be waived for activities of limited scope and duration, when a field evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a field evaluation concludes that a nest site shall be shielded from planned activities by topographic features that would minimize disturbance, the buffer distance may be modified in coordination between the Conservancy and CDFW.

- If an active northern goshawk or California spotted owl nest is located in the project area, forestry treatments shall be designed or modified, as needed, and implemented to either enhance or avoid substantial modification to existing habitat suitability and forest structure in the immediate vicinity of the nest. For example, an option may include no implementation of forestry treatments within 500 feet of a known active nest.

Level of Impact after Implementation of Mitigation Measures

With implementation of Mitigation Measure BIO-1, project implementation would not substantially affect the distribution, breeding productivity, viability, or the regional population (Tahoe-Truckee) of northern goshawk or California spotted owl. This conclusion is based on the following: 1) although individuals could be disturbed during site preparation and vegetation and fuels management activities, disturbances to breeding spotted owls and northern goshawks, effects on reproductive success, and the potential for direct mortality would be avoided or minimized; 2) forestry prescriptions would retain forest complexity and habitat suitability; and 3) no occupied nest sites would be removed. Therefore, potential impacts to northern goshawk and California spotted owl would be **less than significant with implementation of Mitigation Measure BIO-1**.

Olive-sided Flycatcher

Olive-sided flycatcher is designated by CDFW as a species of special concern. In general, this species breeds in open canopy, late-succession forest. Open conifer forests are used within the Sierra Nevada, and forest edges are important for foraging. Tree species used for nesting vary throughout the species' range; snags provide valuable habitat and nesting features throughout the range. Olive-sided flycatcher uses lofty perches for foraging and singing, and can often be found perched on the apical tip of trees, above the surrounding canopy (Shuford and Gardali 2008). This species is not uncommon in the Truckee-Tahoe region and is known to occur in open canopy conifer forests within the Tahoe Basin. Although olive-sided flycatcher has not specifically been documented in the project area, this species is assumed to occur in the project area and forest habitat conditions in the project area could support all life stages of this species. Specifically, mixed-conifer forests with ample edge habitat dominated by Jeffrey pine or lodgepole pine provides foraging and nesting habitat for olive-sided flycatcher.

If olive-sided flycatchers use any of the treatment units or adjacent areas for nesting, project-related forest thinning operations within occupied habitat could impair breeding and nesting activities. In addition to direct removal of individuals and habitat during construction, removing or disturbing occupied nesting habitat could result in a substantial effect if individuals of these species would be deterred from occupying breeding and nesting locations. Site preparation and operations activities could also result in smoke, noise, dust, and other disturbances to nesting birds in the vicinity, potentially resulting in nest abandonment and mortality to eggs and chicks. A reduction in reproduction success or loss of occupied habitat for olive-sided flycatcher could reduce the local population size and viability of these species. Therefore, potential impacts of project implementation would be potentially significant.

Mitigation Measure BIO-2: Conduct preconstruction surveys for nesting special-status songbirds, and implement a limited operating period if necessary

For project-related vegetation disturbances that would occur in suitable habitat during the bird nesting season (generally April 1–August 31, depending on species, snowpack, and other seasonal conditions), a qualified

wildlife biologist shall conduct focused surveys for special-status songbird (including olive-sided flycatcher) nests no more than 14 days before vegetation-disturbance activities are initiated each project season. The pre-project survey for active nests shall be conducted using a nest-searching technique appropriate for the species, as determined by a qualified biologist. For example, for many songbirds, an appropriate technique involves first conducting point counts in suitable habitat to determine occupancy, followed by nest searching if the species is present.

If an active nest is located during the pre-project surveys, the biologist shall notify the Conservancy. All work shall cease in the direct vicinity of the active nest. Appropriate buffers around nests and limited operating periods shall be established through consultation with CDFW to avoid disturbances during the sensitive nesting season.

Level of Impact after Implementation of Mitigation Measures

Implementation of Mitigation Measure BIO-2 would avoid the loss of individuals or nests of special-status songbird species (olive-sided flycatcher). With implementation of this measure, the project would not substantially affect the distribution, breeding productivity, viability, or the regional populations of these species. Therefore, potential impacts to olive-sided flycatcher would be **less than significant with implementation of Mitigation Measure BIO-2.**

Pallid Bat and Western Red Bat

Pallid bat is designated as a species of special concern by CDFW and High Priority by the Western Bat Working Group. Throughout California, pallid bat is usually found in arid habitats below 6,000 feet elevation; however, the species has been found up to 10,000 feet in the Sierra Nevada. Pallid bats use a variety of habitats including grasslands, shrublands, woodlands, and coniferous forests. Pallid bats are most common in open, dry habitats that contain rocky areas for roosting. Day roosts may vary but are commonly found in rock crevices, tree hollows, mines, caves and a variety of human-made structures. Night roosts are usually more open sites and may include open buildings, porches, mines, caves, and under bridges. Tree roosting has been documented in large conifer snags, inside basal hollows of redwoods and giant sequoias, and bole cavities in oaks (Sherwin 1998). Pallid bats are yearlong residents in most of their range and hibernate in winter near their summer roost (Zeiner et al. 1990). Though no documented occurrences of pallid bat exist for the project area, the coniferous forest present in the project area and vicinity may provide suitable foraging habitat as well as roosting habitat in large trees and snags and in more open areas.

Western red bat is designated as a species of special concern by CDFW and High Priority by the Western Bat Working Group. Red bats are found primarily in dense riparian woodland habitats containing willow, cottonwood, and sycamore trees. Red bats appear to differentially select relatively wide, well-developed riparian habitats with large trees for breeding roosts; however, roosting has also been documented in orchards adjacent to riparian areas (Pierson et al. 2006). Western red bats typically forage within or near riparian zones, along stream banks and gravel bars (Pierson et al. 2006) or at high altitudes over the tree canopy (Tahoe National Forest 2009). Foraging typically begins 1 to 2 hours after sunset (Tahoe National Forest 2009). In the Tahoe Basin, western red bat is not common but has been detected occasionally. In the project area, western red bat has not been documented but potential habitat is present and the species could occur, particularly along the Dollar Creek riparian zone.

Implementation of the project could disturb or injure pallid and western red bats that may be roosting in the project area. If roost sites for pallid bat or red bat are present in or adjacent to proposed treatment areas, without implementation of measures to avoid disturbance or loss of active roost sites, temporary disturbances resulting from project-related noise could disrupt roosting bats, including breeding females, and cause them to abandon a roost site and young. Project activities within suitable habitat that remove or disturb trees or other structures used for roosting could remove or cause abandonment of these features. Additionally, the removal of trees occupied by bats during vegetation management activities could injure or kill bats. This impact would be potentially significant. Loss of active roost sites could affect distribution of individuals over time if other suitable roost sites are not available; however, potential roost sites are not limited to the project disturbance footprint; other forested habitat with potential roost structures is present

throughout the project area and the surrounding forest. Because vegetation and fuels management activities would occur during the day when bats are typically not active, disturbances to foraging behavior and prey would be minimized.

Mitigation Measure BIO-3: Conduct pre-construction surveys for special-status bats, avoid removal of important roosts, and implement a limited operating period if necessary

To avoid project-related disturbances or removal of potential bat summer maternity roosts or winter hibernation roosts, forestry treatments shall be implemented during the fall (approximately September–October), outside of the general maternity and hibernation periods, to the extent feasible. If treatments are implemented outside of the summer maternity and winter hibernation periods, no further actions under this mitigation measure are required.

For treatment activities that may occur during the winter hibernation or summer maternity periods (i.e., for activities during approximately November—August), a bat specialist shall conduct a habitat assessment and survey prior to project implementation, to identify whether the project area contains trees or structures that may support potential maternity or hibernation roosts. The survey shall be conducted no more than 14 days before vegetation disturbance activities are initiated each project season. Locations of vegetation and tree removal or excavation shall be examined for potential bat roosts, particularly maternity and hibernation roosts. Specific survey/assessment methodologies shall be determined in coordination with CDFW, and may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, evidence of bat use at potential roost sites (e.g., bat sign such as guano), or use of ultrasonic detectors (e.g., Sonobat, Anabat). Removal of any significant roost sites located shall be avoided to the extent feasible.

If it is determined that an active roost site cannot be avoided and would be affected, bats shall be excluded from the roost site before the site is removed (however, see restrictions on this during sensitive periods, below). The biologist shall first notify and consult with CDFW on appropriate bat exclusion methods and roost removal procedures. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Once it is confirmed that all bats have left the roost, crews shall be allowed to continue work in the area.

Exclusion efforts shall be restricted during periods of sensitive activity (e.g., during winter hibernation or while females in maternity colonies are nursing young [generally, during late spring and summer]). If a likely hibernation or maternity roosting site is discovered, the Conservancy shall consult with CDFW to establish appropriate exclusionary buffers until all young are determined to be volant (i.e., able to fly) by a qualified biologist. Once it is determined that all young are volant, passive exclusion devices shall be installed and all bats would be allowed to leave voluntarily. Once it is determined by a qualified biologist that all bats have left the roost, crews shall be allowed to work within the buffer zone.

Level of Impact after Implementation of Mitigation Measures

Implementation of Mitigation Measure BIO-3 would avoid the loss of individuals or occupied roosts of special-status bat species. With implementation of this measure, the project would not substantially affect the distribution, breeding productivity, viability, or the regional population of pallid bat or western red bat. Therefore, potential impacts to these bat species would be **less than significant with implementation of Mitigation Measure BIO-3.**

SPECIAL-STATUS PLANTS

No special-status plant taxa have been documented within the project area. Ten special-status plant species – upswept moonwort, scalloped moonwort, common moonwort, mingan moonwort, western goblin, Davy's sedge, short-leaved hulsea, Santa Lucia dwarf rush, alder buckthorn, and marsh skullcap – were identified as having a moderate or high potential to occur in the project area (Table D-1, Appendix D). However, eight of these species are associated with meadows, riparian areas, seeps, and moist soils. The forestry prescriptions and RPMs have been designed to avoid stream and SEZ habitats, and as such, special status plant species associated with meadows, riparian areas, seeps, and other moist soils would not be affected

by project activities. Two special status plant species (Davy's sedge and short-leaved hulsea) could occur in upland conifer forests within the project area, and could be affected by project activities. No focused surveys for special-status plant species have been conducted to confirm the presence or absence of these two special-status species in the project area. Therefore, project implementation could disturb or remove special-status botanical species, if they are present.

Without implementation of measures to locate and avoid special-status plants, proposed vegetation and fuels management activities could result in the disturbance or loss of special-status plants if they are present. In addition to direct removal of individuals and habitat during site preparation and forest thinning activities, plants could suffer other direct physical damage, including breaking, crushing, and burying. Damaged plants may experience altered growth and development, or reduced or eliminated seed-set and reproduction, and mortality of individuals or populations can eventually result. Loss of special-status plants would be a potentially significant impact.

Mitigation Measure BIO-4: Conduct Surveys for and Avoid Occurrences of Special-Status Botanical Species

The Conservancy shall implement the following measures to reduce potential impacts on special-status botanical species:

- Before commencement of each phase of project implementation and during the growing season for Davy's sedge and short-leaved hulsea, a qualified botanist shall conduct protocol-level botanical surveys in areas that were not surveyed previously and where potentially suitable habitat would be removed or disturbed by project activities. The growing season for Davy's sedge and short-leaved hulsea is generally May–August (depending on moisture and snowpack conditions), with peak blooming typically in June–July.

- If no special-status botanical species are found, the botanist shall document the findings in a letter report to the Conservancy and CDFW and no further mitigation would be required.

- If special-status botanical species are found, the locations of these occurrences shall be clearly marked with fencing, staking, flagging, or other appropriate material. All project personnel and equipment shall be excluded from these areas to protect the identified plants.

Level of Impact after Implementation of Mitigation Measures

Therefore, potential impacts to special-status botanical species would be **less than significant with implementation of Mitigation Measure BIO-4**, because it would require that any such species present are avoided and protected from project activities.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than significant. Sensitive natural communities and habitats in the vicinity of or within the project area include: Dollar Creek (perennial stream with a reservoir) and its associated montane riparian habitat to the northwest; ephemeral and intermittent streams in the western portion of the project area; and a freshwater emergent wetland, along an intermittent stream in the western portion of the project area.

The forestry prescriptions and RPMs have been designed to avoid stream and SEZ habitats. For example, treatment would be excluded from SEZs, including wetlands and riparian areas, except for the potential for stream crossings on approved dry, Class III watercourses that are sufficiently dry as not to cause disturbance on existing designated stream crossings. Treatment activities and crossings would not occur on Class I (e.g., Dollar Creek) or Class II (intermittent) waterways, or in freshwater emergent wetland habitat.

With implementation of forestry prescriptions and RPMs designed to protect streams, wetlands, riparian habitats, and SEZs (including BMPs and other design features), disturbances to these habitats would be

avoided, except for potential stream crossings on approved, dry Class III watercourses. Where stream/drainage crossings may be required, disturbances would be temporary and minor. Over the long term, the project would substantially reduce the threat of high severity wildfire adjacent to SEZs. Therefore, potential impacts of project implementation on riparian, stream, SEZ, and other sensitive habitats would be less than significant.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than significant. A delineation of wetlands and other waters of the United States has not been conducted for the project area. However, the sensitive natural communities and habitats in the project area discussed previously in checklist item "b" are considered potentially jurisdictional wetlands under CWA 404. These habitats include montane riparian and stream habitats, and freshwater emergent wetland. As described previously, the forestry prescriptions and RPMs have been designed to avoid stream and SEZ habitats. As described in the RPMs, prior to implementation of project operations, the Conservancy, in coordination with the forestry contractor, would prepare a project area map that identifies boundaries of treatment units, access routes, landing areas, stream courses, meadows, and wetlands; and the forestry contractor would not enter mapped meadows and wetlands. Treatment would be excluded from wetlands and meadows, riparian areas, and SEZs except for the potential for stream crossings on approved dry, Class III watercourses that are sufficiently dry as not to cause disturbance on existing designated stream crossings. Treatment activities and crossings would not occur on Class I (e.g., Dollar Creek) or Class II (intermittent) waterways, or in freshwater emergent wetland habitat.

For the reasons described in checklist item "b," no fill, hydrologic interruption, or long-term removal of wetlands would occur, and a CWA 404 permit is not expected to be required. Therefore, potential impacts of project implementation on federally protected wetlands would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than significant. The proposed project would not impede fish passage and no project work would occur within any fish bearing stream. Reducing tree density and altering forest structure of large contiguous areas of forested habitat could disrupt wildlife movement corridors, particularly for mule deer. The Verdi sub-unit of the Loyalton-Truckee Deer Herd migrates from the eastern Sierra Nevada foothills outside of Reno, Nevada, southwest into eastern Sierra, Nevada, and Placer counties in California during the spring and summer months after breeding. As described in the Loyalton-Truckee Deer Herd Management Plan (CDFW 1982), individuals migrated along the northern and southern sides of Interstate 80 (I-80) southwest from the Truckee Meadows in Nevada. Deer moving along the southern side of I-80 then followed the Truckee River into the Martis Valley before diverging into the Donner Lake and west Lake Tahoe Basin areas. The project area is located in the vicinity of the migration route along the Truckee River into the Lake Tahoe basin.

Mule deer use early to mid-successional stages of several vegetation types, including riparian, meadow, and forest for summer range. Important habitat requirements for mule deer fawning include undisturbed meadow and riparian areas that provide hiding cover and forage. The project area includes suitable foraging habitat and deer are present there. The project area includes potential fawning habitat for mule deer in riparian and wet meadow areas; however, the suitability of these areas for deer fawning is limited because of the existing levels of human disturbance and lack of dense vegetation in some areas.

Vegetation and fuels management activities could cause mule deer to avoid or move out of the areas immediately surrounding work areas. This could result in temporary impacts to foraging, movement, or sheltering behavior. Because mule deer are highly mobile and adaptive, potential effects of temporary construction activities are expected to be minor. Implementation of the project would not create any temporary or permanent barriers to movement that would redirect migration during non-working hours;

during treatment activities, deer could move around work areas through nearby coniferous forest and other natural habitats. Because the study area is outside of mule deer winter range, winter habitat or access to winter grounds would not be affected by project implementation.

No substantial permanent impacts to mule deer fawning, important foraging, or core movement routes are anticipated as a result of project implementation, and no habitat loss would occur within any known fawning areas. Mule deer may migrate through or forage in any of the treatment areas; if so, short-term treatment activities and increased human disturbances there could disturb individuals. However, because areas that would be treated are not expected to support fawning mule deer, and project implementation would not substantially affect the composition, structure, or abundance of core mule deer foraging or known important migratory routes, potential effects of the project would not be substantial. The project would not introduce any new large linear corridors or other obstructions that are expected to deter or prevent mule deer from using traditional areas or other presently-used core habitat locations throughout its range. Additionally, the treatment prescriptions and RPMs have been designed to provide a mosaic of habitat types and maintain wildlife movement opportunities in the project area. Therefore, implementation of the project is not expected to substantially affect deer movements or migration routes. Any potential impacts would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than significant. TRPA regulates the management of forest resources in the Tahoe Basin to achieve and maintain the threshold standards for species and structural diversity, to promote the long-term health of the resources, and to create and maintain suitable habitats for diverse wildlife species. Provisions for tree removal are provided in the following chapters and sections of the TRPA Code: Chapter 61, Vegetation and Forest Health, Section 61.1, Tree Removal, Section 61.3.6, Sensitive and Uncommon Plant Protection and Fire Hazard Reduction, and Section 61.4, Revegetation; Chapter 36, Design Standards; and Chapter 33, Grading and Construction, Section 33.6, Vegetation Protection During Construction.

The Conservancy and TRPA have entered into a Memorandum of Understanding for exempt activities (TRPA and Conservancy 1999), which allows the Conservancy to implement "Vegetation management for fire prevention purposes" without a permit from TRPA. Additionally, the project would not conflict with TRPA policies or threshold standards for protecting late seral/old growth forest. The forestry prescription would maintain remnant old-growth trees, old-growth candidate trees, an uneven-aged stand structure arranged in multiple canopy layers, select clumps of shrubs and understory vegetation, snags, and pockets of coarse woody debris. Specifically, as described in the RPMs, all old-growth trees, old-growth candidate trees, and trees 30 inches dbh and larger would be retained; although, exceptions to this retention would be allowed for equipment operability, insect and/or disease outbreaks, and trees that pose a safety hazard. Additionally, residual canopy cover would average at least 60 percent and a diversity of tree size classes and species would be retained; and two snags and three to five downed logs per acre, on average, would be retained. Therefore, approved project-related tree removal would not conflict with the tree removal and protection provisions of the TRPA Code. Additionally, the project would not conflict with any other local policies or ordinances protecting biological resources. Therefore, this impact would be less than significant.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The project is not located within an area covered under an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plan. Therefore, Project implementation would not conflict with the provisions of an adopted conservation plan and would result in no impact.

CUMULATIVE IMPACTS

The geographic scope for analyzing the cumulative effects on biological resources consists of the Tahoe Region. As described in checklist item "a" for biological resources, potentially significant impacts requiring mitigation for biological resources are the potential loss or disturbance of special-status animal and plant species.

Present and probable future projects that would also affect habitat for special-status wildlife and plants, and other biological resources, in the project vicinity include residential and commercial development, recreation facilities and resort development, and other forest thinning projects. Development projects that overlap with native habitats would be expected to have some level of adverse effects on these resources; however, forest thinning projects are expected to result in long-term habitat enhancement that would benefit several wildlife species. When combined with other past, present, and probable future projects with similar biological effects, implementation of the proposed project could contribute to an adverse cumulative effect on special-status wildlife. However, project implementation is not expected to substantially affect the distribution, breeding productivity, population viability, or the regional population of any special-status species; or cause a change in species diversity locally or regionally. Implementation of RPMs and mitigation measures committed to by the Conservancy would reduce potential impacts to biological resources to less-than-significant levels. Additionally, because the Lake Tahoe Basin is recognized as environmentally sensitive, sufficient protections are in place by TRPA, Placer County, USACE, Lahontan RWQCB, and the LTBMU to require that impacts of this project, and any nearby projects, are minimized. Therefore, the proposed project would not make a considerable contribution to a cumulative impact on biological resources.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

3.5.1 Setting

The primary sources of information used to prepare this section include the *Archaeological Survey Report for the Dollar Creek Fuel Reduction Placer County, California* (Conservancy 2015), and the *North Tahoe Interagency Forest Health and Bioenergy Project Dollar Property Cultural Resource Inventory and Evaluation* (Lindstrom 2018).

PREHISTORIC CONTEXT

Archaeological research in the Sierra Nevada over the last 50 years has resulted in the accumulation of a substantial body of knowledge. Investigations that began in the 1950s revolved around examining sites throughout the Lake Tahoe vicinity, including the lake shoreline, and the high Sierran crest east of the lake. These investigations led to the identification of the Martis and Kings Beach complexes. More recent investigations have led to important modifications of earlier archaeological sequences. Excavations and analyses have identified the presence of two early archaeological manifestations named the Tahoe Reach and Spooner Phases, and the division of the Martis and Kings Beach Complexes into more refined phases. Each phase is described briefly below.

The Tahoe Reach Phase, dated from approximately 10,000 to 8000 years before present (BP), marks the earliest reliable presence of human occupation in the Region. The presence of stone tools, made from a variety of sources on both the east and west sides of the Sierra Nevada, implies a wide-ranging subsistence-settlement pattern. There has been increasing evidence to suggest that the Region was inhabited soon after the last glacial maximum at the terminal Pleistocene/early Holocene—in other words, as soon as the area was habitable by humans.

The Spooner Phase dates from approximately 8000 to 4000 BP. The climate was hot and dry. Lake Tahoe was much lower than it is today, and there is little evidence of human occupation in the Region, probably because of a reduction of available food resources compared to earlier in time. Also, no artifacts such as a specific bead or projectile point type have been identified as a marker for this phase. Alternatively, the apparent lack of human occupation may be at least partly the result of inundation of sites by rising lake levels in more recent times, and of the use of projectile point styles for longer periods than previously thought; that is, the sites may be there but have been assigned to the wrong phase.

The Early and Late Martis Phases date from 5000 to 3000 BP and from 3000 to 1300 BP, respectively. The climate became cooler and wetter during this time, increasing the productivity of the environment. Large bifaces (two-sided stone tool used as a multi-purpose knife), made of basalt were in wide use during both phases, making the Early and Late Martis Phases the most recognizable and often encountered phases of any in this cultural sequence; biface production requires a relatively large amount of raw material and subsequently produces a large amount of debitage. In addition, research indicates an increase in cultural complexity, as evidenced by larger and more formal structures, craft specialization, an increase in textiles, and evidence for far-reaching trade networks.

The Early and Late Kings Beach phases date from approximately 1300 to 150 BP. The Early Kings Beach Phase had a warm climate compared to the modern day, and there may have been extended periods when Lake Tahoe did not overflow. One of the most important technological changes during these phases was the switch to bow and arrow technology, as evidenced by smaller projectile point types. Bedrock mortars increased in number as small seeds became more important in the diet, as did the role of fishing. This phase also likely marks the introduction of the Washoe into the Region.

ETHNOGRAPHY

The project area is located within the traditional territory of the Washoe although other tribes may have also periodically resided in Lake Tahoe as well. The Washoe language is a part of the Hokan linguistic stock. There are several subdivisions of Washoe; the Southern Washoe, Eastern Washoe, and Northern Washoe. The project area would have been used primarily by the Northern Washoe, whose territory also included the modern-day areas of Reno, Truckee, Loyalton, Sierra Valley, Long Valley, and Honey Lake. Unlike the Southern and Eastern Washoe, Lake Tahoe may have been less important economically to the Northern Washoe because they had several other sources of fish, although the project area was considered excellent for deer hunting.

The Washoe mobilized to various locations seasonally to take advantage of food resources as they became available. Seasonal rounds were more restricted for the Washoe than for surrounding groups, however, because of an abundance of reliable resources within their territory. Despite these resources, they often made long trips to gather acorns, hunt, and trade with neighboring tribes. Several of the routes they developed would later be used as modern trail systems. Roots used for medicinal purposes and food, and seeds, berries, and marsh plants were collected in mountain valleys and on mountainsides during the summer. Hunting of large game, such as mountain sheep and deer, and small animal trapping occurred at higher elevations. Washoe groups tended to travel to lower elevations during more harsh seasons of the year. Not only were plants used for medicine and food, but several plants were used to make baskets for both personal use and trade.

Lake Tahoe had great spiritual importance for the Washoe, who considered it the center of their world. The Washoe name for Lake Tahoe is *Da ow a ga*, meaning “edge of lake”; the lake’s modern name is derived from a mispronunciation of this Washoe term. Several Washoe camps have been identified along the edge of Lake Tahoe, including one near the Lake Tahoe Dam named *daubayodu’E* (“running over”) and another at the outlet of the Truckee River named *debeyumewe* (“coming out”). The camp near the Tahoe outlet was destroyed by the construction of SR 89. Several camps used by the Washoe are now underwater.

HISTORICAL CONTEXT

In 1844, John C. Frémont and his companion Charles Preuss recorded the first sighting of Lake Tahoe by a Euro-American. Later that same year, members of the westward-bound Stevens-Murphy-Townsend party were likely the first Euro-Americans to venture onto the shore of the lake. The California Gold Rush, centered mainly in the Sierra Nevada foothills, and the subsequent Comstock Lode silver rush that occurred a decade later in Nevada, drew thousands of miners and entrepreneurs through the Tahoe Sierra on their way to the mining locales. During this period, the lake was known by various names, including Mountain Lake and Lake Bigler. It was officially designated Lake Tahoe by the California Legislature in 1945.

The discovery of silver near Virginia City (Comstock Lode) caused a reverse migration from west to east with travel corridors becoming established through the Tahoe basin. The development of Nevada's Comstock mines was only possible by exploiting the lake's seemingly endless supply of timber and water needed to build the square-set timbering system and to supply water for the steam-powered mills.

The urgent demand for fuel wood and construction lumber by the growing settlements and mines devastated the forest stands east of the Carson Range and the Lake Tahoe basin. Within the basin, timber was initially harvested along the east side of the lake followed by operations expanding to the west, north and south shores, respectively. Many historical records and photographs indicate that many timber stands were clear-cut. Clear-cutting on steep slopes and near drainages accelerated erosion and caused high sediment loads to enter the streams and subsequently into the lake. The basin was stripped of marketable timber by 1898 which concluded large-scale harvesting operations in the area.

With people traveling through the basin from the California Mother Lode to Nevada's Comstock Lode, came the need for new travel routes through the basin. The most popular route was the road along Lake Tahoe's south shore which is the approximate alignment of modern Highway 50 and Pioneer Trail. Various summit passes opened by the early 1860s but roads were generally in poor condition and did not yet circumvent the lake. Steamer traffic dominated travel in the Tahoe basin from the 1860s to 1910s. Automobile traffic increased through the basin with the designation of the Lincoln Highway (1913), the nation's first coast-to-coast highway, and included the main road through South Lake Tahoe (Highway 50/Pioneer Trail) as well as the road over Donner Summit (Highway 40/Interstate 80). The U.S. Bureau of Public Roads expanded and upgraded the roads within the basin between 1928 and 1935, and consequently promoted a wider range of public to travel to the Lake.

The early resort era at Lake Tahoe began in the 1860s with resorts opening in Lake Valley, Tahoe City, Brockway, McKinneys, and Glenbrook. Ranches, hostlers, and commercial fisherman in Lake Valley profited from the lucrative business of supplying travelers and the growing mining centers with locally grown hay, vegetables, dairy products, and fish. Various hotels and resorts operated during the next decade as tourism flourished in the 1880s with the establishment of resorts in Lake Valley, Emerald Bay, Sugar Pine Point, Blackwood, and Tahoe City. Tourism in north Tahoe was promoted by the completion of the Lake Tahoe Railway and Transportation Company in 1901, which connected Tahoe City with the Southern Pacific mainline at Truckee. Visitor traffic and the associated tourism industry increased substantially with the completion of the first automobile loop road circumventing the lake by 1925 and the expansion and improvement of basin roads in the early 1930s. Tourism and development in the Lake Tahoe basin has continued through the latter part of the 20th century and continues today.

KNOWN RESOURCES

A records search was performed at the North Central Information Center (NCIC) for the project area (NCIC File No.: PLA-17-82) in September 2017. The search revealed no cultural sites or features, however three prior archaeological studies had been conducted in the project area. Field surveys performed in September 2017 revealed two historic-era road segments (P-31-2008 and P-31-5799), a cluster of three sparse prehistoric lithic scatters (D2-D4) and a multi-component site (D1) containing a sparse prehistoric lithic scatter and historic roadside refuse scatter.

The recorded segment of the Old County Road (P-31-2008), its roadside refuse deposit (Site D1 historic component), and the recorded segment of the pre-1955 road (P-31-5799) are recommended ineligible for listing in the California Register of Historical Resources (CRHR) under any criteria. Prehistoric sites D2-D4 and the site prehistoric component at site D1 are recommended eligible for listing in the CRHR under Criterion 4, given their potential to yield important information regarding regional prehistory. A segment of the Old County Road (P-31-2008) passes through the prehistoric component of site D1 and a non-historic dirt utility road traverses through sites D2-D4. Surface artifacts observed within the road prisms have been disturbed by on-going passage of vehicles. Potential buried archaeological deposits within the road prism at sites D2-D4 have been disturbed by installation of modern utilities. Although artifacts within the road prism

are likely disturbed and lack integrity, artifacts outside the road prisms may retain integrity. As such, only those portions of the sites located outside the dirt road prisms are recommended eligible as contributing elements for listing in the California Register. Site areas within the dirt road prisms are considered ineligible non-contributing elements due to lack of integrity.

Native American outreach was initiated on September 20, 2017 with a letter and project map to the Tsi Akim Maidu, the Shingle Springs Band of Miwok Indians, and the Colfax Todd's Valley Consolidated Tribe. No response was received from the Cahuilla Indians. The Colfax Todd's Valley Consolidated Tribe responded on September 26th, indicating the potential sensitivity of the project area to contain Native American artifacts and asked to be kept informed of archaeological survey results. On October 10th, the Shingle Springs Band of Miwok Indians responded, stating that they were unaware of any resources on the project site, but were interested in updates and survey results.

3.5.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to cultural resources. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- An appropriate, qualified archaeological surveyor, archaeologist, or cultural resource monitor shall be available either onsite and/or over the phone during project operations to prescribe additional protective measures, as needed, for any newly discovered sites. If evidence of previously undocumented historical/archaeological resources are found (e.g., shell, burned animal bone or rock, concentration of bottle glass or ceramics, etc.), the contractor shall immediately cease work in the vicinity of the find and contact the Conservancy's cultural resource designee. Work in the area shall not resume unless instructed by the Conservancy after identification and proper avoidance, preservation, or recovery measures are determined and implemented.

- If human remains are discovered during treatment activities, work shall be suspended in the area of the remains, and the contractor or cultural resource monitor shall notify the Placer County coroner and the Native American Heritage Commission (NAHC) immediately, according to Section 5097.98 of the State PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the cultural resource monitor, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to prevent disturbance of additional human interments.

3.5.3 Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less than significant. Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads). Neither the 2017 record search nor the pedestrian survey revealed any historical resources within the project area. In addition, the area has been impacted by the construction and use of adjacent houses as well as hiking trails, which are both outside and inside the project area. However, project-related activities have the potential to disturb previously undiscovered or unrecorded cultural resources. Treatment activities within the project area would implement the resource protection measures (RPMs) identified for this project, as described in Section 2.3.6, "Resource Protection Measures."

As described in Section 2.3.6, "Resource Protection Measures," the project includes RPMs intended to minimize impacts to resources during treatment activities. For cultural resources, the resource protection measures are listed above. Implementation of these RPMs would ensure that any known or currently undiscovered historical resources would be avoided, moved, recorded, or otherwise treated appropriately, in accordance with applicable laws and regulations. With implementation of these RPMs, this impact would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation. Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). The 2017 record search did not identify any known archaeological resources within the project area, however, the pedestrian survey revealed six archaeological resources: two historic-era road segments (P-31-2008 and P-31-5799), a cluster of three sparse prehistoric lithic scatters (D2-D4) and a multi-component site (D1) containing a sparse prehistoric lithic scatter and historic-era roadside refuse scatter. The segment of the Old County Road (P-31-2008), its roadside refuse deposit (the historic component of Site D1), and the segment of the pre-1955 road (P-31-5799) were evaluated as ineligible for the CRHR and are therefore not resources under CEQA. Prehistoric sites D2-D4 and the site prehistoric component at Site D1 are recommended eligible for listing in the CRHR under Criterion 4, given their potential to yield important information regarding regional prehistory. Damage to any of these resources would be a significant impact.

In addition, project-related activities have the potential to disturb previously undiscovered or unrecorded cultural resources. As described in Section 2.3.6, "Resource Protection Measures" and under discussion "a" above, the project includes resource protection measures intended to minimize impacts to resources during and after treatment activities. Implementation of these RPMs would ensure that known and currently undiscovered archaeological resources would be avoided, moved, recorded, or otherwise treated appropriately, in accordance with applicable laws and regulations.

Mitigation Measure CUL-1: Avoid and monitor potentially eligible archaeological sites.

Before commencement of earth-disturbing activities within 100 feet of the most up to date identified boundary for Sites D2-D4 and the prehistoric component of Site D1, these sites should be flagged and/or temporarily fenced for avoidance. The boundaries of Sites D2-D4 and the prehistoric component of Site D1 are incompletely defined and archaeological monitoring of mechanical treatment activities is required to ensure no impacts occur to contributing elements to the overall significance of the archaeological sites. No archaeological monitoring or special project constraints are recommended within the road prism. However, outside the road prism, site areas should be avoided, and these areas should be monitored. The project applicant shall retain a qualified archaeological monitor and/or Native American consultant to perform all archaeological monitoring.

Level of Impact after Implementation of Mitigation Measures

Implementation of Mitigation Measure CUL-1 would reduce potentially significant impacts to known and currently undiscovered archaeological resources because actions would be taken to avoid, move, record, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations. Therefore, impacts to archaeological resources would be **less than significant with implementation of Mitigation Measure CUL-1.**

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant. There is no evidence identifying sensitivity for paleontological resources in the Region. Tahoe Basin surfaces were created by geologic uplift and have deep granitic bedrock and shallow surface soils. Because the Region is not underlain with sedimentary rock formations (which are most likely to contain fossils), it is not likely to contain major paleontological resources. Ground-disturbing activities, such as

grading and excavation, are activities that can result in the disturbance of paleontological resources in areas where they may be present. However, this project does not include grading or excavation activities, only mechanical forest thinning operations, hauling, and chipping; therefore, because the area has a low likelihood to contain paleontological resources, this impact would be less than significant.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than significant. Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project area. There is a possibility that unmarked, previously unknown Native American or other graves could be present within the project area and that project-related activities could uncover previously unknown human remains. However, project activities do not contain any ground-disturbing activities, only mechanical forest thinning operations, hauling, and chipping. Therefore, the project has low potential to uncover previously unknown remains.

As described in Section 2.3.6, "Resource Protection Measures," the project includes resource protection measures intended to minimize impacts to human remains that may be encountered during treatment activities. For the discovery of human remains, the resource protection measure states:

> If human remains are discovered during treatment activities, work shall be suspended in the area of the remains, and the contractor or cultural resource monitor shall notify the Placer County coroner and the Native American Heritage Commission (NAHC) immediately, according to Section 5097.98 of the State PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the cultural resource monitor, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to prevent disturbance of additional human interments.

For these reasons, this impact would be less than significant.

CUMULATIVE IMPACTS

The cumulative context for the cultural resources analysis considers a broad regional system of which the resources are a part. The cumulative context for historical resources is the Tahoe Basin where common patterns of historic-era settlement have occurred over roughly the past two centuries. The cumulative context for archaeological resources is the Truckee-Tahoe Basin portion of the Washoe territory. Based on previous cultural resource surveys and research, the Truckee-Tahoe Basin has been inhabited by prehistoric and historic people for thousands of years. Because all significant cultural resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site extend beyond the site boundaries. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. Because the proposed project's impacts would be less than significant through implementation of RPMs identified for this project, the proposed project would not contribute to a cumulative loss of cultural resources. Thus, the project **would not make a considerable contribution** to a significant cumulative impact.

3.6 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.6.1 Setting

The project area is located within the Lake Tahoe Basin (Basin) in the northern Sierra Nevada, between the Sierra crest to the west and the Carson Range to the east. Faulting and volcanism created the Basin more than 2 million years ago and, as a result, the basin contains granitic, metamorphic, and volcanic rock. In the northwestern portion of the Basin, the underlying granitic basement rocks are overlain by more recent volcanic rocks. The surface geology of the project area is composed of volcanic flows and debris from the Pleistocene and Pliocene (11,000 to 5.3 million years ago) (Saucedo 2005). The topography of the project area is characteristic of the mountainous terrain that forms the slopes of the Basin.

The project area is located in a seismically active area of the western United States and faulting played a key role in the formation of Lake Tahoe. There are three active faults or fault zones within the Basin: The West Tahoe-Dollar Point Fault (the longest at 45 km long); the Stateline-North Tahoe Fault; and the Incline Village Fault (Brothers et al. 2009). The West Tahoe-Dollar Point fault runs through the project area, the Stateline-North Tahoe Fault is 5.5 miles east of the project area, and the Incline Village Fault is 7.3 miles east of the

project area. Recent studies indicate that all three of these faults have experienced large rupture events within recent geologic time (Dingler 2007; Seitz and Kent 2004). Of the three faults, the West Tahoe-Dollar Point Fault has the fastest slip rate (the rate at which two faults pass each other or build tension) and could generate an earthquake with a magnitude greater than 7 (Brothers et al. 2009). Similarly, the height of scarps along the Incline Village fault show that this fault has experienced several magnitude 7 events and that it last ruptured approximately 575 years ago. (Schweickert et al. 2000; Seitz et al. 2005). The nearest mapped Alquist-Piolo Earthquake Fault Zone is located along the Genoa Fault, approximately 30 miles south-east of the project area (CGS 2010).

The soils of the project area are predominately coarse textured and well drained with moderate to low runoff potential. Overall, the erosion potential of the project area soils is slight (NRCS 2007) which indicates that some erosion control measures may be needed. Because erosion potential is greatly influenced by slope, portions of the project area with slopes greater than 30 percent are considered to have severe erosion potential, meaning that ground disturbance without implementation of erosion control measures should be expected to result in erosion. The potential for expansive soils is low for all portions of the project area. Table 3.6-1 provides a summary of soil map units and relevant soil characteristics for the project area.

Table 3.6-1 Soil Properties

Map Unit Symbol	Map Unit Name	Percent of Unit	Soil Expansion Potential	Erosion Hazard
7151	Jorge very cobbly fine sandy loam, 5 to 15 percent, rubbly	25	Low	Slight
7221	Tahoma very cobbly sandy loam, 2 to 15 percent slopes, very stony	27	Low	Slight
7222	Tahoma-Jorge complex, 2 to 15 percent slopes	48	Low	Slight

Source: NRCS 2007

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking (CGS 2008: pp. 35-37). Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability. The potential for liquefaction, or subsidence and lateral spreading is generally low for the project area because of the relatively dense granular and stiff clay texture of the soils.

The project area includes primality high capability lands in land capability districts 5 and 6, as classified by TRPA's Bailey land capability system. Areas of Stream Environment Zone (SEZ) exist along Dollar Creek at the northeastern boundary of the project area, and along other drainages (Exhibit 3.6-1).

Exhibit 3.6-1

Land Capability Districts

ASCENT ENVIRONMENTAL

3.6.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to geologic resources. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- Compliance with all applicable requirements and other provisions of Category 1 within the 2014 Timber Waiver issued by the Lahontan Regional Water Quality Control Board (Lahontan), (see Appendix A for Section D (Category 1) of the Waiver). Such measures include but are not limited to: use of temporary water quality best management practices (BMPs) to prevent sediment or other contaminants from flowing into surface waters, regular monitoring of equipment to prevent leaks or spills, maintenance of an emergency spill kit on site during all operations to contain fuel or other spilled materials, and prohibitions against operating equipment on soils that are saturated.

- Riparian areas and waterbody buffer zones (WBBZs) within treatment units shall be flagged consistent with 2014 Timber Waiver requirements prior to treatment activities and avoided during treatment activities in the project area.

- Skid trails created as part of the forestry operations shall be covered with mulch from mastication operations and, if requested by Conservancy staff, re-contoured to promote natural drainage, de-compacted, and/or reseeded. The Conservancy or forestry contractor would conduct minor trail rehabilitation activities, as needed, to maintain public use of existing trails.

- Prior to implementation of project operations, the Conservancy, in coordination with the forestry contractor, shall prepare a project area map that identifies boundaries of treatment units, access routes, landing areas, known invasive species infestations, and locations of known resources to be avoided (e.g., wildlife or habitat resources, stream courses, meadows, and wetlands).

- The forestry contractor shall implement erosion protection measures, which include measures on roads or skid trails that are created or modified by the project, to minimize soil erosion, control runoff, and prevent debris from entering stream courses. The types and intensity of erosion control measures shall be appropriate to the ground and weather conditions. Equipment shall not be operated during rain or on saturated ground. Erosion control measures and drainage features shall be regularly inspected, including prior to periods of accelerated runoff, and maintained to ensure they are in working order. Contractors shall construct temporary erosion control measures before operations cease annually.

- Wheeled or track-laying equipment (e.g., 2007 Valmet 445 (harvester), 2015 John Deere 2154 (loader), 2006 John Deere 200CLC (masticator), 2011 Peterson 4310 (chipper)) shall not be operated in stream courses or SEZ areas, except on approved designated Class III watercourse crossings during dry surface conditions.

- The forestry contractor shall conduct operations in accordance with logging practices set forth by the partner agencies, including requirements for felling, bucking, stump heights, limbing, skidding, yarding, rigging, landings, and logging equipment.

- The forestry contractor shall maintain existing improvements, such as access roads and trails used during implementation of the project.

- The forestry contractor shall adhere to all mitigation measures concerning flagged exclusion zones, all known cultural sites, wetlands, and WBBZs.

- The forestry contractor shall restore areas used for temporary skid trails (that were not existing roads or trails) and landings by achieving an 80 percent ground cover of masticated or chipped material and if needed, decompacting soil and/or restoring natural drainage patterns. In areas where sufficient slash is unavailable to adequately control erosion, the applicant shall identify and approximately map these areas, and detail equally protective mitigation measures in the Timber Waiver application and apply for a Basin Plan prohibition exemption. In developing alternative mitigation measures to driving on a bed of slash where sufficient slash is not available, the applicant shall, at a minimum, create waterbreaks on these CTL equipment trails in accordance with the 2013 California FPRs, CCR, title 14, section 914.6. Waterbreaks or protective mitigation measures shall be either created by hand work or using the CTL equipment as it is backing out of the unit.

- The forestry contractor shall repair and rehabilitate any incidental damage caused by this project to existing trails and roads, such as if they are used as a skid trail or are within an active treatment area, to ensure that that existing roads and trails are open and free of masticated material or other debris after the project area is reopened for public use.

- Materials removed from the project area shall follow a haul route that is the shortest, most economical haul route available between the treatment area and biomass energy facility or sawmill.

- No operations, including hauling, skidding, landing and skid trail construction, or other soil disturbing activities shall occur between October 15 – May 1 of each year, or when saturated soils exist (or whatever the terminology is in the Timber Waiver for saturated soils). Saturated soil conditions (are defined as site conditions are sufficiently wet that timber operations displace soils in yarding or mechanical site preparation areas or displace road and landing surface materials in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters or in downstream Class I, II, III, or IV waters that is visible or would violate applicable water quality requirements.

3.6.3 Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

Less than significant. The project area is located within a seismically active area. A portion of the West Tahoe-Dollar Point fault runs through the project area and the project is within 7 miles of two other active faults. However, the proposed project would not alter the use of the project area or result in the construction of structures that could be damaged by fault rupture. The project area would continue to be managed as open space and used for undeveloped recreation. This impact would be less than significant.

ii) Strong seismic ground shaking?

Less than significant. As indicated above, the project is located in an area that could experience strong seismic shaking. However, the proposed project would not include the construction of habitable structures and would not alter land use or public access to the project area. Therefore, impacts related to strong seismic shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than significant. Although the proposed project is in a seismically active location, liquefaction and other seismic-related ground failure events primarily affect structures. Because there are currently no structures on-site, and the proposed project would not result in construction of any new structures, impacts related to liquefaction would be less than significant.

iv) Landslides?

Less than significant. The proposed project is located in flat or gently sloping terrain on well drained soils that are not susceptible to landslides. Therefore, impacts related to landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant. Traffic from the heavy equipment used to remove forest biomass and the general thinning activities would disturb the soil surface and could lead to increased erosion or loss of topsoil within the project area. The timber removal component of the project would be completed using cut-to-length and/or whole-tree-yarding harvest methods. The only removal methods approved in land capability districts 1a, 1c, and 2 are aerial removal, hand carry, and use of existing roads. The project would only include treatments in land capability classes 5 and 6 as shown on Exhibit 3.6-1.

With cut-to-length methods, the harvester limbs and bucks the tree into marketable logs directly at the stump. Through this process the tree limbs and slash are scattered throughout the treatment area creating a "slash mat" that protects the forest floor, reducing erosion and soil compaction. A forwarder would then collect the logs and tree tops and bring them to the landing area. The harvester and forwarder used in cut-to-length systems are relatively light weight machines with larger rubber tires.

In cut-to-length treatment units, the lateral branches of the trees would remain near their respective stumps as ground cover. A mobile masticator (typically an excavator fitted with a specialized mastication drum) would move through each unit outside of the landing areas to masticate limbs and some shrubs. Soil would be disturbed as the excavator makes tight turns to maneuver between trees and the masticating drum occasionally churns soil.

No work would occur in SEZ areas (or any applicable WBBZs). Crossings of Class III watercourses (ephemeral streams) would only be used when conditions are dry enough support use without creating soil disturbance. No crossings of Class I or Class II (perennial or intermittent) waterways would occur.

Although fuel reduction activities would create soil disturbance, the potential risk of accelerated surface erosion would be low. As described above, the NRCS erosion hazard rating for the soils within the project area is slight to moderate. The NRCS erosion hazard rating assumes that 50 to 75 percent of the soil surface has been exposed and disturbed by some activity. The project addresses the risk of the most ground disturbing activities by restricting treatments and ground disturbance to shallow slopes (less than 30 percent slope), limiting disturbance to higher capability land capability districts, limiting landings areas of >5 percent slope, and by maintaining protective soil groundcover. Retention of natural groundcover and masticated slash would protect the soil surface against disturbance and erosive overland flow. In addition, the following RPMs would be implemented to protect against soil disturbance:

The proposed project would include activities that could result in ground disturbance; however, the soils within the project area have a low risk of erosion. Because the project would limit ground disturbing activities to areas with less than 30 percent slopes and includes a comprehensive suite of resource protection measures to protect soil resources and prevent erosion, the potential for the project to result in substantial soil erosion or loss of topsoil would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant. Generally, impacts associated with unstable soils relate to potential damage to structures. The proposed project would remove overgrown vegetation to restore forest health, but would not develop any new permanent structures. Therefore, no structures would be affected by unstable soils. Landslide-related hazards associated with proposed public access are addressed under "a-iv" above. Project-related impacts related to unstable soils would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

Less than significant. Similar to the discussion under "c" above, substantial risk to life or property would generally occur to habitable buildings, which could experience compromised structural integrity because of expansive soils. The proposed project is not located in an area of expansive soils and would not create buildings or structures that could be affected by soil expansion. Therefore, similar to "c" above, the impact would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project would not involve the installation of any septic system or other form of waste water disposal. No impact would result.

CUMULATIVE IMPACTS

The Lake Tahoe Basin is a seismically active area with several large, active faults. Development in seismically active areas requires specialized building techniques and awareness of fault lines to avoid placing people and property at risk. While this is a concern for development projects within the cumulative effects area, neither the proposed project or any of the cumulative projects listed in Table 3.18-1 include the construction of habitable or non-habitable structures that could be affected by seismic activity. Therefore, the proposed project would have no cumulative impact relative to fault rupture, strong seismic shaking, or seismic-related ground failure.

Landslides occur when the weight of soil materials exceeds the strength of soil bonds. Loosely bonded sandy soils or soils dominated by silts and clays can be prone to landslide. In these soils intense or prolonged rainfall or rapid snowmelt can fill pore spaces in the soil matrix, adding weight while at the same time loosening soil bonds. Landslides can also be triggered by earthquakes or slope undercutting by erosion (USGS 2004). Additionally, areas where landslide have occurred in the past are prone to future landslides. In general, the soils of mountain slopes in the northwestern portion of the Tahoe Basin are coarse textured and well drained are not prone to landslides (NRCS 2007). Geologic evidence of a few Holocene and Pleistocene age landslides occur east of Martis Peak, along the lake shore at Dollar Point, and in the Truckee River canyon (Saucedo 2005). Bathymetric data from within Lake Tahoe shows evidence of several underwater landslides, as well as large "megaslides" such as the slide which created McKinney Bay (Schweickert et al. 2000). It is likely that the majority of these slides (occurring over the past 5.3 million years) were triggered by earthquakes and seismic activity (Schweikert et al. 2000). The proposed project and the cumulative fuels reduction projects listed in Table 3.18-1 would reduce the overgrowth of trees in treatment areas and subsequently increase the available groundwater in localized areas. However, these treatments would return soils to pre-fire suppression conditions and would not affect soil drainage or increase the potential for landslides in these areas. Conversely, a catastrophic wildfire could significantly decrease soil strength and increase landslide potential. Therefore, the implementation of the proposed project would have a less-than significant cumulative impact relative to risk to people or property from landslides.

The Tahoe Basin contains steep slopes and areas of highly erosive soils. Ground disturbance in these areas has the potential to result in adverse effects on structures and human life as a result of erosion hazard and slope stability, both of which are primarily local, site specific impacts. The proposed project and the related projects listed in Table 3.18-1 would be required to comply with the erosion control conditions of the land managing agency (under the MOU between the Conservancy and TRPA) and the protective provisions of the 2014 Timber Waiver. This would include a suite of resource protection measures tailored to the needs of each treatment site, such as limitations on harvesting activities depending on slope and proximity to water courses and sensitive habitats, erosion control practices for implementation during harvest, and restoration of disturbed sites. Therefore, the proposed project and the related project listed in Table 3.18-1 would result in less-than-significant cumulative effects related to soil erosion or loss of topsoil.

Geotechnical impacts are site specific rather that cumulative in nature. For example, expansive soils in one project area may be relevant to that project, but project activities would not make adjacent parcel more or less susceptible to the effects of expansive soils. Additionally, the proposed project and the related projects in Table 3.18-1 do not involve the construction of buildings or other structures whose integrity relies on the underlying geology. Therefore, the propose project and the related projects would have no cumulative impact relative to unstable geology or expansive soils.

As described above, the project **would not make a considerable contribution** to a significant cumulative impact related to Geology and Soils.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
c) Reduce the ability of the project site to adapt to the effects of climate change?	☐	☐	☒	☐

3.7.1 Setting

SCIENTIFIC BASIS OF GHG AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's 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. This 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 carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of GHGs in excess of natural ambient concentrations are believed 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 (Intergovernmental Panel on Climate Change [IPCC] 2014:3, 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 pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs that ultimately result in climate change is not precisely known; but is enormous; no single project alone would measurably contribute to an incremental change in the global average

temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

GHG emissions are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (California Air Resources Board [CARB] 2014a).

In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2014a). Emissions of CO_2 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. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

REGULATORY SETTING

Supreme Court Ruling of CO_2 as a Pollutant

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the CAA and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

Clean Power Plan

The Clean Power Plan was unveiled by President Obama on August 3, 2015. The plan aims to reduce carbon dioxide emissions from electrical power generation by 32 percent within twenty-five years relative to 2005 levels. The plan aims to reduce carbon dioxide emissions from electrical power generation by 32 percent below 2005 levels within twenty-five years. President Donald Trump signed an executive order on March 28, 2017 mandating the EPA to review the plan. The review has not been completed and made public at the time of writing this document.

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emission targets for the state. Specifically, statewide emissions are to be reduced to 2000 levels by 2010, reduced to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

This executive order was the subject of a California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (SANDAG) (November 24, 2014) 231 Cal.App.4th 1056, which was reviewed by the California Supreme Court in January 2017. The Supreme Court decided a singular question in the case, which was released on July 13, 2017. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal."

In addition to concluding that an EIR need not use this executive order's goal for determining significance, the Court described several principles relevant to CEQA review of GHG impacts, including: (1) EIRs should "reasonably evaluate" the "long-range GHG emission impacts for the year 2050;" (2) the 2050 target is "grounded in sound science" in that it is "based on the scientifically supported level of emissions reduction

needed to avoid significant disruption of the climate;" (3) in the case of the SANDAG plan, the increase in long-range GHG emissions by 2050, which would be substantially greater than 2010 levels, was appropriately determined to be significant and unavoidable; (4) the reasoning that a project's role in achieving a long-range emission reduction target is "likely small" is not valid for rejecting a target; and (5) "as more and better data become available," analysis of proposed plan impacts will likely improve, such that "CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." The Court also ruled that "an EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." The Court also recognized that the 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emission 80 percent below 1990 levels by the year 2050." Senate Bill (SB) 32 has since defined the 2030 goal in statute (discussed below).

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that (a) the statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The [California Air Resources Board (CARB)] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]. For the purposes, of AB 32 and other legislation in California GHGs are expressed in carbon dioxide-equivalent (CO_2e). CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Executive Order B-30-15

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 sets the next interim step in the State's continuing efforts to pursue the long-term target expressed under Executive Order S-3-05 to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Climate Change Scoping Plan and Updates

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan, which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG

emissions to 1990 levels by 2020. In May 2014, CARB released and subsequently adopted the First Update to the Climate Change Scoping Plan to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2000 and 2012 (CARB 2014a). After releasing multiple versions of proposed updates in 2017, CARB adopted the next version titled California's 2017 Climate Change Scoping Plan (2017 Scoping Plan) in December of that same year (CARB 2017). The 2017 Scoping Plan indicates that California is on track to achieve the 2020 statewide GHG target mandated by AB 32 of 2006 (CARB 2017:9). It also lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector.

The 2017 Scoping Plan also identifies how GHGs associated with proposed projects could be evaluated under CEQA (CARB 2017:101-102). Specifically, it states that achieving "no net increase" in GHG emissions is an appropriate overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. CARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions to zero and that an increase in GHG emissions due to a project may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change.

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011 and Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

Assembly Bill 1504 of 2010, Forest Resources: Carbon Sequestration.

AB 1504 requires the Board of Forestry and Fire Protection to adopt district forest practice rules and regulations in accordance with specified policies to, among other things, assure the continuous growing and harvesting of commercial forest tree species (CARB 2017:4 to 5). AB 1504 also requires the Board of Forestry and Fire Protection to ensure that its rules and regulations that govern the harvesting of commercial forest tree species consider the capacity of forest resources to sequester CO_2 emissions sufficient to meet or exceed the sequestration target of 5 MMTCO2e/year net annually, as established in the first Climate Change Scoping Plan.

California Forest Carbon Plan

The California Forest Carbon Plan aims to improve the health and resilience of California's forests, increase their carbon storage potential, and minimize their atmospheric emissions of GHG. While the Forest Carbon Plan primarily targets carbon storage and emissions, it also emphasizes improving and safeguarding interrelated ecosystem services (co-benefits), as well as social and economic considerations (Forest Climate Action Team 2017:7, 8). The Forest Carbon Plan was developed by the Forest Climate Action Team, which includes CAL FIRE, the California Natural Resources Agency, and the California Environmental Protection Agency.

Lake Tahoe Sustainability Collaborative

The Lake Tahoe Sustainability Collaborative, of which TRPA is a part, prepared the *Sustainability Action Plan: A Sustainability Action Toolkit for Lake Tahoe*. This plan is a toolkit to engage local governments, regional agencies, residents, businesses, schools, and visitors to implement sustainability measures. The plan

represents an integrated approach to reducing GHG emissions and striving toward zero-impact in all aspects of sustainability. Climate change adaptation and resiliency is also a major component of the plan. Among the sustainability actions identified in the plan is to promote forest health and reduce fuel to minimize loss because of wildfires (Lake Tahoe Sustainability Communities Program 2013:4-2). The plan also recommends exploring biomass conversion to electricity and fuel (Lake Tahoe Sustainability Communities Program 2013:2-4). The plan is not formally adopted by TRPA or any other agency involved in the collaborative, however.

Placer County Air Pollution Control District Thresholds of Significance

PCAPCD adopted a mass emission threshold of 10,000 metric tons of CO_2e per year (MT CO_2e/year) for the construction phase of projects as well as for stationary sources of emissions (PCAPCD 2017:23, 24). PCAPCD adopted efficiency-based thresholds for analyzing land use development project such as residential and commercial land uses. PCAPCD considers 10,000 MT CO_2e/year to be the level at which the construction phase of a project would have a cumulatively considerable contribution to global climate change (PCAPCD 2017:24).

While the project would involve the one-time use of GHG-emitting, off-road equipment similar to construction equipment, it would also result in the long-term effect of increasing carbon sequestration. Therefore, this analysis focuses on the long-term net change in GHGs that would result from implementation of the proposed project and discusses whether the project would be consistent with the Scoping Plan.

3.7.2 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant. The proposed project would result in changes to the levels of carbon sequestered by the treated forest, and new emissions generated by equipment and vehicles used for the thinning and removal of forest material during its estimated 20-year management cycle. The project's net effect on carbon stocks is the emissions associated with thinning and hauling of forest material subtracted from the increase in carbon sequestration.

The carbon sequestration effects of the project, in comparison to a scenario in which no thinning treatment would occur, were estimated by USFS staff using the Forest Vegetation Simulator (FVS) and its Fire & Fuels Extension (USFS 2015a). The FVS is a forest growth and yield model developed by USFS staff and is used by natural resource managers and researchers. FVS is calibrated for specific geographic areas and uses a host of simulation models to forecast forest composition and structure. The Fire and Fuels Extension is an add-on module to the FVS that accounts for live tree, dead tree, down dead wood and forest floor biomass information, and can be used to estimate changes in carbon stocks over time (USFS 2015b:201). The modeling accounts for that fact that some biomass is masticated and spread along the forest floor to alter the arrangement of surface fuels to reduce risk of fire reaching the canopy. The modeling also accounts for the carbon contained in merchantable logs removed from the forest, including whether it remains sequestered in wood products and eventually ends up in a landfill with or without energy capture, or remains stored in the landfill. Most of the increase in carbon sequestration is because of the increased resiliency of the forest stand to catastrophic wildfire that would consume more carbon-based forest material than a less intense wildfire. The modeling performed for this analysis likely underestimates the increase in carbon sequestration, because it does not account for the "shadow effect," which is the phenomenon that treating one forest stand to be fire resilient also reduces the likelihood of fire in neighboring, untreated stands of forest.

GHG emissions generated by off-road forest thinning equipment were estimated using the construction module of the CalEEMod Version 2016.3.1 computer program (CAPCOA 2016). Modeling was based on detailed equipment information provided by a local thinning contractor (Holland, pers. comm. 2015) and default values in CalEEMod that are based on the project's location and land use types.

GHG emissions from hauling of merchantable logs to the mill in Quincy, the hauling of chipped biomass to the biomass power facility in Lincoln, and worker commute trips were estimated using the California Emissions Factor 2014 model, Version 1.0.7 (EMFAC2014) (CARB 2014c).

Table 3.7-1 summaries the level of GHG emissions and sequestration estimated for each of these project activities. Refer to Appendix B for a detailed description of all calculations, model runs, and assumptions used to support the modeling.

Table 3.7-1 Summary of Greenhouse Gas Emissions and Carbon Sequestration over a 20-Year Management Cycle

	value	units
Forest Vegetation Management Effects[1]		
Reduction in wildfire emissions due to forest treatment	21.4	MT CO_2e/acre
Increase in carbon sequestration from accelerated growth due to forest treatment	17.4	MT CO_2e/acre
Net gain in carbon sequestration	38.8	MT CO_2e/acre
Forest Treatment Activities		
Thinning equipment[5]	4.2	MT CO_2e/day
Truck hauling of merchantable logs[6, 7]	1.3	MT CO_2e/day
Truck hauling of chipped biomass[6, 8]	2.5	MT CO_2e/day
Worker commute trips[6]	0.1	MT CO_2e/day
Subtotal	8.1	MT CO_2e/day
Daily area treated, average	5.0	acre/day
GHGs per area treated	1.6	MT CO_2e/acre
Net Change in CO_2e[9] Sequestration	**37.2**	MT CO_2e/acre

Notes: MT CO_2e/day = metric tons of carbon dioxide-equivalent per day; MT CO_2e/acre = metric tons of carbon dioxide-equivalent per acre

1 Changes in sequestration levels relative to a no-treatment scenario were modeled by USFS staff using the Forest Vegetation Simulator, Version 1494 (USFS 2015). Modeling details are provided in Appendix E.

2 GHG emissions from off-road construction equipment, haul trucks, and worker trips were estimated using the construction module in the CalEEMod Version 2013.2 computer program (SCAQMD 2013).

3 GHG emissions from the re-grading of forest roads were estimated using the Road Construction Emissions Model, Version 7.1.5.1 (SMAQMD 2013).

5 GHG emissions from thinning equipment were estimated using the construction module in CalEEMod Version 2013.2 computer program (SCAQMD 2013) with detailed equipment data provided by a local thinning contractor (Holland, pers. comm. 2015).

6 GHG emissions from the truck hauling of merchantable logs and chipped biomass and worker commute trips were estimated using EMFAC2014, Version 1.0.7 (CARB 2014c).

7 The FVS modeling accounts for the fact that a portion of the sequestered carbon in merchantable logs will remain stored in wood products made from those logs (USFS 2015b:140).

8 The chipped biomass that is hauled for the treated forest stand would be consumed by a biomass power facility, either by combustion or gasification; thereby, contributing to the renewable energy standards established by SB X1-2 of 2011 and SB 350 of 2015. Also, not accounted for is the GHG reduction associated with the displacement of fossil fuel-generated electricity.

9 The net effect on carbon stocks is the sum of the increase in carbon sequestration, represented by a negative value, and the emissions associated with thinning and hauling of forest material.

Source: Sequestration estimates provided by the USFS in 2015. GHG emission estimates modeled by Ascent Environmental in 2015.

As shown in Table 3.7-1, the proposed project would result in a net increase in carbon sequestration of approximately 37.2 MT CO_2e/acre. Thus, thinning of the proposed 151 acres within the project area would result in a total increase of sequestered carbon equivalent to 5,613 MT CO_2e during the 20-year management cycle. This means the project would be net-carbon beneficial.

While the project would provide biomass materials for energy production, the project would not approve any new biomass facilities and the material provided by this 151-acre fuel reduction project would constitute a very small percent of the annual biomass used by a biomass energy facility. Thus, this project would not cause the operation of a biomass energy facility, and if this project did not occur, existing biomass energy

facilities would continue to operate with biomass provided by other sources. However, to provide a conservative accounting of GHG emissions, the anticipated emissions from biomass energy production can be considered as part of the project emissions.

That exact biomass facility that would receive material from this project would be determined by the forestry contractor during project implementation, based on market demand and logistical considerations. As described in the project description in Section 2, multiple possible biomass facilities could be used. These facilities implement different technologies with different rates of GHG emissions. To be conservative, the GHG emission estimates here reflect on-site burning of all materials, which tends to produce more GHG emissions than biomass energy generation, even when typical hauling emissions are included (Springsteen et al. 2011). The Board of Forestry modeled emissions from typical burning scenarios in a Sierra Nevada Mixed Conifer forest, which considered emissions from combustion of vegetation, associated equipment, and worker trips. This analysis provided estimated emissions of approximately 20.22 MT CO2e per acre (Board of Forestry 2015, Appendix H). Even if this additional 20.22 MT CO2e per acre from open burning were contributed to the project (which is greater than the emissions from biomass energy production), the project would still result in a net increase in sequestered carbon of 16.98 MT CO2e per acre or 2,563.98 MT CO2e during the 20-year management cycle. This means the project would be net-carbon beneficial even if a conservative estimate of emissions from biomass energy production were attributed to the project.

Because the project would result in a net increase in stored carbon over time, it would not generate GHGs, either directly or indirectly, that may have a significant impact on the environment. Thus, this would be a less-than-significant impact.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant. As explained in the analysis under item b, the proposed project would result in an increase in carbon sequestration by the affected forest stand by reducing the risk of catastrophic wildfire and be net carbon beneficial. This would be consistent with the Scoping Plan, which called for California's forest sector is to maintain the current level of sequestration through sustainable management practices (CARB 2011:64; CARB 2014b:12, 70 to 76; CARB 2017:19, 107 to 109, 113). More specifically, the project would be consistent with the AB 1504, which requires the Board of Forestry and Fire Protection to ensure that its rules and regulations that govern the harvesting of commercial forest tree species consider the capacity of forest resources to sequester CO_2 emissions. Moreover, the project would be consistent with the California Forest Carbon Plan, which aims to improve the health and resilience of California's forests, increase their carbon storage potential, and minimize their atmospheric emissions of GHG (Forest Climate Action Team 2017:7, 8). Therefore, there would be a less-than-significant impact.

c) Reduce the ability of the project site to adapt to the effects of climate change?

Less than significant. As discussed previously in this section, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is a strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- increased average temperatures;
- modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- changes in the timing and amount of runoff;
- reduced water supply;
- deterioration of water quality; and
- elevated sea level.

Many of these changes may translate into a variety of issues and concerns that may affect the project area, including but not limited to:

- increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures;
- increased stormwater runoff associated with changes to precipitation patterns and snowmelt patterns; and
- increased risk of avalanches associated with changes to precipitation and snowmelt patterns.

The FVS modeling indicates that the thinning of the forest stand would reduce the risk of catastrophic wildfire. By improving age and species diversity in the forest stand the project would also reduce the susceptibility to insect and disease outbreaks. The project includes a specific RPM that requires invasive species management precautions during treatment and monitoring activity, such as washing off-road equipment before entering a treatment site. Thus, the project would make the stand more resilient to wildfire and increase forest health.

The project also includes some resource protection measures that reduce the risk from increased stormwater runoff and changes to precipitation patterns and snowmelt patterns. For instance, project-created access routes throughout the treatment site would be covered with mulch from mastication operations and, if needed, would be re-contoured to promote natural drainage, and/or de-compacted. Also, erosion protection measures would be implemented to minimize soil erosion, control runoff, and prevent debris from entering stream courses. These erosion control measures and drainage features would be regularly inspected, including prior to periods of accelerated runoff, and maintained to ensure they are in working order. Additionally, permanent erosion control measures would be maintained by the Conservancy or forestry contractor until they are stabilized for up to one year after their construction.

As discussed above, inclusion of the features in the design and operation of the project would reduce the extent and severity of climate change-related impacts to the affected forest stand by providing methods for adapting to these changes. These design features would reduce the extent and severity of climate change-related impacts to the project by reducing wildfire and avalanche risk and addressing stormwater runoff concerns. For these reasons, this impact would be less than significant.

CUMULATIVE IMPACTS

The proposed project would result in a net reduction in GHG emissions. Therefore, its contribution to global climate change would not be cumulatively considerable.

3.8 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

3.8.1 Setting

HAZARDOUS MATERIALS

The project area is located on Conservancy-owned land within the Lake Tahoe Basin. Project actions include thinning dense understory trees and removal of other woody vegetation to reduce fire fuels. Motorized vehicles, heavy equipment, small motorized equipment, such as chainsaws and hand tools, would be used to implement the project. The types of materials used for treatment activities that could be hazardous include fluids such as motor vehicle and mechanical equipment fuels, oils, and other lubricants.

There are no hazardous materials cleanup sites in or near the project area (DTSC 2017, SWRCB 2017).

SCHOOLS

Schools in the project area include Tahoe Lake Elementary School, North Tahoe High School, and North Tahoe School. North Tahoe High School and North Tahoe School are located less than 0.1-mile southeast of the project area.

AIRPORTS

The Truckee Tahoe Airport is the nearest airport and is located approximately six miles north of the project area. There are no private airstrips in the vicinity of the project area.

EMERGENCY RESPONSE AND EVACUATION PLANS

The Placer County Office of Emergency Services (OES) implements the Placer Operational Area East Side Emergency Evacuation Plan (Placer County 2015). This plan identifies SRs 28, 89, and 267 as the major evacuation routes in the project vicinity. When necessary, surface streets would also be designated for evacuees and for emergency vehicle traffic. A number of emergency operations centers and evacuation centers are located in Kings Beach, Tahoe City, and Truckee. The nearby North Tahoe High School and North Tahoe School are identified as evacuation centers.

WILDLAND FIRE HAZARDS

The Lake Tahoe Region is considered a "fire environment," because of the climate, steep topography, and high level of available fuel. The threat of catastrophic fire is a public safety concern. Prior to fire suppression policies and extensive logging in the region, natural fire regimes would have included frequent, low-intensity burns occurring at intervals of approximately five to 18 years, which would typically have thinned forest stands and removed hazardous ladder fuels. Fire suppression policies have allowed the development of vegetation complexes that are more susceptible to high-intensity burning (e.g., crown fires).

CAL FIRE has mapped Fire Hazard Severity Zones (FHSZs) for the entire state. FHSZs are based on an evaluation of fuels, fire history, terrain, housing density, and occurrence of severe fire weather and are intended to identify areas where urban fires could result in catastrophic losses. FHSZs are categorized as: Moderate, High, and Very High. According to CAL FIRE's Fire Resource Assessment Program FHSZ Geographic Information System data, the project area is located within a Very High FHSZ (CAL FIRE 2007). The Very High FHSZ is defined as wildland areas that support high to extreme fire behavior or developed/urban areas typically with at least 70 percent vegetation density.

Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy

The purpose of the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy* (Fuel Reduction Strategy) is to increase community protection from wildfire, identify potential fuel reduction treatments, and facilitate communication and cooperation among those responsible for project implementation. In 2007, the Region's original Fuel Reduction Strategy combined all existing fire plans that had been developed within the Tahoe Basin, including the 2004 Community Wildfire Protection Plan for the California Portion of the Lake Tahoe Basin. Sixteen local, state, and federal agencies collaboratively plan and implement fuels reduction treatments to protect Lake Tahoe's California and Nevada communities and environment. The Fuels Strategy was updated in August 2014 and its conservation objectives identify fire threat mitigation as a high priority. The USFS, Lake Tahoe Basin Management (LTBMU) is the agency with primary responsibility for implementation of the Fuel Reduction Strategy; however, individual land owners and various agencies (e.g., CAL FIRE and Conservancy) are responsible for aspects of its implementation. The Fuel Reduction Strategy facilitates the strategic decisions that must be made by land management, fire, and regulatory agencies over the next 10 years to reduce the probability of a catastrophic fire in the Basin. The proposed project would

help achieve one of the broad goals identified by the Fuel Reduction Strategy, which is to restore and maintain fire resilient landscapes.

Lake Tahoe Basin Community Wildfire Protection Plan (2014)

The Lake Tahoe Basin Community Wildfire Protection Plan (CWPP) is created by the local jurisdictions to identify and prioritize areas for hazardous fuel reduction treatments and recommends the types and method of treatment and recommends measures to reduce structural ignitability throughout at-risk communities. Similar to the Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy, it is a goal of the CWPP to restore and maintain fire-resilient landscapes. Additionally, the CWPP establishes the priority of fuels reduction projects. The project area is identified in the CWPP as a planned treatment area. Consequently, the proposed project would help implement the CWPP (TFFT 2015).

REGULATORY SETTING

Management of Hazardous Materials

Federal laws require planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and if such materials are accidentally released, to prevent or mitigate injury to health or the environment. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials.

Applicable federal regulations pertaining to hazardous materials are primarily contained in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101.

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services (Cal OES). The federal law, SARA Title III or EPCRA, described above, encourages and supports emergency planning efforts at the state and local levels and to provide local governments and the public with information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities.

If a contractor uses or plans to use hazardous materials at levels that reach applicable state (Chapter 6.95 of the California Health and Safety Code) and/or federal thresholds, businesses are required to prepare a Hazardous Materials Business Plan, which would include hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. The plan is submitted to the administering agency, in this case the Placer County Environmental Health Division (Certified Unified Program Agency [CUPA]), to implement and enforce.

The California Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency (Cal EPA), has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations.

Transport of Hazardous Materials

The U.S. Department of Transportation regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. is the basic statute regulating transport of hazardous materials in the United States.

The State of California has adopted U.S. Department of Transportation regulations for the movement of hazardous materials originating within the state and passing through the state; state regulations are contained in 26 California Code of Regulations (CCR). State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are the California Highway

Patrol (CHP) and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials.

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Placer County General Plan

The Health and Safety Element of the Placer County General Plan includes a number of goals and policies intended to minimize injury to people and damage to property from hazardous materials use, transport, treatment, and disposal. Specific policies require the county to ensure that projects use, transport, store, and dispose of hazardous materials in compliance with local, state, and federal safety standards (Policies 8.G.1, 8.G.3, 8.G.5, and 8.G.6).

Certified Unified Program Agency

Placer County's Environmental Health Division is the designated CUPA authorized pursuant to Section 25502 of Chapter 6.95 of the California Health and Safety Code for most areas of the county, including within the Tahoe Basin. The Unified Program is a consolidation of state environmental programs into one program under the authority of a CUPA. Agencies participating with the county in the program include Cal EPA, DTSC, Cal OES, Office of State Fire Marshal, and the State Water Resources Control Board. Programs under the Environmental Health Division include, but are not limited to, review of Hazardous Materials Business Plans, the accidental release prevention program, and the hazardous waste generation program.

3.8.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize exposure to hazards and hazardous materials. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- The forestry contractor shall implement temporary traffic safety measures that provide the public with adequate warning of potentially hazardous conditions associated with vehicle access and hauling. These measures shall include posting signs that meet the requirements of Manual on Uniform Traffic section 61.1.6B that warn of logging operations or truck crossings. Such signs shall be removed when no longer required. Prior to treatment activities, the Conservancy shall distribute notices to residences within 300 feet from the edge of the treatment boundary that identify the timing and duration of operations associated with the project. Truck drivers shall be instructed to maintain safe driving speeds and be alert for the presence of pedestrians and children along neighborhood haul routes.

- Treatment activities shall be conducted in compliance with safety requirements for employees. The forestry contractor shall notify the Conservancy of any personal injury accidents or other accident or vandalism of property.

- To protect air, soil, and water quality, project contractors would conduct operations in a sanitary and safe manner. All operating equipment shall be maintained in working order and servicing of equipment shall

not occur in the project area. Storage facilities for oil or oil products shall take measures to prevent any spill of oil or oil products from entering any stream of other waters of the United States or California.

- All equipment used shall be monitored for leaks, and removed from service if necessary to protect water quality.
- All spills shall be immediately contained and spilled materials and/or contaminated soils must be properly disposed.
- An emergency spill kit adequate to contain spills that could result from on-site equipment shall be at the project site at all times of equipment use.
- In the event of a release of hazardous substances on or near the project area, the forestry contractor shall immediately notify the Conservancy representative. All work shall stop on the project and not start again until all required mitigation has been remedied.
- The forestry contractor shall implement a Fire Prevention and Control Plan which would be created by the California Tahoe Conservancy for the prevention and control of fires during operations. Operations would follow fire prevention precautions, including caching of tools and equipment for firefighting at each active landing and regular testing and inspection of fire equipment. These tools shall only be used for firefighting purposes. Contractors, in cooperation with NTFPD and CAL FIRE, would take all reasonable and practicable action to suppress fire resulting from fuels treatment forest thinning operations.

3.8.3 Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant. Implementation of the project could require the use of limited quantities of hazardous materials, such as fuels, oils, lubricants, or other fluids associated with the operation and maintenance of vehicles or mechanical equipment used in fuel reduction activities in the project area. Use of these materials would be temporary and short-term during implementation of the project and, if stored on a treatment site, would be stored within containers designed for safe storage although large quantities of these materials. All hazardous materials would be used, stored, and disposed of in accordance with applicable federal, state, and local laws. However, the transport, use, or disposal of hazardous materials could result in accidents or upset of hazardous materials that could create hazards to the people or the environment. The extent of the hazard would depend in large part on type of material, the volume released, and the mechanism of release (e.g., spill on the ground at the treatment site versus a spill on a road during transport). The forestry contractor would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, as discussed above in Section 3.8.1, "Setting," including Cal/OSHA and DTSC requirements and manufacturer's instructions. Transportation of hazardous materials on project area roadways and haul routes to biomass facilities and sawmills is also regulated by CHP and Caltrans. As described in Section 2.3.6, "Resource Protection Measures," the project includes resource protection measures intended to minimize impacts to resources during treatment activities, which include notification of North Tahoe Fire Protection District, storage requirements for hazardous materials, and servicing equipment would occur off-site (see section 2.3.6).

Additionally, compliance with the 2014 Timber Waiver would also require implementing measures to reduce the potential impacts on the public or environment from the use or disposal of hazardous materials, including:

- All equipment used must be monitored for leaks and removed from service if necessary to protect water quality.

- All spills must be immediately contained and spilled materials and/or contaminated soils must be properly disposed.
- An emergency spill kit adequate to contain spills that could result from on-site equipment must be at the project site at all times of equipment use.

The limited use of hazardous materials during implementation of the project would be typical for mechanical fuel reduction treatments. Additionally, compliance with federal, state, and local regulations and implementation of resource protection measures intended to minimize the risk of a spill or accidental release of hazardous materials during treatment activities in the project area. The impact to the public and the environment from exposure to hazardous materials would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less than significant. As discussed under "a" above, the project would comply with applicable federal, state, and local regulations and would implement RPMs that would minimize the risk of a spill or accidental release of hazardous materials during treatment activities in the project area. This impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than significant. As discussed under Section 3.8.1, the project area is located within one-quarter mile of North Tahoe High School and North Tahoe School. Treatment activities would involve limited use of hazardous materials, such as fuels, oils, and lubricants. As discussed under "a" above, the project would comply with applicable federal, state, and local regulations and would implement RPMs that would minimize the risk of a spill or accidental release of hazardous materials during treatment activities in the project area. Because such laws are established to be protective of human health and the environment, compliance with applicable regulations is sufficient to ensure that any hazardous materials used by the proposed project would not result in adverse effects because of exposure of the public or environment to hazardous materials through the routine use, storage, or transport of hazardous materials or from accidental release or upset. For these reasons, North Tahoe High School and North Tahoe School would not be exposed to adverse effects associated with potential future uses that use, store, or transport hazardous materials. This impact would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data. The project area is not identified on the Cortese list hazardous materials lists; therefore, there would be no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project area is not located within the airport land use plan for the nearest airport, the Truckee Tahoe Airport (Truckee Tahoe Airport Land Use Compatibility Plan, 2004 [draft 2016]). No impact would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project area is not located within two miles of a private airstrip; therefore, implementation of the project would not result in a safety hazard to people residing or working in the area. No impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant. The proposed project would implement forest thinning treatments to thin overstocked forested areas. Biomass and timber would be removed from the project area and hauled to a biomass facility and a sawmill. The project is intended to reduce the potential for catastrophic wildfire. The proposed project would not influence the population of or the long-term number of people using the project area. During implementation of the project, there would be an increase in the number of employee vehicles accessing the project area and the number of trucks hauling biomass and timber from the site. The proposed project would result in a temporary increase in the number of vehicles, which would include up to eight employee vehicles, eight log trucks, and 12 chip vans per day on SR 28, SR 267, SR 89, and other local roads during treatment activities. Employees would arrive in the morning and park at an access point to the project area and leave in the evening. Log trucks and chip vans entering and exiting the project area would be dispersed throughout the day. As discussed in Section 3.16, "Transportation/Traffic," the proposed project would not result in a significant impact on traffic conditions. Large trucks entering and exiting SR 28 near the project area would be slow-moving and could temporarily slow down traffic, but would not interfere with the ability to implement an emergency response plan or emergency evacuation plan.

As described in Section 2.3.6, "Resource Protection Measures," the forestry contractor would place temporary traffic signs on roads adjacent to the project area that provide adequate warning of hazardous or potentially hazardous conditions associated with the treatment operations. Such signs could include messages that convey logging operations are in the vicinity, presence of log trucks, or locations where large trucks are entering the road. Additionally, the project would not result in any physical changes that would interfere with an emergency response plan or emergency evacuation plan. In the event of an emergency, the nearest evacuation centers would be located at the Tahoe City Public Utility District and the Tahoe City Fairway Community Center. If an event occurred that required deployment of the centers, work on the project would cease so as not to interfere with traffic. For these reasons, the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. This would be a less-than-significant impact.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than significant. As described in Section 3.8.1, "Setting," the project area is located within a very high fire hazard zone. The purpose of project treatment activities is to reduce fire fuels and improve forest health within the project area, the project would reduce the potential for people and structures to be exposed to wildfire. Wildfire risk represents an extreme hazard in the Lake Tahoe Basin, and this portion of Placer County, served by the North Tahoe Fire Protection District (NTFPD), is no exception. Structural ignitability factors in all of NTFPD's fourteen unincorporated communities have been rated as "high" or "extreme" by the Community Wildfire Protection Plan (P251 of the California Portion of the Tahoe Basin).

The forests around Lake Tahoe's urban communities experience seven fire ignitions per 1,000 acres annually. During a typical fire season there are over fifty fire ignitions in the Tahoe Basin, primarily human-caused. The region's overall fuel conditions and the resultant fire behavior those conditions produce increase the risk of a severe wildfire event, such as a running crown fire or a stand-replacing fire. All of the modern fires in the Lake Tahoe Basin had the potential to cause serious property and resource damage. For example, the 2007 Angora Fire burned over 3,000 acres, spread four miles in three hours and burned more than 250 structures on 231 acres of private property.

The project proposes to conduct forest thinning treatments to reduce forest and brush densities to reduce hazardous fuels to modify potential wildfire behavior and enhance defensible space efforts initiated by nearby private landowners. Fuels reduction activities include tree salvage and thinning, brush treatment and removal, and removal of downed logs and other woody materials where the quantity creates a hazard. These activities would remove dead and dying trees, as well as smaller live trees which grow in the understory and sometimes larger trees as necessary to achieve tree spacing goals. In addition, diseased trees would be removed.

Forest thinning activities for the project do not involve use of fire.

To implement the project requires use of off-road vehicles and mechanical equipment during treatment activities. Heat or sparks from vehicles or equipment activity (e.g., chainsaws and chippers) have the potential to ignite dry vegetation and cause a fire. Although the project area does not contain structures and the project does not propose any new structures, project implementation exposes nearby residential neighborhoods to a temporary increase in risk of wildland fire ignition. Additionally, implementation of the project could expose recreational users using hiking and biking trails near the project area to a temporary increase in risk of wildland fires.

As described in Section 2.3.6, “Resource Protection Measures,” the project includes resource protection measures intended to minimize impacts to resources during and after treatment activities. These measures are listed above.

Because the result of treatment activities is a reduction in the amount of fire fuels and improve forest health within the project area, the project would reduce the potential for people and structures to be exposed to wildfire. Implementation of resource protection measures as part of the project would reduce fire ignition hazard from operation of vehicles and mechanical equipment during forestry treatments. This impact would be less than significant.

CUMULATIVE IMPACTS

Although some hazardous materials releases can cover a large area and interact with other releases (e.g., atmospheric contamination, contamination of groundwater aquifers), incidents of hazardous materials contamination are more typically isolated to a small geographic area. These relatively isolated areas of contamination typically do not combine in a cumulative manner with other sites of hazardous materials contamination. On the project area and in the vicinity, there are no identified incidents of widespread hazardous materials contamination with different sources of contamination interacting on a cumulative basis. The project and other cumulative projects identified in Table 3.18-1 would be required to comply with existing federal, state, and local hazardous materials regulations would apply, limiting the potential for releases and contamination and requiring clean-up when releases or contamination do occur. For these reasons, the project would not result in a considerable contribution to a cumulative impact on the public or the environment from exposure to hazardous materials. Therefore, this would be a less-than-significant cumulative impact.

The geographic area for cumulative impacts related to wildland fire hazards encompasses the area around the north shore of Lake Tahoe. The project area is located within a very high fire hazard area. Past fires in the region have resulted in significant losses of property, and substantial damage to habitat and environmental resources. Historic fire suppression and other forest land management practices have allowed fuels to accumulate in many areas, contributing to the severity of wildfires when they do occur. Additionally, past development in the forested landscape has increased the risk to life and property when fires do occur, and increased the potential for ignition of wildland fires through increased human presence and activity. The project and almost all of the other cumulative projects identified in Table 3.18-1 are fuels management projects that are intended to reduce wildland fire risk. The cumulative projects identified in Table 3.18-1 could result in a temporary increase in wildland fire hazard as a result of the use of vehicles and mechanical equipment during forest thinning activities and through activities that are not proposed for this project, such as implementation of pile burning and understory burning. These cumulative projects would be required to take similar fire prevention measures to those identified for the project to reduce the

temporary increase in wildland fire hazards. The project would implement resource protection measures in the project area, which would reduce the project's potential to increase wildland fire hazards from the use of vehicles and mechanical equipment during forestry treatments. The project would not result in a considerable contribution to a temporary or permanent cumulative impact on wildland fire hazards. As described above, the project **would not make a considerable contribution** to a significant cumulative impact.

3.9 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.1 Setting

REGIONAL HYDROLOGY

The Lake Tahoe Basin was formed approximately 2 to 3 million years ago by geologic faulting and volcanic activity. Geologic faults running in a north-south direction allowed the formation of a valley between the uplifting Sierra Nevada and the Carson Range. The northeastern portion of the valley was blocked and dammed by volcanic activity to create the 506-square mile basin that lies along the California-Nevada border. Precipitation and runoff eventually filled a portion of the basin to create Lake Tahoe, which has a water surface area covering nearly two-fifths of the total basin area (191 square miles). Regional topography is characterized by steep mountain slopes at higher elevations, transitioning to more moderately sloped terrain near the lakeshore.

Lake Tahoe is fed by 63 tributary streams and 52 intervening zones that drain directly to the Lake. The Truckee River at the northwest end of the Tahoe Basin is the Lake's only outlet, flowing to Pyramid Lake in Nevada. A dam constructed at Tahoe City in the early 1900s regulates water flow to the Truckee River from the natural rim (6,223 feet above sea level) to the maximum legal Lake level of 6,229.1 feet. The Lake is 12 miles wide and 22 miles long with 72 miles of shoreline.

Average precipitation, measured at almost 32 inches a year at Tahoe City, generally falls as snow in the higher elevations and as snow and rain in the lower elevations, including the lake shore from October to May. Peak stream runoff in the watersheds of interest is typically triggered by spring snowmelt in May and June. The snow pack near the lakeshore predominantly melts before the peak in snowmelt and runoff from the higher elevations. Land cover within the Lake Tahoe Basin is primarily forest, with areas of granitic outcrops and meadows.

Lake Tahoe, an Outstanding National Resource water under the Clean Water Act, is classified by limnologists as an oligotrophic lake, which means the lake has very low concentrations of nutrients that can support algal growth, leading to clear water and high levels of dissolved oxygen (TERC 2011:6.15). The exceptional transparency of Lake Tahoe results from naturally low inputs of nutrients and sediment from the surrounding watersheds. The most recent scientific research points to inorganic fine sediment particles (particles defined as less than 16 micrometers in diameter) as the primary pollutant of concern impairing Lake Tahoe's transparency. This finding is based on the ability of inorganic fine sediment particles to efficiently scatter light and decrease observed transparency. Swift et al. (2006) determined that light scattering by inorganic particles for the period between 1999 and 2002 was responsible for approximately 55 to 60 percent of measured light attenuation in the lake. Additional pollutants of concern include phosphorus and nitrogen, which stimulate algal growth in the lake contributing to declines in transparency and quality of the near-shore environment.

LOCAL HYDROLOGY

The project area contains portions of four TRPA delineated sub-watersheds (Exhibit 2.9-1). The perennial Dollar Creek (in the Dollar Creek sub-watershed) flows eastward just north of the project area A portion of the northern part of the project area is located within the Dollar Creek subwatershed. The majority of the central portion of the project area is within the Lake Forest Creek sub-watershed. This area supports approximately 1,519 feet of intermittent stream and 565 feet of ephemeral drainage. Also in the western portion of the project area, the Barton Creek sub-watershed contains approximately 561 feet of ephemeral drainage. Table 2.9-1 provides a summary of the sub-watersheds and hydrologic features within the project area.

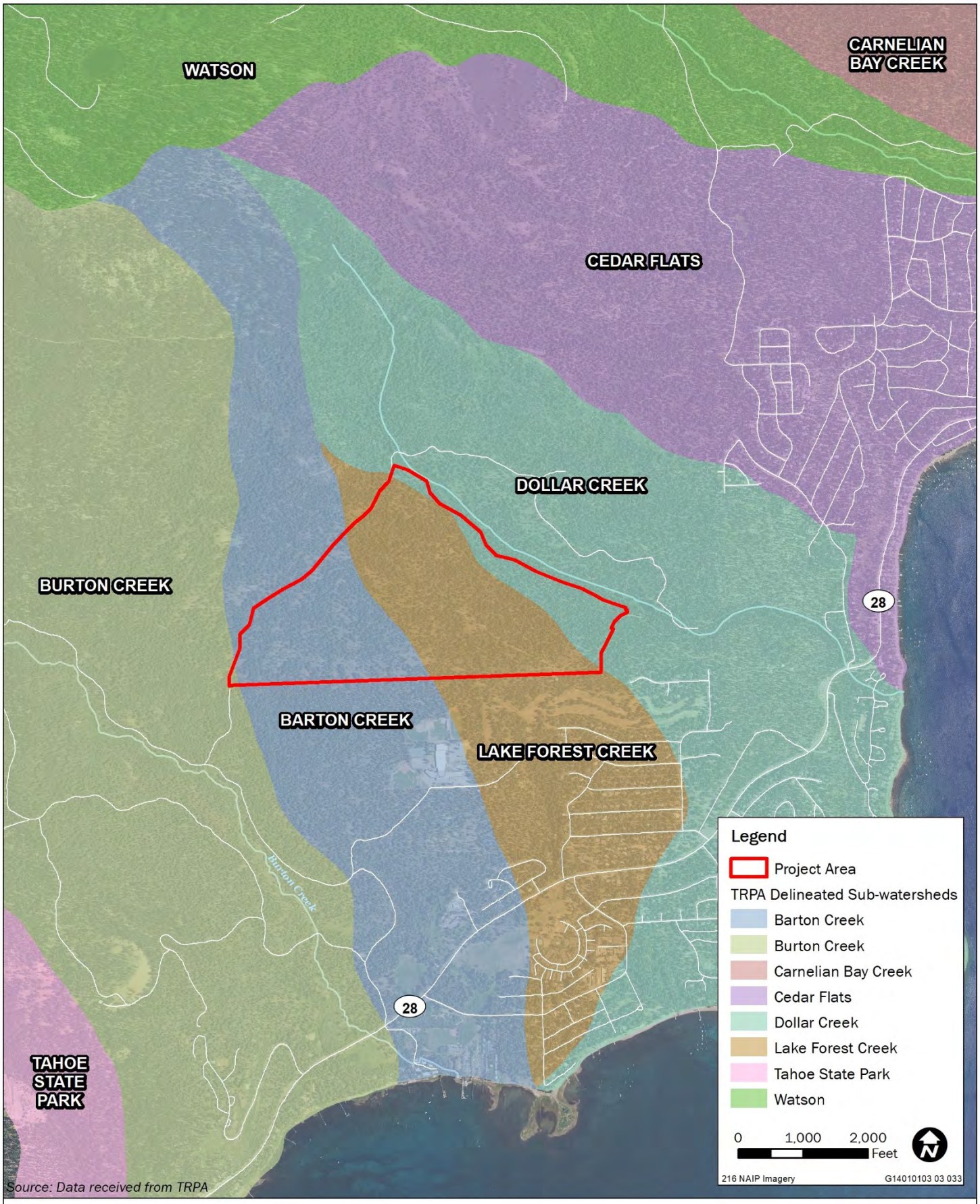


Exhibit 2.9-1 **TRPA Delineated Sub-watersheds**

Table 2.9-1 Hydrologic Features within the Project Area

Sub-Watershed	Acres within Project Area	Streams and Hydrologic Features within the Project Area
Barton Creek	90.0	Ephemeral Drainage (561 ft)
Burton Creek	0.7	None
Dollar Creek	37.8	Perennial Stream (2,751 ft) Dollar Reservoir (0.8 acres)
Lake Forest Creek	134.2	Intermittent Stream (1,519 ft) Ephemeral Drainage (565 ft)

Source: Prepared by Ascent Environmental

Disturbance in the watershed surrounding a stream can lead to stream channel and increased bank erosion (LRWQCB and NDEP 2010). Additionally, pollutants such as phosphorus and nitrogen are often attached to sediment particles, further degrading water quality.

3.9.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to hydrology resources. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- Compliance with all applicable general requirements and other provisions of Category 1 within the 2014 Timber Waiver issued by the Lahontan Regional Water Quality Control Board (Lahontan) (see Appendix A for Section D (Category 1) of the Waiver). Such measures include but are not limited to: use of temporary water quality best management practices (BMPs) to prevent sediment or other contaminants from flowing into surface waters, regular monitoring of equipment to prevent leaks or spills, maintenance of an emergency spill kit on site during all operations to contain fuel or other spilled materials, and prohibitions against operating equipment on soils that are saturated.

- Riparian areas and waterbody buffer zones (WBBZs) within treatment units shall be flagged consistent with 2014 Timber Waiver requirements prior to treatment activities and avoided during treatment activities in the project area.

- Wheeled or track-laying equipment (e.g., harvester loader, masticator, chipper, and the like) shall not be operated in stream courses or SEZ areas, except on existing, designated Class III watercourse crossings during dry surface conditions.

3.9.3 Discussion

a) Violate any water quality standards or waste discharge requirements?

Less than significant. The timber harvest/skidding and chipping/mastication activities within the project area could loosen and disturb soils, remove ground surface litter in some areas exposing the soil surface and facilitating erosion, and compact soils so that they are not able to infiltrate or filter runoff. Surface runoff could become concentrated in tire ruts or other depressions leading to erosion and deposition of sediment laden runoff into surface waters or drainages.

The LRWQCB waste discharge prohibitions limit soil erosion and sediment delivery to streams, floodplains, and SEZs within the Lake Tahoe watershed. Recognizing the need to support fuels reduction and forest health activities which prevent catastrophic wildfire, the LRWQCB established a Conditional Waiter of Waste Discharge Requirements for Waste Discharges Resulting from Timber Harvest and Vegetation Management

Activities in the Lahontan Region (Board Order No. R6T-2014-0030) (see Appendix A). This order is commonly referred to as the 2014 Timber Waiver. The 2014 Timber Waiver identifies six categories of timber harvest and vegetation management activities beginning with those requiring the lowest level of oversight (Category 1) and ending with activities that require diligent use of resource protection measures as well as monitoring and reporting to ensure the protection of water resources (Category 6). Because the proposed project would rely on existing roads but would create new skid trails, would not construct new watercourse crossing in Class I and Class II streams, would not include the equipment operations within SEZs, and does not include activities on slopes greater than 30 percent, it would qualify for a Category 1 waiver. The Category 1 waiver includes the following conditions applicable to the proposed project:

- Equipment operations on roads or anywhere outside of SEZs must be limited to times of the year when soils are not saturated.
- Activities must not cause or create erosion, destabilization of stream banks, temperature increases in waterbodies, disturbance to SEZ vegetation, or concentrated surface runoff.
- Slash, chipped, and masticated material must not be discharged to waterbodies, or be deposited in locations where such material may discharge to a waterbody.
- All completed areas disturbed by activities must be stabilized at the conclusion of operations or before the winter period, beginning October 15, whichever is sooner.

The proximity of the project area to surface waters is an important factor in controlling sediment delivery. Past research on stream buffers found that the majority of erosion features with 30 feet of a stream delivered sediment to the stream, while 95 percent of erosion features further than 30 feet from a stream did not (Rashin et al 2006). As required by the 2014 Timber Waiver, stream buffers would apply to the water courses within or adjacent to the project area. Table 2.9-2 describes the applicable buffers, which are shown in Exhibit 2-2 in Section 2, "Project Description."

Table 2.9-2 Stream Buffers for Water Courses Within or Adjacent to The Project Area

Stream	Classification	Buffer (slope<30%)	Buffer (slope>30%)
Barton Creek	Class 3 (ephemeral)	n/a	n/a
Dollar Creek	Class 1 (perennial)	75 ft	30-50%: 100 ft; >50%: 150 ft
Lake Forest Creek	Class 3 (ephemeral and intermittent)	25 ft	50 ft

Notes:

Class 1: Domestic supplies, including spring on site and/or within 100 feet downstream of the operations area; or fish (at any stage) always or seasonally present onsite, includes habitat to sustain fish migration and spawning.

Class 2: Fish always or seasonally present within 1000 feet down stream and/or; Aquatic habitat for non-fish aquatic species

Class 3: No aquatic life present, waterbody showing evidence of being capable of sediment transport to Class 1 and 2 waters under normal high water flow conditions after completion of timber operations.

Source: Prepared by Ascent Environmental

Equipment would only be allowed to operate within these stream buffers when soils are strong enough (dry enough) to prevent ruts deeper than two inches from forming, when soils are frozen solid, or when snow is deep enough to prevent visible soil disturbance. Treatment would be excluded from riparian areas and SEZs.

As described in Section 2, "Project Description," all treatments would be limited to slopes less than 30 percent. Additionally, landings and skid trails would be located outside of the stream buffers listed in Table 2.9-2, no new roads would be created, and no piles would be burned. In whole tree yarding treatment areas, erosion control measures would be installed on skid trails and access routes to minimize erosion, control runoff, and prevent debris from entering stream courses. Where possible, existing openings would be used

for landings. Within 15 days following completion of the project, all areas of ground disturbance, including landings and skid trails would be stabilized with best management practices including revegetation treatments and wood chips or masticated material. Erosion control measures would be regularly inspected and maintained to ensure that they are functioning as intended by the Conservancy staff. The proposed timber harvest activities would be scheduled to conclude by October 15 each year.

Conclusion

The proposed project includes timber harvest for fuels reduction and forest health. The treatment unit boundaries have been carefully drawn to avoid sensitive habitats and steep slopes so as to create the greatest benefit while protecting surface waters and minimizing erosion. The project would comply with the conditions of the 2014 Timber Waiver which prescribes water quality protection buffers and limits the use of heavy equipment when soils are wet and susceptible to compaction or disturbance. In addition, all areas of ground disturbance would be stabilized, as necessary, following the conclusion of harvest activities. These conditions have been designed by regulatory and land management agencies specifically to protect water quality standards. Finally, the project would significantly reduce the threat of high severity wildfire in treated area, resulting in a long-term benefit to water quality. For these reasons, the proposed project would not violate existing water quality standards or waste discharge requirements. This would be a less-than-significant impact.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No impact. The proposed project would not include the creation of any impervious surfaces that would interfere with groundwater recharge and would not deplete groundwater supplies in any way. The proposed timber harvest activities would reduce the number of trees within the project area which could result in a modest localized increase in groundwater recharge. For this reason, the proposed project would have no-impact on groundwater recharge.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?

Less than significant. Although the project would not alter the course of any river, stream, or drainage feature; the skid trails required for whole tree yarding activities could temporarily redirect or concentrate surface runoff, resulting in erosion. As discussed above under item 2.6.2(b), the erosion potential of the project area soils is slight to moderate because of the coarse soil texture and low to moderate slopes where treatment activities are proposed (less than 30 percent slope). In addition, timber harvest activities would be scheduled for the summer months when significant storm events are less likely to occur, and all disturbed areas would be stabilized as required by the RPMs. For these reasons and the same reason discussed under item 2.6.2(b), the potential for the project to alter drainage patterns in a manner that results in substantial on- or off-site erosion or siltation would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?

No impact. The proposed project would not alter drainage patterns within the project area or create impervious surfaces which could result in increased runoff or on- or off-site flooding. Therefore, the proposed project would have no impact relative to flooding.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No impact. The proposed project would not create impervious surfaces, concentrate runoff, or direct runoff to existing or planned stormwater drainage systems. Timber harvest operations would take place when soils are dry and resistant to compaction or would be completed with low impact equipment over a slash mat (branches and woody materials placer to protect the soil surface). For these reasons, the project would have no impact on the runoff volumes or pollutant load in existing or planned stormwater drainage systems.

f) Otherwise substantially degrade water quality?

Less than significant. The project's potential to degrade water quality is discussed under item 2.9.2(a) above. As discussed above, stringent resource protection measures are in pace to protect soil structure and water quality, and to prevent the discharge of sediment or debris into streams. The project would comply with the conditions of the 2014 Timber Waiver applicable to Category 1 projects which prescribes water quality protection buffers and limits the use of heavy equipment when soils are wet and susceptible to compaction or disturbance. In addition, all areas of ground disturbance would be stabilized, as necessary, following the conclusion of harvest activities. These conditions have been designed by regulatory and land management agencies specifically to protect water quality standards. Finally, the project would significantly reduce the threat of high severity wildfire in treated area, resulting in a long-term benefit to water quality. For these reasons, the potential for the proposed project to degrade water quality would be less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. The proposed project does not include the construction of permanent residential or non-residential structures. Therefore, the project would have no-impact relative to the placement of housing within a flood hazard area.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No impact. The proposed project does not include the construction of any permanent residential or non-residential structures. Therefore, the project would have no-impact relative to the placement of structures within a flood hazard area.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. The proposed project does not include the construction of any permanent residential or non-residential structures and would not alter to flood elevations of any water body. Therefore, the project would have no-impact relative the risk of loss, injury, or death from flooding.

j) Result in inundation by seiche, tsunami, or mudflow?

No impact. The proposed project area is located outside or the anticipated range of a seiche or tsunami on Lake Tahoe, are on low to moderate slopes with soils that are not susceptible to landsides. Therefore, the proposed project would have no impact relative to inundation by seiche, tsunami, or mudflow.

CUMULATIVE IMPACTS

Cumulative impacts to hydrology and water quality are considered in the context of the Lake Tahoe Basin watershed. Historic activities such as logging, milling, mining, and grazing within the Tahoe Basin combined with runoff from urban and recreational developments, have degraded the water quality of the tributaries to Lake Tahoe, resulting in an existing cumulative adverse condition. Within the Tahoe Basin, the historic disturbances along Ward Creek and Blackwood Creek continue to generate large amounts of sediment and other pollutants during storm events (Simon 2006). The Lake Tahoe TMDL was developed to address sediment levels in partnership with local jurisdictions. Additionally, numerous publicly and privately funded

projects have been implemented to restore disturbed areas of the watershed and reduce this adverse condition. As described in under item 2.9.2(a), timber harvest activities that could result in erosion or encroachment within floodplain and sensitive habitats are highly regulated by LRWQCB, TRPA, and the relevant land management agencies. The effect of these regulations on cumulative hydrology and water quality are discussed below.

The proposed project and the related projects listed in Table 2.18-1 would be required to comply with the erosion control and water quality protection conditions of the land managing agency (under the permit or MOU between the respective agency and TRPA) and the protective provisions of the LRWQCB 2014 Timber Waiver. This would include a suite of resource protection measures tailored to the needs of each treatment site but could include limitations on harvesting activities depending on slope and proximity to water courses and sensitive habitats, erosion control practices for implementation during harvest, and restoration of disturbed sites. Therefore, the proposed project and the related projects listed in Table 2.18-1 **would not make a considerable contribution** to a significant cumulative impact related to hydrology or water quality.

3.10 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.10.1 Setting

The project area is located in Placer County within the Tahoe Basin. Developed land uses in the vicinity of the project area include residential, public service, and commercial uses. The project area is undeveloped, forest land that supports preservation of natural resources and recreation uses, including hiking, mountain biking, cross-country skiing, and snowshoeing on publicly-owned land.

Lake Tahoe Regional Plan

Land use regulation by TRPA is guided by its Regional Plan and implementing ordinances. The Regional Plan is intended to establish a balance, or equilibrium, between the natural environment and the built environment; and attain and maintain TRPA's environmental threshold carrying capacities. The Regional Plan Goals and Policies are statements of policy to guide decision making as it affects the Region's resources and environmental thresholds, and they are intended to provide opportunities for orderly growth and development consistent with those thresholds. The Goals and Policies are addressed in six major elements: land use, transportation, conservation, recreation, public services and facilities, and implementation.

The Natural Hazards Subelement of the Goals and Policies Land Use Element establishes TRPA's goal of minimizing risk from natural hazards (Goal NH-1). Policy NH-1.3 requires management of forest fuels within the Region. The proposed project consists of activities that include removal of fuels and management of forested areas to reduce wildfire hazards. For this reason, the proposed project would comply with Goal NH-1 and Policy NH-1.3.

The Vegetation Subelement of the Goals and Policies Conservation Element establishes several policies to allow for forest management practices that reduce the risk of catastrophic wildfires while also ensuring protection for plant communities in the Region (Policies VEG-1.1, VEG-1.3, and VEG-1.7). Additionally, the Vegetation Subelement also identifies active forest management, fuels reduction, and coordination with fire protection agencies to reduce the intensity of naturally occurring wildfire and prevent catastrophic wildfire (Goal VEG-6 and Policy VEG-6.1). One of the project objectives is to reduce the risk of high intensity wildfire in the wildland urban interface (WUI), which would be achieved through removal of forest fuels in contiguous WUI lands that are heavily overstocked. Fuel treatments would promote spatial heterogeneity of forest structure, including clumped tree distribution and canopy gaps such as likely would have been maintained by an active fire regime. Remnant old-growth trees, old-growth candidate trees, an uneven-aged stand structure arranged in multiple canopy layers, select clumps of dense vegetation, snags, and pockets of

coarse woody debris would also be maintained. These forest conditions would help maintain wildlife habitat complexity. For these reasons, the proposed project would comply with Goal VEG-6 and Policies VEG-1.1, VEG-1.3, VEG-1.7, and VEG-6.1.

The Soils Subelement of the Goals and Policies Conservation Element allows for restoration and treatment of SEZ to reduce the risk of wildfire (Policy S-1.7). As described in Chapter 2, "Project Description," no fuel treatment activities would occur within SEZ. SEZ areas within the project area would be identified by flagging in order for treatments to avoid fuel removal activities within these sensitive areas. For these reasons, the proposed project would comply with Policy S-1.7.

Placer County Tahoe Basin Area Plan

The Placer County Tahoe Basin Area Plan and its Implementing Regulations provide a detailed guide for planning in the Placer County portion of the Tahoe Basin. The Area Plan and Implementing Regulations include policies, maximum densities for residential and tourist accommodation uses, community noise equivalent levels, allowable and special uses, and the amount of additional recreation capacity permissible. The Implementing Regulations includes a zoning map, which zones the southeastern portion of the project area as Recreation and the rest of the project area is zoned as Conservation (Exhibit 3.10-1). Forest thinning, such as that which would occur in the project area under the proposed project, is an allowable use in Watson Creek and North Tahoe High School subdistricts which are zoned for Conservation and Recreation respectively.

3.10.2 Discussion

a) Physically divide an established community?

No impact. The project area is located on public lands that are used for passive recreation (e.g., hiking, cross country skiing, and mountain biking) and is located adjacent to a residential neighborhood situated between Carnelian Bay and Dollar Point. The proposed project is not within an established community and would not divide an established community. Therefore, there would be no impact.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than significant. As described above under "Setting," the Area Plan and Regional Plan identify the land use designation for project area as Conservation and Recreation. As discussed under "Placer County Tahoe Basin Area Plan," the proposed treatments are allowable uses and compatible with existing land use designations and zoning. The proposed project would also help implement the Fuel Reduction Strategy and CWPP. The project area for the proposed project is identified in the CWPP. Additionally, all appropriate interagency coordination, consultation, and permits would be completed or obtained, in compliance with all applicable regulatory requirements. For these reasons, this would be a less-than-significant impact.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed project does not contain areas subject to a habitat conservation plan or natural community conservation plan. No impact would result.

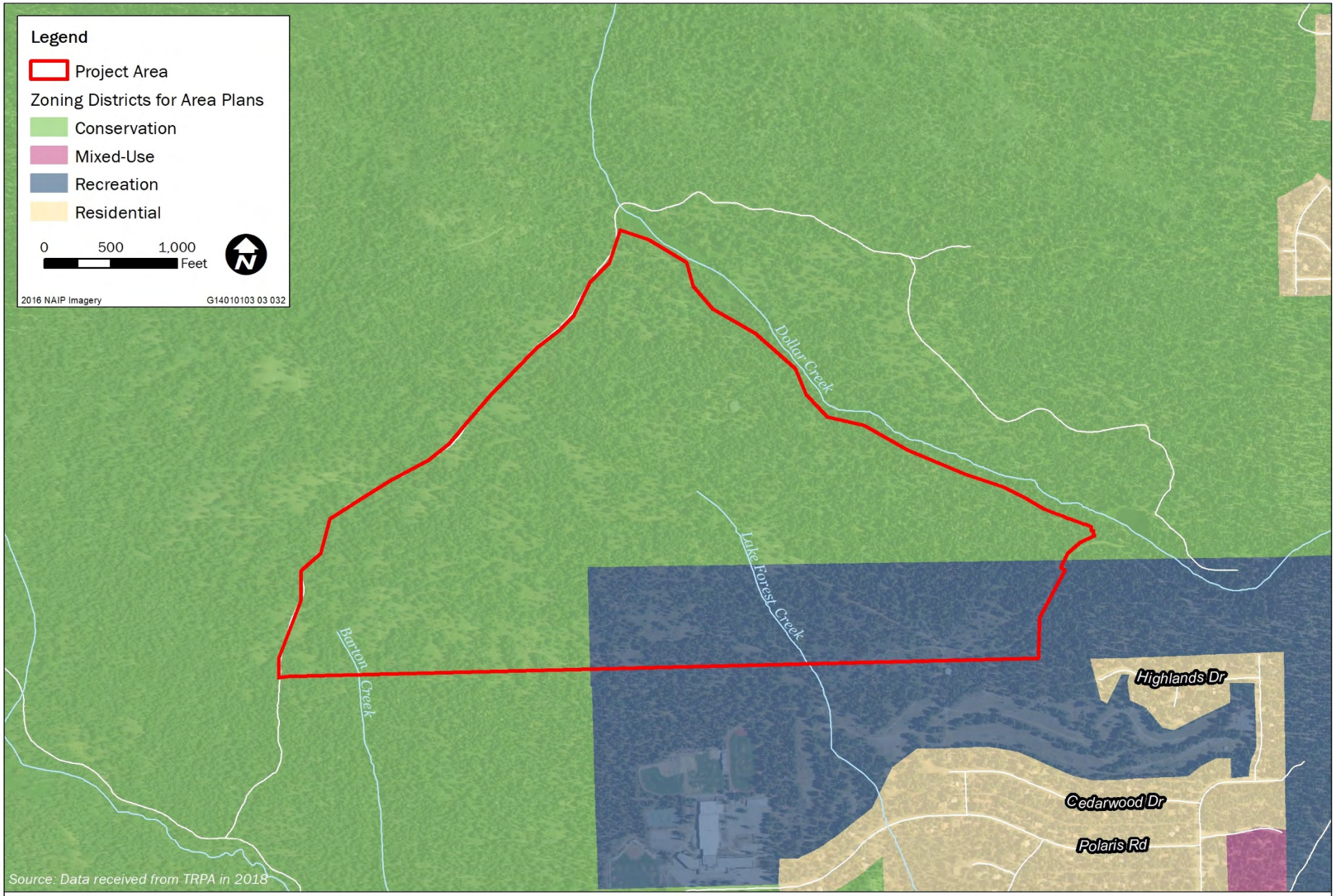


Exhibit 3.10-1

Zoning Districts

CUMULATIVE IMPACTS

Impacts involving land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site-specific; it is addressed on a project-by-project basis. Implementing the proposed project would not result in significant land use planning impacts. Further, related projects in the area are similar in nature to the proposed project and appear consistent with environmental plans and policies. Because no land use impacts would occur on a project-specific basis, the project would not contribute to any potential cumulative land use impacts. Therefore, the project **would not make a considerable contribution** to a significant cumulative impact.

3.11 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Mineral Resources. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.11.1 Setting

The *Mineral Land Classification of Placer County, California* (Loyd 1995) indicates that the project area does not contain known mineral resources. No mineral resource recovery sites are identified in the Regional Plan (TRPA 2012:5-1) or in the Placer County General Plan (Placer County 1994).

3.11.2 Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. The project area is located within Mineral Resource Zone 4 (MRZ-4). The MRZ-4 classification indicates areas where mineral occurrences are unknown and available information does not rule out either the presence or absence of significant mineral resources. However, the project activities would involve removal of fire fuels that would be temporary in nature. The project would not result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state, and no impact would occur.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact. There are no locally important mineral resource recovery sites delineated in the Placer County General Plan, the Regional Plan, or other land use plan that include the project area. Therefore, implementation of the project would have no effect on the availability of known mineral resources, and no impact would occur.

CUMULATIVE IMPACTS

The project would result in no impacts on mineral resources. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative loss of mineral resources. Therefore, there would be **no cumulative impact**.

3.12 NOISE AND VIBRATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1 Setting

The fuel treatments are on forested lands that are quiet compared to developed, urbanized areas in the Tahoe region. The predominant noise source near the fuel treatment sites is traffic traveling on State Routes (SR) 28 and 89 though because of topography and vegetative this roadway noise is not noticeable in the project area. According to TRPA's *2015 Threshold Evaluation Report*, traffic noise levels along SR 89 are not in attainment of their respective transportation corridor noise thresholds but also are not anticipated to increase in any substantial way in the future (TRPA 2016a:10-46 and 10-52). TRPA's transportation corridor noise thresholds are explained in greater detail in the regulatory setting below, as well as TRPA's region-wide traffic noise mitigation program which aims to bring highway noise levels in attainment of applicable TRPA noise thresholds.

In the developed areas near the fuel treatment sites, other nearby noise sources may include landscape maintenance and snow removal activities (e.g., grass cutting, leaf blowing, snow plowing and blowing) at residential and commercial land uses; activities typical of urban and suburban environments, such as people recreating outside; and possibly motorized watercraft activity on the lake.

The closest noise-sensitive receptors to the fuel treatment sites would be the single-family homes along Highlands Drive, which are approximately 370 feet east of the treatment area. The next closest noise-sensitive receptors include the single-family homes on Cedarwood Drive approximately 700 feet south of the treatment area. Another noise sensitive receptor is North Tahoe High School which is approximately 1000

feet south of the project area. Additionally, Tahoe Cross Country has some summer operations; the lodge is located approximately 1600 ft south west of the project area.

Regulatory Setting

Lake Tahoe Regional Plan

The elements of the TRPA Regional Plan related to noise include the following: Noise Subelement of the Goals and Policies of the Regional Plan (TRPA 2012); the TRPA Code of Ordinances (TRPA Code), Chapter 68, "Noise Limitations"; and plan area statements, community plans, and area plans. These elements are described below, followed by a summary of TRPA's region-wide traffic noise mitigation program.

Goals and Policies

The Regional Plan Noise Subelement of the Goals and Policies includes a goal to attain and maintain community noise equivalent level (CNEL) standards that are relevant to the project (Goal N-2) (TRPA 2012:2-26 through 2-28). The CNEL is 24-hour metric. More specifically, the CNEL is the energy average of the sound levels occurring over a 24-hour period, with a 10-decibel (dB) penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. The underlying policy intended to help achieve Goal N-2 includes: establishing specific site design criteria for projects to reduce noise from transportation corridors and which may include using earthen berms, and barriers (Policy N-2.1). The transportation corridor CNEL values override land use-based CNELs within 300 feet of the applicable roadway (TRPA 2012:2-26).

Code of Ordinances

Chapter 68, "Noise Limitations," of the TRPA Code is intended to implement the Noise Subelement of the Goals and Policies document and to attain and maintain TRPA's noise-related Environmental Threshold Carrying Capacities (shown below).

TRPA Code Section 68.4, "Community Noise Levels," states that TRPA shall use CNELs to measure community noise levels and that individual plan area statements shall set forth CNELs that shall not be exceeded by any one activity or combination of activities. The CNELs set forth in the plan area statements are based on the land use classification, the presence of transportation corridors, and the applicable threshold standard. Plan area statements essentially provide plan CNELs and other planning standards specific to a local area within the Tahoe Region. The project area is located in two subdistricts of the Placer County Tahoe Basin Area Plan, North Tahoe High School Subdistrict and Watson Creek Subdistrict. The North Tahoe High School Subdistrict has an established maximum community noise equivalent level of 55. The Watson Creek Subdistrict has an established maximum community noise equivalent level of 50.

Environmental Threshold Carrying Capacities

TRPA has established environmental thresholds for nine resources, including noise. There are two noise threshold indicators: single noise events and cumulative noise events. Both types of noise thresholds are summarized below as context for the current environmental analysis.

Single Noise Events

A noise event can be defined as an unexpected increase in acoustic. Single Noise Event Threshold Standards adopted by TRPA are based on the numerical value associated with the maximum measured level in acoustical energy during an event. This threshold establishes maximum noise levels (Table 3.12-1) for aircraft, watercraft, motor vehicles, motorcycles, off-road vehicles, and snowmobiles.

Cumulative Noise Events

TRPA adopted CNEL standards for different zones within the Region to account for expected levels of serenity. The standards, established in the Goals and Policies, apply to the entire Lake Tahoe region. The noise limitations established in Chapter 68 of the TRPA Code do not apply to noise from TRPA-approved

construction or maintenance projects, MOU exempt projects, or the demolition of structures, provided that such activities are limited to the hours between 8:00 a.m. and 6:30 p.m.

TRPA's transportation corridor CNEL thresholds override land use-based CNELs within 300 feet of the applicable roadway (TRPA 2012:2-26). TRPA's transportation corridor noise thresholds for US 50 and SRs 431, 28, 89, 207, and 267 override TRPA's land use-based CNEL thresholds at all locations within 300 feet from the edge of the roadway.

Placer County Tahoe Basin Area Plan

The Placer County Tahoe Basin Area Plan (Area Plan) is a component of the Lake Tahoe Regional Plan and the Placer County General Plan. The Plan Area includes the portions of Placer County located within the Lake Tahoe Regional Planning area, including the 151 acres where forest thinning would occur. The Area Plan was adopted by Placer County in late 2016 and by TRPA in early 2017. The Implementing Regulations of the Area Plan include development standards and guidelines, including noise standards for different subdistricts in the plan area (Placer County and Tahoe Regional Planning Agency 2017:222, 234, 249). Each subdistrict contains unique noise standards based on the intensity of development in the plan area and generally are consistent with the environmental threshold carrying capacities for the applicable land uses. Table 3.12-2 lists the noise standards for those subdistricts in which forest thinning would occur.

Table 3.12-2 Noise Standards of Applicable Subdistricts

Subdistrict	CNEL	
Watson Creek	50 dB	
North Tahoe High School	55 dB	

Notes: CNEL= Community Noise Equivalent Level; dB= decibels; NA=Not Applicable; SR=State Route

[1] TRPA's transportation corridor noise standards indicate how loud traffic noise can be at a distance of 300 feet from the edge of the highway.

Source: Placer County and Tahoe Regional Planning Agency 2017:222, 234, 249,

Placer County Noise Ordinance

Article 9.36 Noise of the Placer County Code defines sound level performance standards for sensitive receptors. Relevant standards are listed below.

Article 9.36 Noise

Noise level standards for sensitive receptors from Placer County Code Article 9.36 are shown in Table 3.12-3. The ordinance states that it is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied, or otherwise controlled by such a person that causes the exterior sound level, when measured at the property line of any affected sensitive receptor, to exceed the ambient sound level by 5 dB or exceed the sound level standards (as set forth in Table 3.12-3), whichever is greater.

Table 3.12-3 Placer County Noise Ordinance Noise Level Standards for Sensitive Receptors[1, 2]

Sound Level Descriptor (dB)	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}	55	45
L_{max}	70	65

Notes: dB=decibel; L_{eq} = equivalent continuous noise level (average noise level) represents an average of the sound energy occurring over a specified period. In effect, Leq is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour equivalent sound level is the energy average of A-weighted sound levels occurring during a 1-hour period; L_{max} = maximum noise level or the highest instantaneous sound level measured during a specified period.

[1] Each of the sound level standards specified in this table shall be reduced by five dB for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus five dB.

[2] If the intruding sound source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the sound level measured while the source is in operation shall be compared directly to the sound level standards in this table.

Source: Placer County 2004

9.36.030 Exemptions

According to Section 9.36.030, "Exemptions," exempts some noise-generating activities from the above noise ordinance standards. This includes construction that is performed between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order.

17.02.050 Interpretation

According to Section 17.02.050, "Interpretation," when conflicts occur between county standards and standards adopted by ordinance in any applicable community plans, including those areas within the jurisdiction of TRPA, the provisions of the community plans shall apply.

3.12.2 Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Less than significant. The project would consist of the forest treatments using off-road heavy-duty equipment, such as mechanical harvesters, forwarders, chain saws, loaders, and wood chippers. This equipment generally has the same types of large engines as typical construction equipment. Haul trucks would also be used to transport chipped biomass away from the treatment sites. It is assumed that the noise levels generated by these types of equipment would be similar to noise levels generated by standard construction equipment, as listed in Table 3.12-4.

If the three loudest pieces of equipment listed in Table 3.12-4 are operated next to each other they would generate a combined noise level of 90 dB at 50 feet. See Appendix C for noise calculations. As stated above, the closest noise-sensitive receptors to fuel treatment sites would be the single-family homes along Beverly Drive in Carnelian Bay, which are approximately 160 feet east of treatment site. Through distance alone, the combined noise level of the loudest pieces of equipment would attenuate to 76 dB. However, at least 15 dB noise protection would be provided by the stand of forest between the treatment site and the receptor (Hoover & Keith Inc. 2000:6-9, as cited in Caltrans 2013:7-8), resulting in a noise exposure level of 61 dB at the nearest residence. Thus, noise-sensitive receptors near fuel treatment sites could, at times, experience elevated noise levels. As is the nature of forest thinning, heavy-duty off-road equipment would not be operated in the same location for more than a few days. Thus, any increase in noise exposure at nearby receptors would be temporary and periodic.

Table 3.12-4 Noise Emission Levels from Heavy Off-Road Equipment

Equipment Type	Typical Noise Level (dB) @ 50 Feet[1]
Chain Saw	85
Dozer	85
Tractor	84
Rubber Tired Skidder	84
Loader	80
Backhoe	80
Trucks	74–88
Wood Chipper	75[2]

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Sources:

[1] reference noise levels from FTA 2006 except where indicated otherwise

[2] Berger et. al. 2010

However, as stated in Chapter 2, "Project Description," all the equipment used for forest treatment would be fitted with factory-installed muffler devices and maintained in good working order and all forest treatment activity would occur during daytime hours and thus be exempt from the noise thresholds and standard by the Placer County Noise Ordinance (Article 9.36) and consistent with the TRPA's Best Construction Practices Policy for the Minimization of Exposure to Construction-Generated Noise and Ground Vibration. Therefore, fuel treatment activity would not result in the exposure of persons to or generation of noise levels in excess of applicable standards. This impact would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than significant. The proposed project would not result in the long-term operation of a source of ground vibration. In addition, the project would not develop new vibration-sensitive receptors. Fuel treatment activity would not include the types of equipment or activities that have the potential to generate relatively high levels of ground vibration, such as pile driving, drilling, boring, or rock blasting. Moreover, the heavy equipment used for fuel treatment would not operate close enough to any residences or other structures such that they would be exposed to noticeable levels of ground vibration. Therefore, this impact would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No impact. The proposed project would not result in the long-term operation of any stationary noise sources, result in a long-term increase in noise-generating motor vehicle trips, or develop or relocate of noise-sensitive receptors. As discussed in item a) noise-generating heavy equipment used for forest thinning would not be operated in the same location for more than a few days. Therefore, the proposed project would not result in a permanent increase in ambient noise levels in the project vicinity and would have no impact on permanent ambient noise levels.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant. As discussed under item a), noise generated by fuel treatment activity would be temporary in nature because it would not be performed in the same location for more than a few days. Also, as discussed under item a), fuel treatment activity would not result in the exposure of persons to noise levels in excess of applicable TRPA noise thresholds and Placer County noise standards at noise-sensitive

receptors. Thus, the project would not result in a substantial temporary or period increase in ambient noise levels. This impact would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project area is not located within the airport land use plan for the nearest airport, the Truckee Tahoe Airport (Truckee Tahoe Airport Land Use Compatibility Plan, 2004 [draft 2016]), nor is it within 2 miles of that airport. There would be no impact.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project area is not located within the vicinity of a private airstrip. There would be no impact.

CUMULATIVE IMPACTS

The project would result in no permanent changes to noise levels. The project would result in some less-than-significant, short-term and temporary noise and ground vibrations during forest thinning operations. This temporary noise and ground vibration would not combine with other concurrent projects identified in table 3.18-1 in such a way that would result in significant noise or ground vibration exposure to the same individual noise-sensitive receptors because other noise generating projects would not be occurring concurrently within the project vicinity. Thus, the project would **not make a considerable contribution** to a cumulatively significant impact.

3.13 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.1 Setting

The communities closest to the project area include Highlands, Cedar Flat, Dollar Point, and Tahoe City. According to the U.S. Census Bureau, in 2015 the estimated population for these communities was approximately 3,000 people with approximately 4,750 total housing units (U.S. Census Bureau 2016a, 2016b). Located in the Placer County portion of the Tahoe Basin, many of the residences are used as second homes or vacation rentals. There is no housing within the project area.

3.13.2 Discussion

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less than significant. The proposed project does not include construction of new housing or commercial businesses. Therefore, no direct population growth would result from implementation of the proposed project. Forest treatments would be minimal and short-term, and are not expected to result in employees relocating to the area. The proposed project would provide local, short-term and temporary employment and would not be considered to result in a substantial increase in employment. No additional permanent staff would be needed for operation and maintenance of the proposed project. Employment needs for the proposed project would be met by existing forestry contractors that work in Placer County and by existing Conservancy staff, and biomass and sawmill facility staff. In addition, the long-term use of the project area would be for open space and passive recreation uses. For these reasons, the proposed project would have a less-than-significant impact on population growth.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

No impact. There are no homes or other structures located in the project area. The proposed project would not include removal of any homes. Therefore, the proposed project would have no impact on displacement of homes.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No impact. As described under "b" above, no homes would be displaced as a result of the proposed project. Therefore, no people or existing residences would be displaced, and there would be no impact.

CUMULATIVE IMPACTS

The cumulative projects listed in Table 3.18-1 would generate temporary, short-term employment and would not be considered to result in a substantial increase in employment. Employment needs for these projects would be met by existing forestry contractors that work in Placer County and by existing Conservancy and biomass and sawmill facility staff. The project would not induce long-term population growth. The project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative permanent increase in employment or population growth. The project would result in no impacts on displacement of housing or people. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative displacement of housing or people. As described above, there would be **no cumulative impact.**

3.14 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

3.14.1 Setting

FIRE PROTECTION

In the Lake Tahoe Basin, federal, state, and local fire districts participate in mutual aid agreements to provide and/or receive support and services during unplanned emergency events with other cooperating agencies. The project area is served by the NTFPD and CAL FIRE.

North Tahoe Fire Protection District

Fire protection for private lands within the project area, including land adjacent to the project area, is provided by NTFPD. The NTFPD protects an area of 31 square miles on the North and West Shores of Lake Tahoe. There are six fire stations within the District, which are located in Alpine Meadows, Tahoe City, Homewood, Dollar Hill, Carnelian Bay and Kings Beach that are staffed by 50 uniformed and support personnel to nearly 20,000 people within the area served (NTFPD 2015). Station 51 located at 222 Fairway Drive in Tahoe City, is approximately 3.5 miles southwest of the project area and is staffed full-time.

California Department of Fire and Forestry Protection

Portions of the Lake Tahoe Region are considered to be within State Responsibility Areas (SRAs), which are identified by the State Board of Forestry as areas for which CAL FIRE has the primary duty for wildland fire prevention and suppression. Station 55 in Carnelian Bay is the closest station to the project area, approximately 3.5 miles northeast, but is only staffed April through October by CAL FIRE.

POLICE PROTECTION

California Highway Patrol (CHP) is the primary enforcement for California Tahoe Conservancy Land and officers also patrol state highways, such as Interstate 80 in addition to SRs 28, 89, and 267, that could be utilized by chip vans and logging trucks to transport materials to biomass facilities and sawmills. The Placer County Sheriff Office is the primary jurisdictional law enforcement agency that provides law enforcement

service to the lands outside of CTC lands around the project area. The Tahoe Substation in Tahoe City (2501 North Lake Boulevard) is the closest Placer County Sheriff's substation. The Tahoe Substation has over 40 positions, including one field operations lieutenant, 18 patrol deputy positions, six patrol sergeants, four detectives, one detective sergeant, and one problem-oriented deputy (neighborhood disputes and Placer County code violations), and is commanded by a Sheriff's Captain (Placer County 2015). There are typically three deputies and one sergeant on patrol from this station (Walsh pers. comm. 2015).

SCHOOLS

The project area is located within the Tahoe Truckee Unified School District. Schools in the project area include Tahoe Lake Elementary School, North Tahoe High School, and North Tahoe School. North Tahoe High School and North Tahoe School are located less than 0.1-mile southeast of the project area. Tahoe Lake Elementary School is a little more than 3 miles southeast of the project area. Students at North Tahoe High School, and North Tahoe School likely use trails within the project area.

PARKS

A number of parks that serve local residents and visitors are located in the vicinity of the project area. Burton Creek State Park is located adjacent to the project area to the west. A comprehensive list of park and other recreation facilities in the vicinity of the project area is included in Section 3.15, "Recreation.

3.14.2 Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

Less than significant. The project would involve forest treatments to remove fire fuels, which would be hauled to either a sawmill or a biomass facility. The project duration would be short-term to be completed over the course of two summer (i.e., May – October) field seasons. As described under "Setting," the project area is served by the NTFPD and CAL FIRE. The project would reduce the threat of wildfire after completion of forest thinning activities; consequently, implementation of the project would not result in a permanent increase the need for fire protection services that would result in the need for new or physically altered fire protection facilities. Implementation of the project would result in the use of off-road vehicles and mechanical equipment within vegetated and forested areas with a very high fire hazard (See Section 3.8.1 Wildland Fire Hazards). Heat or sparks from vehicles or equipment activity (e.g., chainsaws and chippers) could ignite dry vegetation and cause a fire. The use of mechanical equipment as part of treatment activities within the forested project area could pose a temporary increased risk of fire that could result in a short-term increase in demand for fire protection services from CAL FIRE and NTFPD.

As described in Section 2.3.6, "Resource Protection Measures," the project includes RPMs intended to minimize impacts to resources during and after treatment activities. These measures require the forestry contractor to:

- Prepare a Fire Prevention Control Plan for the prevention and control of fires on the treatment site.
- Operations shall follow fire prevention precautions, including maintenance of tools and equipment for firefighting and regular testing and inspection of fire equipment.

- Contractors, in cooperation with NTFPD and California Department of Forestry and Fire Protection (CAL FIRE), shall take all reasonable and practicable action to suppress fire resulting from forest thinning operations.

Because the project would reduce fire fuels in the project area, the project's long-term demand for fire protection services would be reduced. Additionally, implementation of resource protection measures intended to reduce fire hazards during forestry treatments, the project's short-term demand for fire protection services would be reduced. This impact would be less than significant.

Police protection?

No impact. The project would involve forest treatments to remove fire fuels, which would be hauled off-site to a biomass facility or sawmill. As described under "Setting," law enforcement services in the project area are provided by the Placer County Sheriff's Office and CHP. Additionally, the project would temporarily introduce workers and equipment into the project area and would require transport of biomass and lumber to off-site facilities and sawmills. No structures would be developed in the project area. There is no evidence to suggest the proposed project would result in an increase in demand for police protection over existing conditions such that new or expanded facilities are necessary to maintain current service levels. There would be no impact.

Schools?

No impact. The project would involve forest treatments to remove fire fuels, which would be hauled off-site to a biomass facility or sawmill. The use of trails in the project area by the North Tahoe High School and North Tahoe School may be temporarily disrupted during treatment activities, most of which would occur outside of the normal school year schedule. These activities would be temporary and would not directly affect any school facilities. In addition, the proposed project does not include development of new residences and would not result in permanent creation of jobs. For these reasons, the proposed project would not result in an increase in demand for educational services and, consequently, would not result in the need for new or physically altered schools. Implementation of the proposed project would have no impact on schools.

Parks?

Less than significant. See discussion under "a" and "b" in Section 3.15, "Recreation." The proposed project would not result in a permanent increase in demand for park facilities that would result in the need for new or physically altered park facilities. This impact would be less than significant.

Other public facilities?

No impact. The project does not include development of new residences and therefore would not affect the population in the project area that would increase the demand for other public facilities, such as libraries and community centers. Therefore, implementation of the project would have no impact on these other public services.

CUMULATIVE IMPACTS

The geographic area for cumulative effects related to fire protection services includes the area around the North Shore of Lake Tahoe. The cumulative projects included in Table 3.18-1 are fuels management projects that are intended to reduce wildland fire risk. These cumulative projects could result in a temporary increase in wildland fire hazard and subsequent temporary increase in demand for fire protection services as a result of the use of vehicles and mechanical equipment during construction and forest thinning activities and implementation of pile burning and understory burning. Construction activities for the Dollar Creek Shared-Use Trail project could utilize similar types of mechanical equipment to those used for the project and other cumulative fuels management projects. This project would be required to take similar fire prevention measures as those identified for the project to reduce the temporary increase in wildland fire hazards and subsequently reduce the potential increase in demand for fire protection services. Construction of the Dollar Creek Shared-Use Trail is anticipated to be completed in 2018 and but would be located far enough away to

not result in cumulative impacts related to fire protection. The forestry contractor would implement resource protection measures intended to reduce fire hazards during forestry treatments in the project area. These measures minimize the project's temporary contribution to an increase in wildland fire hazards and subsequently minimize the temporary increase in demand for fire protection services. The project would not result in a considerable contribution to a temporary or permanent cumulative impact on demand for fire protection services.

The project would result in no impacts on demand for police protection, schools or other public facilities. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in an increase in demand for police protection, schools, or other public facilities which could cause significant adverse environmental impacts. Cumulative impacts related to recreation resources are discussed in Section 3.15, "Recreation." As described above, the project **would not make a considerable contribution** to a significant cumulative effect related to public services.

3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☒	☐	☐
c) Displace recreation users or interfere with existing or planned recreation uses?	☐	☒	☐	☐

3.15.1 Setting

The project area and vicinity contain a number of bike and pedestrian trails, both paved and unpaved (see Exhibit 3.15-1), which are also used for snowshoeing and cross-country skiing in the winter. These trails are used by local residents, visitors, and students at North Tahoe High School and North Tahoe School, as well as for a variety of special events and races (e.g., Burton Creek Trail Run and the Tahoe Trail 100) hosted by Big Blue Adventure in summer and winter.

The Highlands Community Center located south of the project area at 925 Country Club Drive is home to the Tahoe Cross Country Ski Area (Tahoe XC), which is operator or for the Tahoe City Public Utility District under their use permits from the Tahoe Conservancy and California State Parks. Tahoe XC provides groomed cross country skiing and snowshoeing tracks in the winter, with mountain bike rentals serving a summer trail system. A portion of their authorized trail system extends into the project area. Approximate locations of the Tahoe XC trails are shown on Exhibits 3.15-1 and 3.15-2.

The Dollar Creek Shared-Use Trail, constructed on a Placer County-owned easement through the Conservancy properties, is under construction with completion anticipated in 2018. The 2.2-mile paved trail will extend from the 22-mile long existing shared-use trail system, which currently ends near the intersection of Dollar Drive and SR 28. The new trail will extend to Fulton Crescent Drive, through public lands outside of the project area. The trail alignment is shown on Exhibit 3.15-1.

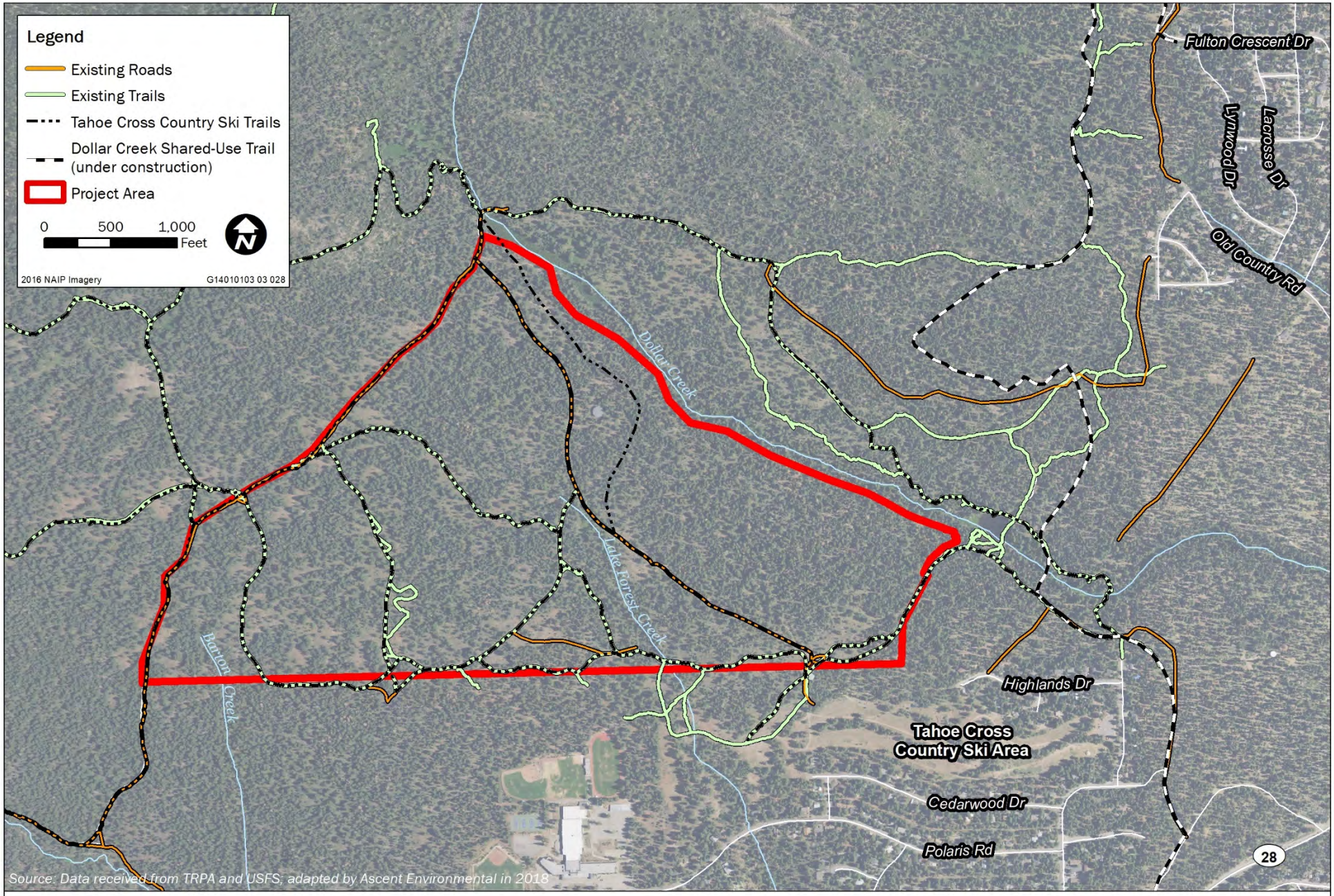
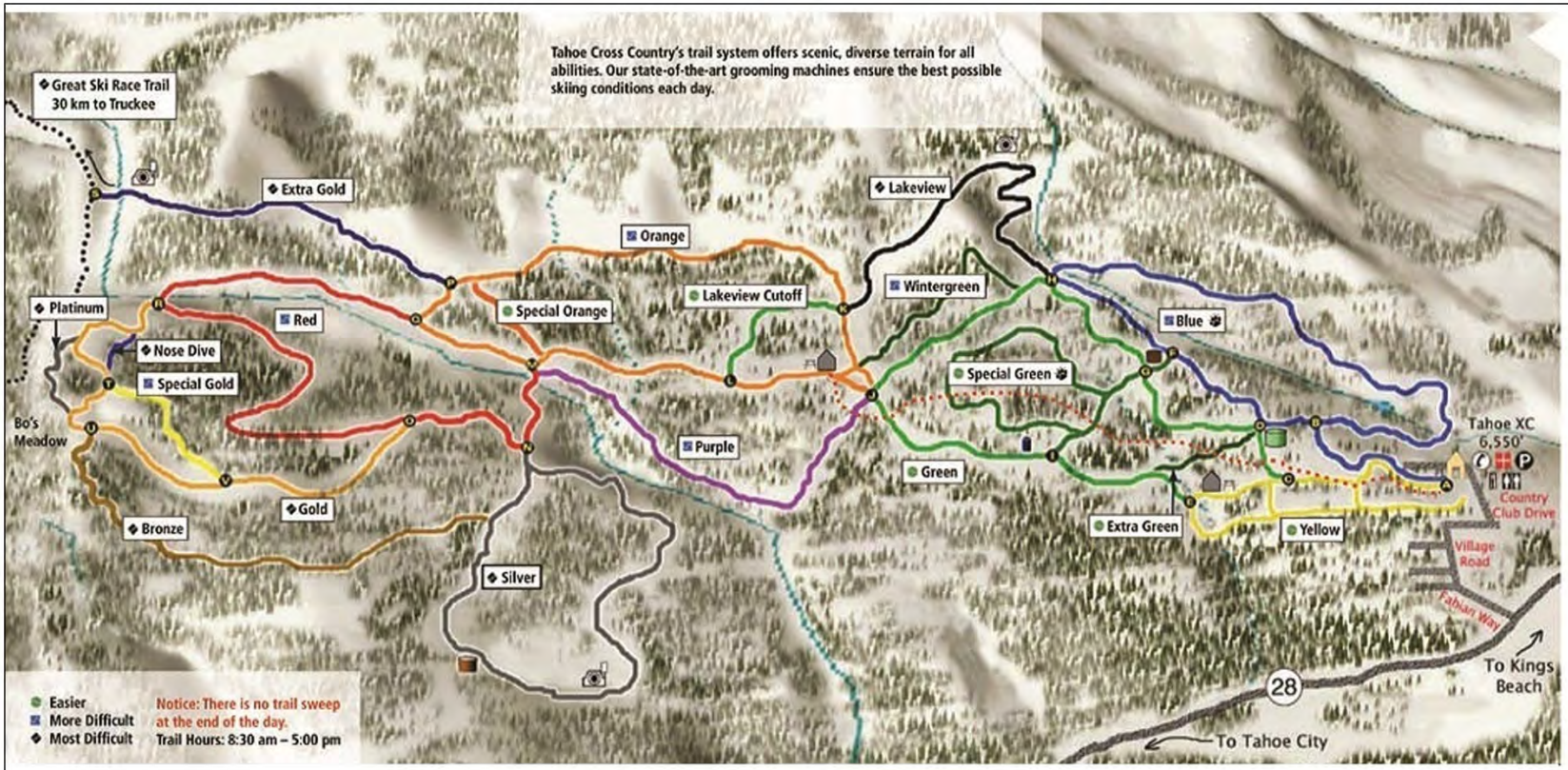


Exhibit 3.15-1

Roads and Trails



TRAILS

Yellow	2.5 km
Green	4 km
Special Green	3 km
Extra Green	1.5 km
Special Orange	1.5 km
Lakeview Cutoff	0.8 km
Orange	5 km
Red	4.5 km
Blue	4.5 km
Wintergreen	1 km
Purple	4 km
Special Gold	2 km
Lakeview	2 km
Gold	4.5 km
Silver	5 km
Extra Gold	3.5 km
Nose Dive	0.4 km
Bronze	2.5 km
Platinum	1 km
Snowshoe Trail	2 km
Fiberboard Freeway (Not maintained by the ski area)	

SYMBOLS

- Parking
- Day Lodge/Wi-Fi
- Telephone
- Ski Patrol
- Restrooms
- Warming Hut
- Lake Views
- Food/Drink
- Dog Trails
- Intersections: Letters denote trail intersections. You will find corresponding letters on trail signs for orientation.

DOG TRAILS

Dogs are permitted Monday through Friday (non-holiday) 8:30 am to 5 pm, 3 pm to 5 pm during weekends and holiday periods. Dogs are permitted on Special Green Trail and Blue Trail.

Trail Descriptions

Yellow	Our easiest and closest trail. A great warmup loop that also accesses Yellow Hut. Hot chocolate anyone?
Green	A great 4km loop that also leads to the outer trails.
Special Green	Gently rolling through pine and fir forest, this is a dog friendly favorite amount novices and dog owners.
Extra Green	A fun link from upper Green to lower Green.
Special Orange	Gentle and curvy, a great cutoff trail across Orange.
Lakeview Cutoff	Access Lakeview or lower Orange trail.
Orange	A balance of hills and flats, don't forget to visit the hut.
Red	Beautiful views along Antoine Meadows
Blue	The dog lover's favorite, enjoy fun descents and steady climbs. Treat your dog to a loop around Blue!
Wintergreen	Wander through the woods, a fun alternative to Green Trail.
Purple	A great climb and a great descent, either way you ski it.
Special Gold	A fun link across Gold trail, great snow conditions here.
Lakeview	Panoramic view of the lake, worth the climb to the top. The steeper side is a great option for snowshoers.
Gold	Challenging climbs and curvy descents, a local favorite.
Silver	A gentle side, a steeper side, a beautiful view in the middle.
Extra Gold	"The Great Ski Race Trail", with a lake view at the top.
Nose Dive	Up or down, this trail will get your heart beating.
Bronze	Links Gold to Silver, our most popular intermediate trail.
Platinum	A little steeper than Gold, twisty, curvy and fun.

Source: Prepared by Tahoe XC

X14010103 03 001

Exhibit 3.15-2

Tahoe Cross Country Ski Trails

ASCENT ENVIRONMENTAL

3.15.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to recreation resources and opportunities. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts: .

- Skid trails created as part of the forestry operations shall be covered with mulch from mastication operations and, if requested by Conservancy staff, re-contoured to promote natural drainage, de-compacted, and/or reseeded. The Conservancy or forestry contractor shall conduct minor trail rehabilitation activities, as needed, to maintain public use of existing trails for recreation users such as cross-country skiers, hikers, mountain bicyclists, and runners. Additional trail rehabilitation could include removing slash and re-contouring the trail, if needed, to restore it to pre-project conditions.

- The forestry contractor shall maintain existing improvements, such as access roads and trails used during implementation of the project.

- The forestry contractor shall repair and rehabilitate any incidental damage caused by this project to existing trails and roads, such as if they are used as a skid trail or are within an active treatment area, to ensure that that existing roads and trails, including those that are part of the Tahoe Cross Country trail system, are open and free of masticated material or other debris after the project area is reopened for public use.

- During non-operational periods, the contractor shall ensure that trailhead access points shall be open to public use and not blocked with equipment.

3.15.3 Discussion

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than significant. The proposed project would implement forest thinning on land that would be completed over the course of two seasons between summer/fall 2018 and spring 2020. The project area contains hiking, skiing, and biking trails that are frequently used, including by visitors to the nearby Tahoe XC. Implementation of the project would temporarily redirect public access to outside of the treatment area during active operations. As a result, there could be short-term, minor increases in use on nearby trails. There is no evidence to suggest a short-term increase in use on trails near the project area would result in substantial physical deterioration or acceleration of physical deterioration of existing nearby trails or other recreational facilities.

The treatment area would be reopened to non-motorized public access after completion of treatment activities. The proposed project includes an RPM that requires the forestry contractor to repair and rehabilitate any incidental damage to well-established trails and roads after project activities are completed such that these roads and trails are open and free of debris after project operations cease. The forestry contractor would minimize the number of times and locations in which equipment would cross the trail. Trail crossing locations would be approved by the Conservancy, and the Conservancy would require the contractor to take site-specific measures to minimize the potential for equipment to damage the trail at crossing locations. Such site-specific measures would be determined by the Conservancy and could include limiting the locations of crossings, installing temporary ramps on either side of the trail to avoid degrading the edges of the trail as equipment crosses perpendicular to the trail, or restricting the weight of vehicles that may cross the trail.

Because the site closures would be short-term, and the forestry contractor would restore any other trails damaged by the project, impacts on recreation facilities and nearby trails would be less than significant.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less than significant with mitigation. The proposed project would implement forest thinning treatments on forested land that would be completed over the course of two summer field seasons between summer/fall 2018 and spring 2020. The proposed project would not construct any new recreational facilities and would not increase demand for other parks and open space facilities, such that new or expanded facilities would be required and there would be no subsequent adverse physical effect on the environment. Operation of treatment equipment, such as a harvester, forwarder, or others (see Exhibits 2-3 through 2-6), would only use established roads within the project area. Project activities and operation of mechanical equipment would not use the Dollar Creek Shared-Use Trail as a haul route. With implementation of RPMs included in the project, the forestry contractor would restore any disturbed trails to pre-project conditions, which could include removing slash and re-contouring trails, as needed. Any potential adverse physical effects on the environment that could occur as a result of disturbing and restoring trails, including soil erosion, are addressed as part of the project in the appropriate resource sections of this Initial Study (see discussion under 3.6.2(b) and under items 3.9.3(a) and 3.9.3(c)).

Treatment activities would include use of landings through which project vehicles, such as logging trucks, chip vans, and other treatment equipment that would access the project area. Existing landings or existing clearings outside of SEZs and WBBZs in the project area would be used whenever feasible. New landings could be created or modified to accommodate project vehicles and equipment. New landings or skid trails established for the project could be used as new access points for recreational motor vehicles and off-highway vehicles (OHVs) after completion of the project. These new access points could increase the long-term unmanaged use of motor vehicles and OHVs in the project area. This increase in OHV use could result in adverse physical effects on the environment, such as soil erosion or water quality impacts. Therefore, this impact would be potentially significant.

Mitigation Measure REC-1: Install barriers to prevent new motor vehicle access

To eliminate the potential for new motor vehicle access points into the forest at new forest-treatment landings and skid trails created in the project area, the forestry contractor shall establish physical barriers adjacent to new landings, or skid trails where they access the forest from existing roads or trails to discourage post-treatment motor vehicle access to the project area. The contractor shall also revegetate and spread mulch and/or slash in the landing area or along skid trails to reduce the visibility of disturbance of the cleared area and expedite restoration. These physical barriers and restoration activities shall be established within 15 days of completion of operations in the treatment unit. The types of physical barriers that could be used include, but are not limited to, boulders, split rail fencing, or other permanent physical features that are scenically compatible with the forest setting.

Level of Impact after Implementation of Mitigation Measures

Implementation of Mitigation Measure REC-1 would reduce the potential for adverse environmental effects resulting from motor vehicle use in the project area. Mitigation Measure REC-1 would accomplish this by creating a permanent, physical barrier that eliminates the potential for motor vehicle entrance into the project area through landing areas or skid trails created by the project. This impact would be reduced to a **less-than-significant impact with mitigation**.

c) Displace recreation users or interfere with existing or planned recreation uses?

Less than significant with mitigation. The proposed project would occur during summer months when roads and trails are active with hikers, bicyclists, runners, and special events. The project activities could interfere with the use of trails by recreationists in the project area. Events scheduled for 2018 that typically use trails within the project area are included in Table 3.15-1. Organizers of these events include Big Blue Adventure, North Tahoe High School, Youphoria Productions, and Northstar at Tahoe. Only events that could occur within the timeframe for treatment activities are listed here. Because treatment activities would be required to remove equipment and restore roads and trails to their pre-project conditions, the proposed project would not be anticipated to interfere with any special events hosted by Tahoe XC in the winter.

Table 3.15-1 Special Events in the Project Area

Event	Date
XTERRA Tahoe City	June 16, 2018
Lake Tahoe Mountain Bike Race	June 23, 2018
Burton Creek Trail Run	June 24, 2018
Tahoe Trail 100	July 14, 2018
Kiwanis Mountain Motivational Invitational[1]	September 8, 2017
Great Trail Race	October 7, 2018

1. The 2017 date for this middle school and high school cross country race is provided because the 2018 schedule is not yet available.

Source: Compiled by Ascent Environmental in 2018

While treatment activities would not be anticipated to interfere with use of all roads and trails within the project area throughout the summer and fall race season, the timing and use of existing roads and trails is not known at this time. Thus, it is assumed that treatment activities within the project area would preclude the use of trails by special events. This would be a **potentially significant** impact on recreation users during existing or planned recreation events.

Mitigation Measure REC-2: Coordination with special event organizers

The Conservancy shall coordinate project implementation with special event organizers, such as Big Blue Adventures and North Tahoe High School and any other organizers that seek license agreements for the use of Conservancy lands in the project area. The Conservancy shall notify special event organizers at the earliest possible date once the project implementation date and road and trail closure dates have been identified. The Conservancy, in coordination with event organizers, shall identify the trails and timing associated with planned special events. The Conservancy shall work with event organizers to determine whether events could proceed on the site (e.g., if they would occur outside periods of operations) or identify other locations for events on other nearby Conservancy or California State Parks land.

Level of Impact after Implementation of Mitigation Measures

Implementation of Mitigation Measure REC-2 would reduce the potential for adverse environmental effects on special events using the project area during project implementation. Mitigation Measure REC-2 would accomplish this by coordinating with event organizers to identify treatment dates and roads or trails that would be closed. If there is a potential conflict between a special event and implementation of the project during the 2019 and beyond race seasons, then the Conservancy would assist the event organizers in identifying opportunities for establishing the race course on other Conservancy or California State Parks lands. This impact would be reduced to a **less-than-significant impact with mitigation**.

CUMULATIVE IMPACTS

The geographic area for cumulative recreation impacts includes the North Shore of Lake Tahoe extending from Kings Beach to Tahoe City. Recreation demand in the Tahoe Region is met with a wide variety and amount of recreational facilities and operations. The cumulative projects identified on Table 3.18-1 would result in temporary, short-term closures of publicly-owned, forested land that provides hiking and biking opportunities on a continuous network of trails. Public access to these trails would be re-established after completion of forest thinning activities. The Dollar Creek Shared-Use Trail project would result in adding 2.2 miles of paved shared-use trail to the existing trail network that crosses the project area. The temporary, short-term restrictions on public access to the treatment areas would displace recreation users to other nearby trails; however, these projects are short-term and the increased demand on nearby trails or other recreation facilities would not be concentrated such that a substantial physical deterioration of these resources or subsequent adverse effects on the environment would occur. For these reasons, the project

when combined with other cumulative projects would result in a less-than-significant cumulative impact on recreation resources. The project would allow future public access to the project area for hiking, cross-country skiing, and biking upon completion of treatment activities and the duration of time in which the recreation users would be diverted to other recreation resources would be short-term. Therefore, the project would not result in a considerable contribution to a cumulative impact on recreation resources.

3.16 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

3.16.1 Setting

The proposed project is located in the Placer County portion of north Lake Tahoe, east of the SR 28/SR 89 intersection and west of the California/Nevada Stateline. Several roads provide access to the project area. Access to the southern portion of the project area and haul routes on local roads would utilize Cedarwood Drive, Village Road, and Fabian Way from SR 28 (see Exhibit 2-7 in Section 2.3.4). Access to the project area may also require crossing through TCPUD property near Tahoe XC. CTC currently has approval from TCPUD to access CTC property through this area. Haul routes for trucks transporting biomass and logs from the project area could include:

- SR 28 to SR 89 for hauling biomass to the Cabin Creek facility in Truckee, California;
- SR 28 to SR 267 to SR 89 for hauling biomass or logs to the Sierra Pacific Industries biomass and sawmill facility in Quincy, California;
- SR 28 to SR 89 to I-80 to SR 65 for hauling biomass or logs to the Sierra Pacific Industries biomass and sawmill facility in Lincoln, California; or

- SR 28 to SR 89 to I-80 to U.S. Highway 395 for transporting biomass to the Greenleaf Honey Lake facility in Wendel, CA.

There are currently no parking areas within the project area and no public parking areas are proposed. During implementation of the proposed project, employees would park along existing roads at the access points to the project area.

LAKE TAHOE REGIONAL PLAN

Chapter 3, Transportation Element, of the Regional Plan provides goals and policies that are intended to establish a safe, efficient, and integrated transportation system that provides quality mobility options for all sectors of the population, supports the region's economic base, enhances quality of life, and maximizes opportunities for environmental benefits. TRPA's Goals and Policies sets standards for vehicle level of service (LOS). A more detailed definition of LOS is provided below. The TRPA Goals and Policies require that peak period traffic flow not exceed the following:

- LOS C on rural recreational/scenic roads;
- LOS D on rural developed area roads;
- LOS D on urban developed area roads;
- LOS D for signalized intersections; and
- LOS E may be acceptable during peak periods in urban areas, not to exceed four hours per day.

These vehicle LOS standards may be exceeded when transit, bicycling, and walking facilities provide a mobility level that is similar to the mobility level that would be provided to the project-generated traffic in relation to overall traffic conditions on affected roadways. While the Tahoe Regional Planning Compact looks to "reduce the dependency on the private automobile" there are currently no adopted requirements or standards regarding the quality of service of other travel modes (i.e., transit, biking, or walking) that could potentially reduce the demand on the roadway system.

REGIONAL TRANSPORTATION PLAN

Linking Tahoe: Regional Transportation Plan (RTP) is Lake Tahoe's blueprint for a regional transportation system that enhances the quality of life in the Tahoe Region, promotes sustainability, and offers improved mobility options for people and goods (TRPA 2017). The 2017 Regional Transportation Plan builds on the transportation system planning efforts of the 2012 RTP by focusing on providing frequent and prioritized multimodal connections between town centers and neighborhoods and easy and convenient access to high demand recreation sites. The long-term vision of the RTP is of a well-connected, internal and external transportation system that meets the demands of all users. The RTP presents six goals that draw from the 2015 Intelligent Transportation Systems Strategic Plan and the 2016 Active Transportation Plan and reflect the requirements of the TRPA Bi-State Compact, federal and state transportation planning requirements and plans such as the California Transportation Plan, and public input. Each goal is accompanied by performance measures that are routinely assessed for efficacy and refined to ensure that TRPA continues to monitor and analyze the right data to inform decision making.

CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) is responsible for the operation and maintenance of the state highway system in California. Caltrans' goal for operation of Caltrans facilities in the Tahoe Region is LOS E for SR 89 and SR 28.

PLACER COUNTY TAHOE BASIN AREA PLAN

The Transportation Plan included in the Area Plan provides guidance to help achieve efficiency and economy in the transportation system, and to facilitate the planning required to maintain and expand the existing

transportation network. The Area Plan includes policies that promote non-automobile modes of transportation and implementing capital improvements that would reduce VMT. Additionally, the Area Plan establishes a policy that coincides with the LOS standards included in the RTP, with the exception of intersections and roadway segments within Town Center boundaries where LOS F would be acceptable.

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to traffic and transportation impacts. The Conservancy shall require forestry contractors to implement the following measure as part of their contracts:

- The forestry contractor shall implement temporary traffic safety measures that provide the public with adequate warning of potentially hazardous conditions associated with vehicle access and hauling. These measures shall include posting signs that meet the requirements of Manual on Uniform Traffic section 61.1.6B that warn of logging operations or truck crossings. Such signs shall be removed when no longer required. Prior to treatment activities, the Conservancy shall post signage in the neighborhood that identifies the timing and duration of operations associated with the project. Truck drivers shall be instructed to maintain safe driving speeds and be alert for the presence of pedestrians and children along neighborhood haul routes.

3.16.2 Discussion

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than significant. Implementation of the project would result in forest treatments anticipated to begin in summer/fall 2018 and would be conducted over the course of two field seasons. Completion of the project would occur by spring 2020. Treatment activities and hauling would occur up to 30 days each season. Work and haul trips would occur on weekdays during daylight hours (8:00 a.m. – 6:30 p.m.). Forest treatment-related trips would include employee trips as well as haul trips for moving equipment, materials, biomass, and timber. It is anticipated that forest treatments would result in no more than 16 employee trips per day (eight morning trips and eight evening trips), eight trips for hauling merchantable logs per day (four trips to the project area and four trips leaving the project area), and 12 trips for hauling chipped biomass fuel per day (six trips to the project area and six trips leaving the project area). No substantial short-term vehicle trip generation (more than 200 trips/day) would result from the project. The project would generate no additional traffic in the long-term. The Dollar Creek Shared-Use Path is outside of the project area; thus, the project would not interfere with bicycle or pedestrian circulation on that path. The potential effects on roads and trails within the project area are discussed above under item 3.15.3(a). The project would not substantially affect the performance of the circulation system and would therefore not conflict with any applicable transportation plans, ordinances, or policies. This impact would be less than significant.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than significant. See discussion under “a” above. The project would generate minimal vehicle trips. Therefore, the project would not conflict with a congestion management plan, including level of service standards and other standards for roadway/highway congestion management. The impact would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. Implementation of the proposed project would not affect air traffic patterns. Therefore, the proposed project would result in no impact.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No impact. The project area consists of undeveloped, forested land owned by a public agency and open to the public for passive recreation uses. The project area does not contain maintained public roadways. The project would not include any changes in roadway design and appropriate access to the project area would be provided by the existing roadway network. Access to the project area may also require crossing through TCPUD property near Tahoe XC. The Conservancy currently has approval from TCPUD to access Conservancy property through this area. In addition, the project does not include design features that would increase hazards such as sharp curves or dangerous intersections.

Up to an estimated eight employee vehicles could be parked in legally allowable locations along existing roads adjacent to the project area. These areas would likely be similar to parking locations already used by recreationists that access these trails. Because these trails would presumably be closed during treatment activities there would not be a need for available parking for recreation users.

The project would introduce large vehicles (i.e., chip vans and logging trucks) on local roads through neighborhoods as they access the project area and haul away material. Chip vans are medium-heavy duty trucks with a Gross Vehicle Weight Rating (GVWR) of greater than 26,000 pounds. Log trucks are heavy-duty vehicles with a manufacturer's GVWR greater than 33,000 pounds. Although these roads are not intended for use as a thoroughfare for chip vans and logging trucks, the presence of these trucks in the neighborhoods between the project area and SR 28 would be up to eight trips per day for logging trucks and 12 trips per day for chip vans and would occur on up to 30 days during each summer field season over two consecutive years. The presence of logging trucks and chip vans traveling on local roads could increase hazards in neighborhoods. However, the contractor would implement RPMs that would increase awareness of the presence of logging trucks and chip vans traveling between SR 28 and the project area by posting temporary signage that warns roadway travelers of hazardous or potentially hazardous conditions associated with the presence of logging operations and trucks. Posting signage in the neighborhood and the short-term, temporary duration of the project over two summer field seasons would reduce the potential hazards associated with the logging operations and trucks using local roads on their haul routes. Vehicles that exceed statutory limitations on the length, width, height, and weight of vehicles described in Division 15 of the California Vehicle Code are required to obtain a transportation permit from Placer County. According to Placer County, logging trucks and chip vans generally do not exceed the size limitations such that they would need to obtain a transportation permit. Additionally, in compliance with RPMs included in contract specifications, truck drivers would be instructed to maintain safe driving speeds and be alert for the presence of pedestrians and children as they drive through residential neighborhoods. For these reasons, the impact from the project related to hazards because of a design feature or incompatible use would be less than significant.

e) Result in inadequate emergency access?

Less than significant. Implementation of the project would primarily occur within the project area. Biomass and timber would be hauled off-site using local roads and highways to a biomass facility or a sawmill. These activities would not restrict access to or block any road outside of the project area. During treatment activities, in accordance with Resource Protection Measures included in contract specifications, the forestry contractor would implement a traffic control plan, which would include placing temporary traffic signs on roads near the project area that provide adequate warning of hazardous or potentially hazardous conditions associated with the treatment operations. Such signs could include messages that convey logging operations are in the vicinity, presence of log trucks, or locations where large trucks are entering the road. These issues along with the effects of the proposed project on emergency response and evacuation plans

are further discussed under item "g" under Section 3.8, "Hazards and Hazardous Materials." This impact would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No impact. Project implementation would not result in the removal of, or need for, alternative transportation facilities, such as bus turnouts or bicycle racks. Furthermore, there are no policies, plans, or programs supporting alternative transportation that apply to this project. For a discussion of impacts on recreational bicycling see Section 3.15, "Recreation." There would be no impact.

CUMULATIVE IMPACTS

The cumulative projects listed in Table 3.18-1 would generate a temporary, short-term increase in traffic on local roads throughout the project area, SR 28, SR 89, and SR 267. The cumulative projects would result in similar amounts of traffic to that generated by the project and would be dispersed throughout the project area and vicinity. Additionally, the timing of traffic generated by the cumulative projects would be dispersed throughout the day. Because the cumulative forest treatment projects identified in Table 3.18-1 would involve some burning and less hauling of biomass to an off-site biomass energy facility, these projects could result in fewer vehicle trips than the project. The project in combination with the cumulative projects would not generate substantial new vehicle trips that would affect traffic on these roadways such that there would be a conflict with an applicable plan, ordinance, or policy related to the performance of the circulation system or a congestion management plan. This would be a less-than-significant cumulative impact. Because no substantial vehicle trip generation would result from the project, the project would not result in a considerable contribution to conflicts with an applicable plan, ordinance or policy related to the performance of the circulation system or a congestion management plan.

The cumulative projects listed in Table 3.18-1 would occur within undeveloped, forested lands. These projects would not result in a substantial amount of traffic that would result in restricting emergency access or block roads. The project and the cumulative projects could generate traffic that use the same roads at the same time. However, the amount of traffic generated by these projects would not be a substantial increase and would be temporary and intermittent throughout the day, and thus, would not restrict emergency access or block roads. The cumulative impact on emergency access from the project in combination with the cumulative projects would be less than significant. Because the project would implement a traffic control plan, which would include placing temporary traffic signs on roads adjacent to the project area that provide a warning of hazardous or potentially hazardous conditions associated with the treatment operations and the project would not result in restricting or blocking emergency access, the project would not result in a considerable contribution to a temporary or permanent cumulative impact.

The project would not combine with other cumulative projects to result in a cumulative hazard on roadways in the neighborhoods adjacent to the project area because of a design feature or incompatible use. Additionally, the project would result in no impacts on air traffic patterns, public transit, bicycle facilities, or pedestrian facilities. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in a cumulative impact on transportation facilities. As described above, the project **would not make a considerable contribution** to a significant cumulative impact related to transportation and traffic.

3.17 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Tribal Cultural Resources.				
Would the project cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defines in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

3.17.1 Setting

The project area is located within the traditional territory of the Washoe Tribe of Nevada and California. It is peripheral to territory of the Southern Maidu/T'si-Akim Maidu, the Colfax-Todds Valley Miwok/Maidu, the Shingle Springs Band of Miwok Indians, and members of the United Auburn Indian Community. The Washoe language is a part of the Hokan linguistic stock. There are several subdivisions of Washoe; the Southern Washoe, Eastern Washoe, and Northern Washoe. The project area would have been used primarily by the Northern Washoe, whose territory also included the modern-day areas of Reno, Truckee, Loyalton, Sierra Valley, Long Valley, and Honey Lake. Unlike the Southern and Eastern Washoe, Lake Tahoe may have been less important economically to the Northern Washoe because they had several other sources of fish, although the project area was considered excellent for deer hunting.

The Washoe mobilized to various locations seasonally to take advantage of food resources as they became available. Seasonal movements were more restricted for the Washoe than for surrounding groups, however, because of an abundance of reliable resources within their territory. Despite these resources, they often made long trips to gather acorns, hunt, and trade with neighboring tribes. Several of the routes they developed would later be used as modern trail systems. Roots used for medicinal purposes and food, and seeds, berries, and marsh plants were collected in mountain valleys and on mountainsides during the summer. Hunting of large game, such as mountain sheep and deer, and small animal trapping occurred at higher elevations. Washoe groups tended to travel to lower elevations during colder seasons. Not only were plants used for medicine and food, but several plants were used to make baskets for both personal use and trade.

Lake Tahoe had great spiritual importance for the Washoe, who considered it the center of their world. The Washoe name for Lake Tahoe is *Da ow a ga*, meaning "edge of lake"; the lake's modern name is derived from a mispronunciation of this Washoe term. Several Washoe camps have been identified along the edge of Lake Tahoe, including one near the Lake Tahoe Dam named *daubayodu'E* ("running over") and another at

the outlet of the Truckee River named *debeyumewe* ("coming out"). The camp near the Tahoe outlet was destroyed by the construction of SR 89. Several camps used by the Washoe are now underwater.

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014, established a new class of resources under CEQA: "tribal cultural resources" (TCRs). AB 52, as provided in Public Resource Code (PRC) Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a Notice of Preparation (NOP) of an environmental impact report (EIR) or notice of intent to adopt a negative declaration or mitigated negative declaration.

AB 52 applies to those projects for which a lead agency had issued a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration on or after July 1, 2015. Therefore, the requirements of AB 52 apply and the Conservancy has initiated consultation with Tribes that have requested consultation. Correspondence in compliance with AB 52 is summarized in Table 3.17-1 below. In addition, the Native American Heritage Commission (NAHC) was contacted to obtain documentation of a search of the Sacred Lands Files in proximity to the project area. The Sacred Lands Files search was negative for tribal cultural resources in the project area.

Table 3.17-1 Summary of AB 52 Consultation

Native American Contact Name and Group	Date of Initial Letter	Date of Follow-up Phone Call/Email	Date(s) Reply Received	Comment
Marcus Gurrero, Cultural Resources Manager OR Gene Whitehouse, UAIC	September 11, 2017	N/A	September 20, 2017	UAIC expressed interest in participating in the archaeological survey, however, it had already been completed. On February 15, 2018, Mr. Gurrero deferred consultation over to the Washoe Tribe.
Darrel Cruz, Tribal Historic Preservation Officer, Washoe Tribe of Nevada and California	September 11, 2017	N/A	September 21, 2017	Mr. Cruz stated he was unaware of any resources on the project site, although resources had been discovered at the adjacent Burton Creek State Park. Mr. Cruz asked for survey results and to be informed of any inadvertent discoveries. Mr. Cruz did not request to initiate AB 52 consultation.

3.17.2 Applicable Resource Protection Measures

Resource protection measures are discussed in Section 2.3.6. They are intended to minimize impacts to tribal cultural resources. The Conservancy shall require forestry contractors to implement the following measures as part of their contracts:

- An appropriate, qualified archaeological surveyor, archaeologist, or cultural resource monitor shall be available either onsite and/or over the phone during project operations to prescribe additional protective measures, as needed, for any newly discovered sites. If evidence of previously undocumented historical/archaeological resources are found (e.g., shell, burned animal bone or rock, concentration of bottle glass or ceramics, etc.), the contractor shall immediately cease work in the vicinity of the find and contact the Conservancy's cultural resource designee. Work in the area shall not resume unless instructed by the Conservancy after identification and proper avoidance, preservation, or recovery measures are determined and implemented.

- If human remains are discovered during treatment activities, work shall be suspended in the area of the remains, and the contractor or cultural resource monitor shall notify the Placer County coroner and the

Native American Heritage Commission (NAHC) immediately, according to Section 5097.98 of the State PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the cultural resource monitor, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to prevent disturbance of additional human interments.

3.17.3 Discussion

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

Less than significant. In compliance with AB 52, the Conservancy sent letters to Native American Tribes as shown in Table 3.17-1. Consultation with the Tribes did not identify any tribal concerns or TCRs in the project area. As defined in PRC Section 21074, to be considered a TCR, a resource must be either:

1. listed or determined to be eligible for listing, on the national, state, or local register of historic resources, or

2. a resource that the lead agency determines, in its discretion and supported by substantial evidence, to treat as a tribal cultural resource pursuant to the criteria in PRC Section 50241(c). PRC Section 5024.1(c) provides that a resource meets criteria for listing as an historic resource in the California Register if any of the following apply:

   (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

   (2) Is associated with the lives of persons important in our past.

   (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

   (4) Has yielded, or may be likely to yield, information important in prehistory or history.

The project area is located within the traditional territory of the Northern Washoe, as described above. Lake Tahoe may have been less important economically to the Northern Washoe because they had several other sources of fish, although the project area was considered excellent for deer hunting; however, the project area is not known to have any special use. For these reasons, no areas within the project area meet any of the PRC 5024.1(c) criteria listed above. Therefore, the project would have no impact on TCRs as defined in PRC Section 21074.

CUMULATIVE IMPACTS

Because there would be no impact to TCRs, the project would not contribute to a cumulative impact.

3.18 UTILITIES AND SERVICE SYSTEMS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	**Utilities and Service Systems. Would the project:**				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

3.18.1 Setting

The project area contains undeveloped forest land that is not served by any utility services, including water supply, wastewater collection and treatment, septic systems, electricity, and natural gas. Utility infrastructure in the project area includes the Tahoe City Public Utility District (TCPUD) Upper Highlands water storage tank, located in the northwestern portion of the project area. The TCPUD Lower Highlands water storage tank is located adjacent to the southern boundary of the project area near Cedarwood Drive.

Stormwater run-off from the site drains naturally into on-site or nearby streams, which is described in more detail in Section 3.9, "Hydrology and Water Quality." There is no municipal or other formal drainage system.

The Western Regional Sanitary Landfill (WRSL) covers approximately 320 acres near the City of Lincoln. WRSL is a Class III non-hazardous landfill. Total capacity of the landfill is 25.7 million cubic yards, with remaining capacity to accept 14 million tons as of October 2005. The WRSL can accept up to 1,200 tons per day (City of Lincoln 2008). The WRSL could accept biochar from the Dollar Creek Forest Health and Biomass Project.

3.18.2 Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. No restrooms would be constructed as part of the proposed project and no wastewater would be generated. The proposed project would result in no impact related to wastewater treatment requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. See discussion under "a" above. The proposed project would require water for the purposes of washing off-road equipment. Water used for these purposes would not require treatment. The proposed project would result in no impact related to construction of new or expanded water or wastewater treatment facilities.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than significant. As described in Section 3.9, "Hydrology and Water Quality," drainage of stormwater runoff occurs naturally in the project area. As described in Section 2.3.6, "Resource Protection Measures," the project includes resource protection measures intended to minimize impacts to resources during and after treatment activities. These measures would include construction of erosion control measures and drainage features. Environmental impacts associated with implementing these resource protection measures related to storm water drainage are evaluated in this IS (see Section 3.5, "Biological Resources," Section 3.6, "Geology and Soils," Section 3.9, "Hydrology and Water Quality") and are determined to be less than significant with mitigation incorporated. The impacts on the environment from the storm water drainage resource protection measures included in the project would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than significant. Implementation of the project would conduct forest thinning to thin overstocked, forested areas. Biomass would be removed from the project area and hauled to a biomass facility and marketable logs would be hauled to a sawmill. Water usage as part of the project would be minimal and limited to washing equipment. No other permanent water service is required for implementation of the project. This temporary, short-term water need for the project would be considered a small incremental increase in overall demand and would be met using water trucks or with off-site sources for washing the equipment before entering the project area. Project water use would be met by existing sources. The project would not result in a permanent demand for water supply. The project could implement treatments near the Upper Highlands water storage tank. However, through coordination with TCPUD, access to the tank would be maintained during treatment activities. The Conservancy would notify TCPUD before completing any work within 100 feet of the Upper Highlands water storage tank. Although the Conservancy and the contractor would coordinate with TCPUD, the nature of the forest thinning that could occur near the water storage tank would not interfere with its continued operation. Additionally, implementation of the project could result in added wildfire protection for the storage tank. For these reasons, the project would result in a less-than-significant impact related to water supply.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No impact. See discussion under "a" above. The proposed project would result in no impact related to wastewater treatment capacity.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than significant. The proposed project would involve thinning trees and other woody vegetation and debris from overstocked, forested areas. Marketable logs would be hauled to a sawmill. Chipped biomass would be hauled to a biomass facility for use in electricity generation. Approximately 970 pounds of biochar would be generated by the project as a waste product of converting biomass from the project area into energy. If there is no market for use of biochar, then the biochar would be disposed of at the WRSL near the City of Lincoln. If biochar generated by the project is disposed of at WRSL, this would contribute approximately 2.87 cu. yd., or a small fraction of 1 percent of the remaining capacity of the WRSL. The WRSL has sufficient capacity to accept waste generated by the project. The project's impact on solid waste disposal would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less than significant. As described under "f" above, the proposed project involves very limited solid waste generation and would not conflict with federal, state, and local statutes or regulations related to solid waste. The impact would be less than significant.

CUMULATIVE IMPACTS

The project would result in no impacts on wastewater treatment requirements or the need for new or expanded wastewater treatment facilities. Therefore, the project would not combine with other cumulative projects identified in Table 3.18-1 to result in an increase in the need for new or expanded wastewater treatment facilities, which could cause significant adverse environmental impacts.

The cumulative projects listed in Table 3.18-1 would result in temporary, sporadic water demand for washing equipment similar to that described for the proposed project under "d" above. The cumulative project demand for water would be met using existing water supplies. These projects would not result in a permanent increase in demand for water. The project demand for water in combination with the cumulative projects demand for water would be minimal and temporary and would not result in a cumulative impact on water supply. Because the project demand for water would be minimal, the project would not result in a considerable contribution to a temporary or permanent cumulative impact on water supply.

The geographic area considered for cumulative impacts on solid waste services includes the service area for the WRSL. Total capacity of the landfill is 25.7 million cubic yards, with remaining capacity to accept 14 million tons as of October 2005. Some woody material thinned from the cumulative forest thinning projects (see Table 3.18-1) could be sent to a biomass facility, similar to the project. The generation of biochar that could be sent to the WRSL from each of the cumulative projects would be a small amount compared to the remaining capacity of the WRSL, similar to that generated from the project. The WRSL has sufficient capacity to meet the potential demands of these projects. The project in combination with other cumulative projects would result in a less-than-significant cumulative impact for solid waste disposal. Because the project would generate a very small portion of the total capacity of the WRSL, the project would not result in a considerable contribution to an increase in demand for solid waste disposal. As described above, the project **would not make a considerable contribution** to a significant cumulative impact related to utilities and service systems.

3.19 CUMULATIVE IMPACTS AND MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.19.1 Cumulative Setting

Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Where a project's incremental effect is not cumulatively considerable, the effect need not be considered significant, but the basis for concluding the incremental effect is not cumulatively considerable must be briefly described. Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Cumulative impacts are discussed in each resource section, following discussions of the project-specific impacts.

Probable existing and future projects considered in the cumulative analysis are in the project vicinity and have the possibility of interacting with the Dollar Creek Forest Health and Biomass Project to generate a cumulative impact (Table 3.18-1). This list of projects was considered in the analysis of the cumulative impacts for resource topics within the geographic scope of each resource topic (as described in the cumulative impact analysis within each resource section).

Table 3.18-1 Cumulative Projects List

Project Name	Location	Description	Project Status
Carnelian Fuels Reduction and Healthy Forest Restoration Project	Near the communities of Kings Beach, Tahoe Vista, Carnelian Bay, Cedar Flat, Lake Forest, and Tahoe City	Multi-agency efforts to reduce the risk of severe wildfire, improve forest health, and provide defensible space to neighboring communities. Includes, but is not limited to, forest thinning using mechanical, hand, and prescribed burning treatments on 3,232 acres.	Project implementation has begun and is anticipated to be completed within the next 7 to 10 years.
Fuels Reduction and Understory Burning, Burton Creek State Park, D.L. Bliss State Park, Ed Z'berg-Sugar Pine Point State Park, Emerald Bay State Park, Tahoe State Recreation Area, and Ward Creek Unit	Near the communities on the West Shore and North Shore of Lake Tahoe	California Department of Parks and Recreation to conduct fuels reduction activities on up to 2,012 acres in Burton Creek State Park, D.L. Bliss State Park, Ed Z'berg-Sugar Pine Point State Park, Emerald Bay State Park, Tahoe State Recreation Area, and Ward Creek Unit.	Project implementation has begun and is anticipated to be completed within 5 years of implementation.
Incline Fuels Reduction and Healthy Forest Restoration	Northeast side of the Lake Tahoe Basin, between the Nevada /California state line and the Lake Tahoe Nevada State Park	Fuels reduction activities on 3,917 acres.	Project implementation has begun and is anticipated to be completed within the next 10 years.
West Shore Wildland Urban Interface (WUI) Hazardous Fuel Reduction	West Shore of Lake Tahoe, between Emerald Bay and Burton Creek State Park	Proposes vegetation and fuels treatments to reduce stand densities and reduce fuel loading and continuity.	Expected implementation in summer 2016.
North Tahoe Fire Protection District fuel reduction program	Near the communities of Kings Beach, Tahoe Vista, Carnelian Bay, Dollar Point, Tahoe City, Sunnyside, Homewood, and a portion of Tahoma	Several small fuels reduction projects completed by the North Tahoe Fire Protection District on private land.	Ongoing
North Lake Tahoe Fire Protection District	Near the communities of Crystal Bay and Incline Village on the northeast shore of Lake Tahoe	Numerous small fuels reduction projects completed by the North Lake Tahoe Fire Protection District on private lands.	Ongoing
Dollar Creek Shared-Use Trail	Between the existing trail at Dollar Hill and the Cedar Flats neighborhood on the North Shore	2.2-mile long shared-use trail.	Environmental review complete; project approved; construction expected to occur in 2017.

Source: Compiled by Ascent Environmental 2017

3.19.2 Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less than significant with mitigation incorporated. As described in the biological resources analysis of this IS/MND (Section 3.4), implementation of the project, including mitigation measures included in this IS/MND, would result in less-than-significant impacts related to biological resources. Implementation of the forest

treatment activities would result in a forest structure that minimizes wildfire risk while enhancing the long-term habitat values of the sites for several species. With implementation of Mitigation Measures BIO-1, -2, -3, and -4 and RPMs, the project does not have the potential to substantially degrade fish or wildlife habitat, adversely affect wildlife populations, or restrict the range of special-status species.

As indicated in the cultural resources analysis of this IS (Section 3.5), implementation of Mitigation Measure Cult-1 and RPMs included in the project (see Section 2.3.6, "Resource Protection Measures") would minimize impacts on cultural resources, historic resources, or archaeological resources that could occur within the project area.

With implementation of the mitigation measures and RPMs described above, the project would not substantially degrade or reduce fish or wildlife habitat, adversely affect wildlife populations, or restrict the range of special-status species and would not eliminate important examples of the major periods of California history or prehistory. These impacts would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than significant with mitigation incorporated. The cumulative projects considered in combination with the Dollar Creek Forest Health and Biomass Project are listed in Table 3.18-1. These projects primarily consist of other similar forest health and fuels management projects that are anticipated to occur near the project area. The Dollar Creek Shared-Use Trail project is identified because a portion of the trail would be constructed to the east of the project area. Each of the resource sections provides an analysis of cumulative effects of the project when combined with these cumulative projects (see "Cumulative Impacts" in Section 3.1 through Section 3.17). Possible cumulative impacts related to hazards and hazardous materials, public services, traffic and transportation, and utilities would be minimized with implementation of RPMs incorporated into the project. Additionally, the cumulative impacts related to recreation, biological, and cultural resources would be minimized with implementation of RPMs incorporated into the project and with implementation of Mitigation Measures REC-1, BIO-1, BIO-2, BIO-3, BIO-4, and CULT-1. The cumulative impacts associated with the project would be less than significant with mitigation incorporated.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less than significant. Project-related environmental effects have been determined to pose a less-than-significant impact on humans. Possible impacts from fugitive dust (see Section 3.3, "Air Quality"), construction accidents, spills, and wildfire (see Section 3.8, "Hazards and Hazardous Materials"), construction-generated noise (see Section 3.12, "Noise"), though temporary in nature, have the potential to result in adverse effects on humans. These potential impacts would remain at a less-than-significant level with implementation of RPMs. Thus, potential adverse effects on human beings would be less than significant.

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