Calaveras County

Draft Environmental Impact Report

Medical Cannabis Cultivation and Commerce Ordinance Project

Prepared for:

Calaveras County
Planning Department
891 Mountain Ranch Road
San Andreas, CA 95249

Prepared by:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814

May 2017

Notice of Availability of a Draft Environmental Impact Report (Draft EIR) and Notice of Public Meeting to Provide Comments on the Draft EIR

The Draft Environmental Impact Report (DEIR) (SCH # 2016042019) for the proposed Medical Cannabis Cultivation and Commerce Ordinance is now available for review. Public comment on this document is invited for a 45-day period from May 1 through June 14, 2017. More information is provided below.

PROJECT LOCATION: Calaveras County is located in California's central Sierra Nevada region, ranging from low-elevation oak-covered foothills to high-elevation pine forests. The majority of land within the County falls within the regulatory jurisdiction of the County, with the exception of the City of Angels Camp, the only incorporated city within the county boundaries, and federal and state lands (approximate 13 percent of the land area of the County). Approximately 39,000 acres within the County are managed by the U.S. Forest Service and the Bureau of Land Management with an additional 6,000 acres, associated with the Calaveras Big Trees State Park, owned by the State of California.

PROJECT DESCRIPTION: The proposed project is an ordinance addressing regulations concerning the cultivation, manufacture, testing, distribution, transportation, and storage of medical marijuana within Calaveras County. An alternative that is being considered as a part of this EIR is to adopt a ban of cannabis cultivation and other associated commercial activities Regulations include permitting requirements to reduce conditions that create public nuisances by enacting restrictions on the location, type, and size of marijuana cultivation sites; the location, type, and size of commercial activities involving medical marijuana; and the use of screening, security, and other protective measures to more effectively control the adverse environmental impacts associated with medical marijuana cultivation and commercial activities. The ban alternative would prohibit cannabis cultivation in all zones and limit recreational/medical cultivation to six plants grown indoors.

SIGNIFICANT IMPACTS: The DEIR identifies significant impacts in the following California Environmental Quality Act (CEQA) environmental issue areas: aesthetics and visual resources; air quality; biological resources; cultural resources; greenhouse gas emissions; hydrology and water quality; transportation and circulation; and cumulative effects. As described in the DEIR many of these impacts can be fully mitigated but some cannot and would remain significant and unavoidable. Unavoidable impacts include effects on air quality (3.2-4), biological resources (3.3-3), transportation and circulation (3.9-2), and cumulative impacts to agriculture, greenhouse gas emissions, and transportation and circulation.

ADDRESS WHERE COPY OF DRAFT EIR IS AVAILABLE: The DEIR and proposed ordinance are now available for public review and download on the Calaveras County website at http://planning.calaverasgov.us/MedicalCannabis.aspx. Printed copies of the document are available for public review at the following locations during normal business hours:

Calaveras County
Planning Department
891 Mountain Ranch Road
San Andreas, CA 95249

San Andreas Central Library
1299 Gold Hunter Road
San Andreas, CA 95249

PUBLIC REVIEW PERIOD FOR THE DRAFT EIR: May 1, 2017 through June 14, 2017

All comments on the Draft EIR must be received by the County no later than 5:00pm on June 14, 2017 to be considered. Pursuant to Section 15088a of the CEQA Guidelines, late comments will be considered only at the County's discretion. Comments must be directed to:

Peter Maurer, Planning Director
Calaveras County Planning Department
891 Mountain Ranch Road
San Andreas, CA 95249
pmaurer@co.calaveras.ca.us

DRAFT EIR COMMENT MEETING: On May 22, 2017, starting at 6:00 PM, Calaveras County will conduct a public meeting to solicit input and comments from public agencies and the general public on the Draft EIR for the project. **This meeting will be held at the Board of Supervisors Chambers, located at 891 Mountain Ranch Road, San Andreas, CA**. There will be no transcription of oral comments at these meetings. Comments received will be summarized by staff for inclusion in the Final EIR. Those who wish to have their verbatim comments incorporated in the Final EIR must submit their comments in writing.

If you have any questions regarding this notice, please contact Peter Maurer at pmaurer@co.calaveras.ca.us. Meeting facilities are accessible to persons with disabilities.

Draft
Environmental Impact Report

For the

Calaveras County Medical Cannabis Cultivation and Commerce Ordinance Project

SCH# 2016042019

PREPARED FOR

Calaveras County
Planning Department
891 Mountain Ranch Road
San Andreas, CA 95249
Contact: Peter Maurer, Planning Director

PREPARED BY

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814
Contact: Chris Mundhenk, Project Manager

May 2017

TABLE OF CONTENTS

Appendices (provided on CD on the back cover)

Exhibits

Tables

This page intentionally left blank.

EXECUTIVE SUMMARY

INTRODUCTION

This Executive Summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123. As stated in the State CEQA Guidelines Section 15123(a), "[a]n EIR shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical." State CEQA Guidelines Section 15123(b) states, "[t]he summary shall identify: (1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; (2) areas of controversy known to the Lead Agency, including issues raised by agencies and the public; and (3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." Accordingly, this summary includes a brief synopsis of the proposed project and project alternatives, environmental impacts and mitigation, areas of known controversy, and issues to be resolved during environmental review. Table 1 (at the end of this section) presents the summary of potential environmental impacts, their level of significance without mitigation measures, the mitigation measures, and the levels of significance following the implementation of mitigation measures.

PROJECT COMPONENTS

Calaveras County is the Lead Agency for the proposed Medical Cannabis Cultivation and Commerce Ordinance (proposed ordinance or project). Calaveras County is located in California's central Sierra Nevada region, ranging from low-elevation oak-covered foothills to high-elevation pine forests. The Mokelumne, Stanislaus and Calaveras rivers flow through the County collecting water from rain and melting snow to fill the County's numerous lakes and reservoirs. The majority of land within the County falls within the regulatory jurisdiction of the County, with the exception of the City of Angels Camp, the only incorporated city within the county boundaries, and federal and state lands (approximate 13 percent of the land area of the County). Approximately 39,000 acres within the County are managed by the Bureau of Land Management with an additional 6,000 acres, associated with the Calaveras Big Trees State Park, owned by the State of California. The proposed ordinance addresses regulations concerning the cultivation, manufacture, testing, distribution, transportation, and storage of medical marijuana within Calaveras County. These regulations include permitting requirements to reduce conditions that create public nuisances by enacting restrictions on the location, type, and size of marijuana cultivation sites; the location, type, and size of commercial activities involving medical marijuana; and the use of screening, security, and other protective measures to more effectively control the adverse environmental impacts associated with medical marijuana cultivation and commercial activities. A detailed description of the project components and the anticipated compliance response is included in Chapter 2, "Project Description," of this document.

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Pursuant to State CEQA Guidelines Section 15382, a significant effect on the environment is defined as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance". Chapter 3 of this DEIR describes in detail the significant environmental impacts that would result from implementation of the proposed project. Chapters 4 and 5 provide a discussion of cumulative and growth-inducing impacts, respectively. Table 1 summarizes the environmental impacts and mitigation measures discussed in these chapters.

SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Detailed mitigation measures have been identified throughout Chapter 3 of this report that are intended to mitigate project effects to the extent feasible. All of these mitigation measures are identified in Table 2-1. After implementation of the recommended mitigation measures, which require modification of draft language within the proposed ordinance, most of the impacts associated with implementation of the project would be reduced to a less-than-significant level. The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project's impacts to a less-than-significant level.

Impact 3.2-4: Exposure of people to objectionable odors.

Implementation of the proposed ordinance would allow for construction and operation of cannabis-related activities, which would generate localized construction and operational odors associated with equipment operation, which could be odor sources to nearby residents. However, the cultivation and processing of cannabis generates odors associated with the plant itself, which during maturation can produce substantial odors. Setbacks are provided as part of the proposed ordinance; however, they do not preclude the generation of odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to a substantial number of people.

Impact 3.3-3: Degradation or removal of sensitive natural communities.

Implementation of the proposed project could result in disturbance or removal of natural land cover, through vegetation removal or grading which could result in the degradation or removal of sensitive natural communities.

Impact 3.8-2: Long-term increase in traffic.

Upon adding trips associated with the project to existing traffic levels, the project would cause the LOS on nine State highway segments and potentially other local roadways to degrade to unacceptable levels.

With respect to cumulative impacts, significant and unavoidable cumulative impacts would occur with respect to biological resources and transportation and circulation.

SUMMARY OF PROJECT ALTERNATIVES

State CEQA Guidelines Section 15126.6, as amended, mandates that all EIRs include a comparative evaluation of the proposed project with alternatives to the project that are capable of attaining most of the project's basic objectives, but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative. Chapter 6, "Alternatives," of this DEIR provides an analysis of the comparative impacts anticipated from three alternatives to the proposed project: 1) the No Project Alternative, which assumes no change in County Code would occur and that the Urgency Ordinance would expire; 2) the Ban on Commercial Cannabis Operations Alternative, which includes the adoption by the County Board of Supervisors of a countywide ban on cannabis-related activities unless otherwise expressly allowed by Proposition 64; 3) the Reduced Zoning Designations Alternative, which includes a reduction in the zoning designations that would allow commercial cannabis operations.

As discussed in Chapter 6, the Ban on Commercial Cannabis Operations Alternative is considered the environmentally superior alternative because it reduces several impacts associated with the proposed project and, unlike the No Project Alternative, Alternative 2 does not increase a significant impact related to transportation, odors, and biological resources. Also, Alternative 2 would reduce impacts to a greater extent than Alternative 3. Alternative 2 would also meet all of the project objectives.

AREAS OF CONTROVERSY

Section 15123 of the State CEQA Guidelines requires the summary section of a DEIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public. The following provides a summary of issues raised through scoping and comments on the Notice of Preparation (NOP) that could be considered controversial. The comment letters received on the NOP are included in Appendix A of this document.

- banning of cannabis cultivation and commerce activities within the County;
- odors;
- groundwater supplies for existing uses within the County as a result of increased demand for cannabis cultivation;
- transportation impacts on State highways and local roadways; and
- visual impacts, including those associated with lighting.

The DEIR addresses the above issues to the extent that substantial evidence permits, and to the extent that the issue is an environmental issue. However, it does not address impacts that are speculative and not reasonably foreseeable. All of the substantive environmental issues raised in the NOP comment letters have been addressed in this DEIR.

ISSUES TO BE RESOLVED IN THE EIR

Section 15123 of the State CEQA Guidelines requires the summary section of a DEIR to identify issues to be resolved in the EIR including the choice among alternatives and whether or how to mitigate the significant project effects. The DEIR includes an evaluation of potential environmental impacts resulting from the project (see Chapter 3, "Project Description," for details) and includes an evaluation of options/alternatives to project implementation that would lessen or reduce physical environmental impacts. The DEIR does not recommend one option over another. County decision-makers will determine the appropriate alternative based on the information included in this DEIR, the merits of each option, as well as other information that may be submitted as part of the administrative record.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.1 Aesthetics			
Impact 3.1-1: Have a substantial adverse effect on a scenic vista or substantially damage scenic resources. Potential commercial cannabis operations within the County that may occur under the proposed ordinance could alter localized views from nearby roadways and the Mokelumne Coast to Crest Trail. The limitations on size and location of cannabis grows, as well as the required screening under the proposed ordinance, would limit the potential for potential cannabis-related uses to alter or have substantial adverse effects on scenic vistas or other scenic resources.	S	**Mitigation Measure 3.1-1: Distance from designated scenic resources.** The County shall amend the proposed ordinance to require that any areas of cultivation be located at least one thousand (1,000) feet from any designated scenic resources, as determined by the County consistent with General Plan policies and implementation programs, the California Scenic Highways Program, or the National Scenic Byways Program.	LTS
Impact 3.1-2: Substantially degrade the existing visual character or quality of the project area. Cannabis grows permitted under the proposed ordinance would generally conform to existing land uses - commercial mixed light and outdoor use would occur in rural areas, personal cultivation would occur in screened areas of yards or in greenhouses, and indoor cultivation would occur in industrial or commercial areas. Therefore, although the County has a high quality rural character and views tend to be sensitive to changes in the landscape, implementation of the project would not substantially degrade the visual character or quality of the area.	LTS	No mitigation is required.	
Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect views. Exterior lights and lights associated with mixed-light and some indoor cultivation operations could create a source of substantial light or glare. Although the permit application process includes a provision for planning commission review of proposed lighting, the proposed ordinance does not establish standards to prevent light pollution that could adversely affect views.	S	**Mitigation Measure 3.1-3: Lighting standards.** The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240, and 17.95.310: All lighting provided in conjunction with facility security or cultivation activities shall be installed, directed, and shielded to confine all direct rays of light within the boundaries of such facilities.	LTS
3.2 Air Quality			
Impact 3.2-1: Short-term construction-generated emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$. Short-term, construction-generated emissions would not exceed CCAPCD-recommended mass emission thresholds for ROG, NO_X, PM_{10}, and by proxy, $PM_{2.5}$. Thus, short-term construction emissions of criteria area pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts in Calaveras County and the MCAB.	LTS	No mitigation is required.	
Impact 3.2-2: Long-term operational emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$. Operation of the anticipated number of grow sites in the county would result in peak	S	**Mitigation Measure 3.2-2: Prohibit the use of fossil fuel-powered outdoor power equipment at cannabis grow sites and processing facilities.** The County shall amend	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
emissions of criteria air pollutants and precursors during the harvest season. While mass emissions thresholds for other criteria air pollutants and precursors would not be exceeded, countywide harvest-related emissions of NO_X would exceed the mass emission threshold recommended by CCAPCD. Thus, operational emissions of NO_X, a precursor to regional ozone, could conflict with air quality planning efforts in the MCAB and contribute substantially to the nonattainment status of Calaveras County with respect to the NAAQS and CAAQS for ozone.		the proposed ordinance to include the following text in Sections 17.95.210 and 17.95.240: Refrain from using portable generators and off-road equipment that is powered by gasoline, diesel, or other fossil fuels to assist in the cultivation and harvesting of cannabis (operational activities). This requirement applies to all off-road equipment including, but not limited to, utility vehicles, tractors, and trimmers. Electric- or human-powered versions of these equipment can be used.	
Impact 3.2-3: Generation of greenhouse gas emissions. Construction and operation of grow sites permitted under the proposed ordinance would result in a net increase in GHG emissions. This would be a cumulatively considerable contribution to climate change.	S	Implement Mitigation Measure 3.2-2. **Mitigation Measure 3.2-3: Reduce GHG emissions associated with the cultivation, processing, and distribution of cannabis.** The County shall amend the proposed ordinance to include the following text under Section 17.95.200 1. Each applicant shall demonstrate a reduction in annual GHG emissions equivalent to a one-time offset of 17.2 metric tons of CO2e for construction-related emissions and an offset of 5.9 metric tons of CO2e/year for operational emissions or a reduction equivalent to the construction and annual operational GHG emissions associated with the specific cultivation site, as calculated using an ARB-accepted model/technique. The manner in which this is demonstrated may include, but is not limited to, the following in order of preference to reduce emissions: a. Photovoltaic panels on on-site structures. The extent to which solar is considered feasible shall be based on roof orientation, shade, and other factors. Each applicant shall submit a determination/evaluation of whether on-site solar is feasible or infeasible prepared by a qualified professional to the Planning Department; b. Provision of and documentation that the well pump used to supply irrigation water to the cannabis grow area is powered by photovoltaic cells; c. Documentation of attainment of offset credits of metric tons of carbon dioxide-equivalent associated with construction and operation of the new outdoor commercial grow site, including the loss of carbon-sequestering vegetation. The offset credit must be issued by a recognized and reputable carbon registry that validates that the offset credit is real, additional, quantifiable, and enforceable. Documentation demonstrating purchase of the annual offset credit must be provided to the Planning Department prior to the	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
		beginning of the first cannabis grow cycle during each calendar year. The County shall also amend the proposed ordinance to include the following text under Section 17.95.230: 1. Each applicant shall demonstrate a reduction in annual GHG emissions equivalent to a one-time offset of 11.3 metric tons of CO2e for construction-related emissions and an offset of 56.5 metric tons of CO2e/year for operational emissions or a reduction equivalent to the construction and annual operational GHG emissions associated with the specific cultivation site, as calculated using an ARB-accepted model/technique. The manner in which this is demonstrated may include, but is not limited to, the following in order of preference to reduce emissions: a. Photovoltaic panels on on-site structures. The extent to which solar is considered feasible shall be based on roof orientation, shade, and other factors. Each applicant shall submit a determination/evaluation of whether on-site solar is feasible or infeasible prepared by a qualified professional to the Planning Department; b. Provision of and documentation that the well pump used to supply irrigation water to the cannabis grow area is powered by photovoltaic cells; c. Documentation of attainment of offset credits of metric tons of carbon dioxide-equivalent associated with construction and operation of the new outdoor commercial grow site, including the loss of carbon-sequestering vegetation. The offset credit must be issued by a recognized and reputable carbon registry that validates that the offset credit is real, additional, quantifiable, and enforceable. Documentation demonstrating purchase of the annual offset credit must be provided to the Planning Department prior to the beginning of the first cannabis grow cycle during each calendar year.	
Impact 3.2-4: Exposure of people to objectionable odors. Implementation of the proposed ordinance would allow for construction and operation of cannabis-related activities, which would generate localized construction and operational odors associated with equipment operation, which could be odor sources to nearby residents. However, the cultivation and processing of cannabis generates odors associated with the plant itself, which during maturation can produce substantial odors. Setbacks are provided as part of the proposed ordinance; however, they do not preclude the generation of odorous emissions in such quantities as to cause detriment, nuisance, or	S	**Mitigation Measure 3.2-4a: Prohibit burning of cannabis and other vegetative material.** The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240, 17.95.270, and 17.95.310: The burning of excess plant material associated with the cultivation and processing of medical cannabis is prohibited. **Mitigation Measure 3.2-4b: Indoor cultivation odor control.** The County shall amend the proposed ordinance to reflect the following text in	SU

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
annoyance to a substantial number of people.		Sections 17.95.240: Install and maintain a filtered ventilation system which relies on activated carbon filtration, negative ion generation, and/or other odor control mechanism demonstrated to be effective in reducing cannabis odors. **Mitigation Measure 3.2-4c: increase setback requirement.** The County shall amend the proposed ordinance to reflect a setback of at least 75 feet from any property line instead of 30 feet within Sections 17.95.210, 17.95.240, 17.95.270, and 17.95.310.	
3.3 Biological Resources			
Impact 3.3-1: Impacts to special-status species. Implementation of the proposed ordinance may result in grading of natural habitat and tree and vegetation removal, which could directly and indirectly affect individual special-status species and/or their habitat.	PS	**Mitigation Measure 3.3-1: Minimum size of commercial cultivation activities.** The County shall amend the proposed ordinance in Sections 17.95.200 and 19.95.230 to require a minimum site size of 1,000 square feet.	LTS
Impact 3.3-2: Modification and/or loss of streamside habitat and fill or other disturbance of waters of the United States and/or state. Disturbance of natural land cover associated with development of commercial cannabis operations allowed under the proposed ordinance could result in the modification and/or loss of streamside habitat and fill or other disturbance of waters of the United States and/or state.	PS	Implement Mitigation Measure 3.3-1.	LTS
Impact 3.3-3: Degradation or removal of sensitive natural communities. Implementation of the proposed project could result in disturbance or removal of natural land cover, through vegetation removal or grading which could result in the degradation or removal of sensitive natural communities.	S	No feasible mitigation is available.	SU
Impact 3.3-4: Conflicts with any local policies protecting biological resources. Implementation of the proposed project could result in disturbance of natural habitat, which could conflict with the policies of the Calaveras County General Plan.	S	Implement Mitigation Measure 3.3-1.	LTS
Impact 3.3-5: Disturbance or loss of wildlife migratory corridors. Development of indoor or outdoor grows within or in proximity to natural environments would alter the vegetation that wildlife use as cover; potentially resulting in disturbance or loss of wildlife migratory corridors.	PS	Implement Mitigation Measure 3.3-1.	LTS
3.4 Archaeological, Historical, and Tribal Cultural Resources			
Impact 3.4-1: Change in the significance of an historical resource. Commercial cannabis operations associated with the proposed ordinance could occur on	PS	Implement Mitigation Measure 3.3-1.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
undeveloped lands and/or near historic resources, and would be required to comply with the Central Valley RWQCB Order R5-2015–0113, Waste Discharge Requirements General Order for Discharge of Waste Associated with Medicinal Cannabis Cultivation Activities which requires demonstration "that all potential impacts to cultural resources will be appropriately addressed and mitigated." However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 square feet (sf). Therefore, if areas of commercial cultivation are less than 1000 sf, the proposed ordinance could affect historic resources.			
Impact 3.4-2: Disturb unique archaeological resources. Commercial cannabis operations associated with the proposed ordinance could occur on properties that contain known or unknown archaeological resources and ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. Future cannabis-related sites would be required to comply with RWQCB's Order R5-2015–0113 which states "that all potential impacts to cultural resources will be appropriately addressed and mitigated." However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 sf Therefore, if areas of commercial cultivation are less than 1000 sf, the proposed ordinance could affect unique archaeological resources.	PS	Implement Mitigation Measure 3.3-1.	LTS
Impact 3.4-3: Accidental discovery of human remains. Previously undiscovered human remains could be discovered when soils are disturbed during construction of cultivation and processing sites under the proposed ordinance. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would make this impact less than significant.	LTS	No mitigation measures are necessary.	LTS
Impact 3.4-4: Disturb a unique paleontological resource. It is unlikely that paleontological resources would be disturbed because of the types of soil formations that underlay the county and the limited soil disturbance associated with the proposed ordinance.	LTS	No mitigation measures are necessary.	LTS
Impact 3.4-5: Change in the significance of a tribal cultural resource. Consultation with the Calaveras Mi-Wuk tribe, the Ione Band of Miwok, and the Buena Vista Rancheria of Me-Wuk has resulted in no resources identified as TCRs as described under AB 52. Because no resources meet the criteria for a TCR under PRC Section 21074, this impact would less than significant.	LTS	No mitigation measures are necessary.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
3.5 Hydrology and Water Quality			
Impact 3.5-1: Construction water quality impacts. Development of new cannabis cultivation or commercial cannabis sites would require ground-disturbing activities that could result in erosion and sedimentation, leading to degradation of water quality.	S	Implement Mitigation Measure 3.3-1.	LTS
Impact 3.5-2: Operational water quality impacts. Existing and new cannabis cultivation and commercial cannabis facilities have the potential to modify surface drainage and flows in such a manner that increased sedimentation and erosion could take place, leading to water quality degradation. The long-term operational use of unregulated pesticides, fertilizers, and other chemicals can also have a negative effect on water quality and ultimately affect the health and sustainability of organisms that rely on high quality waters.	S	Implement Mitigation Measure 3.3-1.	LTS
Impact 3.5-3: Groundwater supply impacts. Cannabis is a water-intensive crop, the cultivation of which has the potential to consume vast amounts of water from local sources, and exceed groundwater supply and recharge. Transition to groundwater supply sources could exceed the capacity of local groundwater aquifers to provide adequate supply. This could result in the long-term drawdown of groundwater resources and would be a significant impact.	S	**Mitigation Measure 3.5-3: Groundwater monitoring requirements.** The county shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, and 19.95.240: Applicants with a permitted well water supply source shall prepare and implement a well-monitoring program. The program shall, at a minimum, include short-duration pumping tests to assess production capacity and water levels. Monitoring shall be carried out at the water supply source well and any nearby wells that could be affected by consumption of water at the source well, as determined by a qualified well driller, hydrologist, or hydrogeologist approved by the county. The first test shall be used to determine connectivity of the source supply well to other nearby wells. These tests shall be completed monthly during the months of August, September, and October and preceded by a minimum of eight (8) hours of non-operation to maintain a static depth to water measurement. Results of testing shall be provided to the County Planning Department and Department of Environmental Health Department for review and approval. If continuous decline of water levels is observed for a period of three (3) consecutive years in the source water supply well, an alternative water source shall be procured until well water levels have recovered to within ten (10) percent of pre-drawdown levels.	LTS
Impact 3.5-4: Surface drainage impacts on onsite and offsite flooding. The construction of new cannabis facilities, including commercial structures or lined water detention basins, could alter local drainage characteristics of individual sites and influence onsite or offsite flooding. Compliance with regulations relating to grading and drainage would	PS	Implement Mitigation Measure 3.3-1.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
limit these effects, re however only cannabis-related activities in excess of 1,000 sf of disturbance would be required to comply with both local ordinances and the Central Valley RWQCB order..			
Impact 3.5-5: Surface drainage impacts on riparian environments. While the majority of water supplies used by uses permitted under the ordinance are anticipated to be groundwater, some surface water supplies from nearby streams and rivers could be used, which could have impacts on the level and availability of surface water supplies downstream. However, the proposed ordinance requires demonstration of available surface water rights and demonstration that projected needs are within allowable diversion limitations as determined by SWRCB Division of Water Rights. Through compliance with applicable regulations, impacts would be less than significant.	LTS	No mitigation is required.	LTS
3.6 Land Use and Planning			
Impact 3.6-1: Potential for physical division of an established community. The cultivation, manufacture, testing, distribution, transportation, and storage of medical cannabis within Calaveras County could create land use conflicts, including potential physical division of established communities, if not regulated properly. The proposed ordinance contains permitting requirements that would reduce conditions that create public nuisances by enacting restrictions on the location, type, and size of marijuana cultivation sites and commercial activities involving medical marijuana in Calaveras County, as well as other permitting requirements such as adequate screening, security, and other protective measures. Because the project would include the above permitting requirements, land use conflicts, including potential division of established communities, would not occur. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.6-2: Conflict with relevant plans, policies, and zoning adopted for the purpose of avoiding or mitigating an environmental effect. The Calaveras County General Plan (1996) contains policies that protect natural resource lands, direct growth on community development lands, and promote land use compatibility. The proposed ordinance would amend the Calaveras County Code (specifically, Chapter 17.95, "Medical Cannabis Cultivation and Commerce," would be added), and would be consistent with General Plan policies and principles. Further, the proposed ordinance contains permitting requirements, providing a mechanism for the County to ensure compliance with relevant plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, this impact would be less than	LTS	No mitigation is required.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
significant.			
3.7 Noise			
Impact 3.7-1: Short-term, construction-related noise. Construction of new outdoor and indoor grow sites would involve the use of heavy off-road equipment that would increase noise levels at nearby land uses. All construction-generated noise would be temporary and exempt from noise standards in the County's Noise Ordinance because it would only occur during the daytime hours. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-2: Long-term non-transportation operational noise. The growing, harvesting, and processing of cannabis would generate certain noise levels as a result of the use of specialized, mechanized equipment, as determined necessary for individual sites. However, the use of mechanized equipment would be temporary and periodic in nature and adjacent land uses would not be exposed to noise levels that exceed noise standards in the County's Noise Ordinance. In addition, the 1,000-foot setback requirement in the proposed ordinance would prevent sensitive uses, as defined by the proposed ordinance, from being exposed to excessive noise levels during each harvest. Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-3: Long-term traffic noise levels. The approval of new commercial grow sites in the county could result in increased traffic volumes on associated roadways and highways in the county, particularly during harvest season when the need for workers is highest. However, increased traffic volumes are unlikely to result in a noticeable increase in traffic noise (i.e., 3 dB or greater). Therefore, this impact would be less than significant.	LTS	No mitigation is required.	LTS
3.8 Population and Housing			
Impact 3.8-1: Increased employment opportunities and housing demand from operation. Implementation of the proposed ordinance would allow for the operation of new cannabis-related uses within the County that would potentially increase temporary/periodic employment opportunities within the County. However, the project would not generate substantial new employment that would induce substantial population growth such that there would be a substantial demand for new housing that could not be met by existing supply in the County and surrounding areas or by planned housing development due to the temporary nature of the employment demand and	LTS	No mitigation is required.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
similar employee bases in the region.			
3.9 Transportation and Circulation			
Impact 3.9-1: Construction-related increase in traffic. Construction of new outdoor and indoor commercial grow sites would result in an increase in vehicular trips associated with construction workers traveling to and from construction sites. However, the increase in trips associated with construction at individual commercial grow sites would be minimal, dispersed throughout the larger roadway network serving the County, and staggered over an extended period of time. Additionally, the project does not include any changes to existing or planned transportation facilities.	LTS	No mitigation is required.	LTS
Impact 3.9-2: Long-term increase in traffic. Upon adding trips associated with the project to existing traffic levels, the project would cause the LOS on nine State highway segments and potentially other local roadways to degrade to unacceptable levels.	S	**Mitigation Measure 3.9-2: Participation in County Road Impact Mitigation Fee Program.** The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240 and 17.95.310: Participate in the County's approved Road Impact Mitigation (RIM) Fee Program prior to initiation of operational activities. Fees assessed for each cannabis-related activity will be based on the potential one-way employee trips that could be generated per day during peak operations and determined by the Calaveras County Public Works Department.	SU
Impact 3.9-3: Potential for increased emergency response times or inadequate emergency access. Access to individual grow sites covered by this ordinance would be provided via existing local roadways and access driveways previously reviewed by, and in compliance with design and safety standards set forth by the responsible agency. Additionally, development review of any on-site ancillary structures would be reviewed by the Tuolumne/Calaveras Ranger Unit of the California Department of Forestry and Fire Protection, as well as the local fire jurisdiction. Therefore, emergency access would be maintained and any construction triggering development review would be subject to the applicable design and safety standards and review for emergency access and fire safety.	LTS	No mitigation is required.	LTS

LTS = Less than significant, PS = Potentially significant, S = Significant, SU = Significant and unavoidable

1 INTRODUCTION

This draft environmental impact report (DEIR) evaluates the potential environmental impacts of the proposed Medical Cannabis Cultivation and Commerce Ordinance (proposed ordinance or project). This DEIR has been prepared under Calaveras County's (County) direction in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000-21177) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Sections 15000-15387) ("CEQA Guidelines"). The County is the lead agency for consideration of this EIR and potential project approval.

Calaveras County has an existing ordinance regulating medical cannabis dispensaries, but does not have a regulatory framework for cultivation and other cannabis-related activities. In recognition of the fact that there are numerous growers currently operating in the County without any express guidance from the County Code, the Board of Supervisors identified a need to expressly regulate this industry within unincorporated areas of the County. In addition, the County planned to permit and regulate the other commercial activities associated with medical cannabis, including its manufacture, transport, and distribution. A copy of the draft ordinance is available on the Planning Department's website at http://planning.calaverasgov.us.

Subsequent to initiation of preparation of this DEIR, the Board of Supervisors directed County Counsel and the Planning Department to prepare an ordinance banning the cultivation of and other commercial activities related to cannabis to the extent allowable under state law. This EIR evaluates the ban as an alternative to the proposed ordinance and can be used to serve as the appropriate CEQA document for adoption of an ordinance banning said uses in the unincorporated areas of the County. A copy of the draft ordinance banning cannabis cultivation and other commercial activity is also available on the Planning Department's website at http://planning.calaverasgov.us.

1.1 PURPOSE AND INTENDED USES OF THIS DEIR

CEQA requires that public agencies consider the potentially significant adverse environmental effects of projects over which they have discretionary approval authority before taking action on those projects (PRC Section 21000 et seq.). CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant adverse environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts (i.e., significant effects that cannot be feasibly mitigated to less-than-significant levels), the project can still be approved, but the lead agency's decision-maker, in this case the Calaveras County Board of Supervisors, must prepare findings and issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that they believe, based on substantial evidence, make those significant effects acceptable (PRC Section 21002, CCR Section 15093).

According to CCR Section 15064(f)(1), preparation of an EIR is required whenever a project may result in a significant adverse environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

In accordance with CCR Section 15168, this document is a program EIR that examines the environmental impacts of a series of actions (e.g. issuing administrative use permits or zoning clearance certificates.) This type of EIR focuses on the changes in the environment that would result from the issuance of rules, regulations, plans, or other general criteria attributable to a continuing program. In accordance with CCR

Section 15168, a program EIR must examine the environmental effects of the entire program and potential actions carried out as part of the program, including construction and operational activities.

Because they have the principal authority over approval of the project, Calaveras County is the lead agency, as defined by CEQA, for this EIR. Other public agencies that may have jurisdiction over the project and subsequent actions related to the project are listed below in Section 1.3, "Agency Roles and Responsibilities."

1.2 SCOPE OF ENVIRONMENTAL ANALYSIS

Pursuant to CEQA and the CEQA Guidelines, a lead agency shall focus an EIR's discussion on significant environmental effects and may limit discussion on other effects to brief explanations about why they are not significant (PRC Section 21002.1, CCR Section 15128). A determination of which impacts would be potentially significant was made for this project based on review of comments received as part of the public scoping process (Appendix A) as well as additional research and analysis of relevant project data during preparation of this DEIR.

The County has determined that the project has the potential to result in significant environmental impacts on the following resources, which are addressed in detail in this DEIR:

- Aesthetics
- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation and Circulation

1.2.1 Effects Found Not to be Significant

CEQA allows a lead agency to limit the detail of discussion of the environmental effects that are not considered potentially significant (PRC Section 21100, CCR Sections 15126.2[a] and 15128). Based on a review of comments received as part of the public scoping process (Appendix A) as well as additional research and analysis of relevant project data during preparation of this DEIR, the following were identified as resources that would not experience any significant environmental impacts from the project. Accordingly, these resources are not addressed further in this DEIR, but are identified below with a brief explanation as to why impacts to each resource are not anticipated, as required by CEQA.

- Agriculture and Forestry Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Mineral Resources
- Public Services
- Recreation
- Utilities and Service Systems

AGRICULTURE AND FORESTRY RESOURCES

Project implementation would allow for commercial cultivation to occur on agricultural land but would not preclude the potential for cultivation with traditional agricultural crops at a later date. Further, the County does not have any mapped areas by the California Department of Conservation (DOC) as "important farmland" (prime, farmland of Statewide importance, or unique farmland).

Based on registration applications for commercial cannabis cultivation registration, applications have been received for 226 acres of cultivation. Although much of this is likely to be denied (based on preliminary processing records), there is also an equal amount of land area devoted to cannabis cultivation that is unregistered (meaning that either no application was received for this acreage or that the application was denied or rejected but cultivation activity continues), and an ordinance may allow additional land to be

placed in regulated cultivation. For the sake of analysis, doubling the acreage is a fair estimate. This would result in a similar amount of land being dedicated to regulated cannabis cultivation as the 900 acres of grapes and 868 acres of nuts currently grown in the County (Calaveras County 2015 Crop Report). The County has 269,088 acres of land zoned for agricultural use (RA, A1 and AP zones). At 452 acres of potential cannabis cultivation, this would amount to 0.12% of the total agricultural land available in the County. A change this small would be considered less than significant. In addition, since much of the cannabis is grown in containers, many cultivation sites are in areas that do not have traditional agricultural potential, such as on steeper slopes and in areas where the vegetation is primarily chaparral, and where the soil type would not support traditional agricultural pursuits.

Timber has been removed and would likely continue to be removed if new cannabis cultivation is permitted in the future. Based on vegetation maps prepared by the California Department of Forestry and Fire Protection there are approximately 291,000 acres of forest land suitable for timber production in the County. Much of this is National Forest or other public land (45,895 acres, 15.8%) or in Timber Production Zone (60,575 acres, 20.8%) and is precluded from cannabis cultivation. The remaining land has the potential under the draft ordinance for cultivation. The parcels on which cultivation applications were filed under the urgency ordinance that are in timberland cover 10,112 acres or 3.5% of the total land within the County suitable for timber production. However, not more than twenty-five percent of any one parcel may be cultivated. Assuming that adoption of a regulatory ordinance permitting new cannabis cultivation might double the amount of cannabis cultivation in the County, the potential loss of timberland would be approximately 5,000 acres, or 1.7% of the total timber resources in the County. As a result, significant impacts to forestry resources are not anticipated.

GEOLOGY AND SOILS

Any development allowed under the ordinance would be subject to County grading and erosion control standards (pursuant to Calaveras County Code Title 13, Chapter 13.01 and Title 15, Chapter 15.05) and the Calaveras County Grading, Drainage, and Erosion Control Manual, which require implementation of best management practices (BMPs) on-site. Additionally, any operations in excess of 1,000 sf would be required to comply with the Central Valley Regional Water Quality Control Board's (RWQCB's) Order R5-2015-0113 (Waste Discharge Requirements General Order for Discharges of Waste Associated with Medical Cannabis Cultivation Activities), which also requires implementation of BMPs including cultivation on gentle slopes (<30% grade), not disturbing any areas with unstable soils, and installation of erosion control measures. As a result, the potential for exposure to geologic hazards and substantial erosion as a result of project implementation would not be expected.

The ordinance proposes that all new cultivation sites, and cultivation sites previously registered, will be required to have a single-family residence on the property or on an adjacent property under common ownership. While the majority of existing properties with cannabis cultivation on-site have existing residential structures associated with them, it is possible that property owners may construct a residence onsite in order to allow for cannabis cultivation pursuant to the proposed ordinance. The construction of homes is a use permitted by right and exempt from CEQA but must comply with the aforementioned County grading, erosion control, and environmental health standards, including proper installation, monitoring, and maintenance of septic systems as outlined in the County's Rules and Regulations for Onsite Wastewater Treatment Systems (Calaveras County 2012). As a result, significant effects to geology and soils are not anticipated from adoption of the proposed ordinance.

HAZARDS AND HAZARDOUS MATERIALS

The County Environmental Management Agency conducts inspections of every cultivation site for hazardous materials storage as well as any hazardous waste disposal. This is done through delegation by CalEPA to the County as a Certified Unified Program Agency (CUPA). The County is responsible through the CUPA program for inspection of all facilities that store hazardous materials or handle hazardous wastes. Regulation of cannabis cultivation and commerce sites provides for fees to support the CUPA program. Based on

completed inspections, few if any cultivators exceed the thresholds for development of a business plan for the handling of hazardous substances. Any cultivation sites in excess of 1,000 sf, would be subject to the Central Valley RWQCB's Order R5-2015-0113 (Waste Discharge Requirements General Order for Discharges of Waste Associated with Medical Cannabis Cultivation Activities) which requires implementation of best management practices that would ensure that chemicals related to fertilizers and pesticides do not travel off-site and are properly stored and maintained. Further, any development related to cannabis cultivation and processing would be required to adhere to the Department of Pesticide Regulations Legal Pest Management Practices guidance and inspection by the County's Agricultural Department for proper use and storage of pesticides and fertilizers such that the release or exposure of people to hazards and hazardous materials would not occur. In addition, no hazardous wastes have been identified with cultivation activities. Manufacturing and other commercial cannabis processing activities proposed under the ordinance could require greater storage volume or generate wastes, but those would also be required to comply with the aforementioned regulations and programs and, in the event of new construction, would require discretionary approval by the County. Because the type, size, and location of these activities would be dependent on the number of contributing commercial cultivation sites and their individual outputs, specific impacts related to these activities cannot be reasonably foreseen at this time. However, any new construction related to such activities would require project-specific analysis, and the impacts reduced through implementation of the regulatory programs outlined above.

MINERAL RESOURCES

Development under the project would permit the grading of up to a half-acre of land for commercial cultivation purposes. This grading would not result in the loss of availability of state or locally important mineral resources. Development of commercial processing/manufacture facilities are anticipated to occur in areas that have already been developed or are identified for future commercial or industrial uses. As a result, implementation of the project is not anticipated to result in the loss of availability of or preclude the recovery of mineral resources within the County.

PUBLIC SERVICES

The project, by design, would afford additional funding and resources for the County Sheriff's Department to assist in the management and enforcement of regulations related to cannabis cultivation that are already occurring within the County. Per the County Sheriff's Department, additional funding for resources (e.g., deputies) are needed within the County with or without the proposed ordinance. The Sheriff's Department, as of the date of release of this EIR, has 4 positions open and anticipates a total of 20 are needed (Dibasilio, pers. comm., 2017). It is anticipated that the additional funding afforded by the project would be used for fulfilling the Sheriff's Department's need for additional deputies and staff, partly to monitor cannabis cultivation and commerce, but additional facilities would not be required as a result of the project.

In addition to law enforcement, other services may experience an increase in demand, including fire protection, schools, and other governmental services. Each cultivation site is required to maintain a residence. Where no residence exists, a new one must be constructed with associated impact fees for fire, schools and other services. Increases in property tax and Measure C tax revenue would be expected to offset the costs of the increase in services. Sales tax and increase valuation of property associated with manufacturing and other commercial activities would also provide additional local revenue.

RECREATION

Implementation of the project would not directly result in increased usage of recreational facilities. In addition, as noted above, the project would not result in a substantial increase in countywide population such that indirect impacts to recreational facilities could occur. Furthermore, the project requires that any development related to the project adhere to a 1,000-foot buffer from any sensitive uses, including recreational facilities, such that impacts to recreational facilities are not anticipated.

UTILITIES AND SERVICE SYSTEMS

Under the project, the majority of development is anticipated to occur in rural areas that do not receive public water and sewer services. To receive local approval under the project, proposals would be required to pursue and achieve compliance with existing regulations and permitting requirements (e.g., Calaveras County Code Title 8, Chapter 8.20 [Well Construction and Destruction], Calaveras County Rules and Regulations for Onsite Wastewater Treatment Systems, and Calaveras County Code Title 8, Chapter 8.12 [Solid Waste Collection and Disposal]) which govern many attendant activities, including: water demand/use, onsite sewage disposal, and disposal of solid waste, respectively. For a discussion of potential impacts related to increased runoff and to groundwater supplies resulting from increased water demand/use within the County, refer to Section 3.5, "Hydrology and Water Quality." Coordination and oversight by responsible agencies, including the Environmental Health Division and RWQCB, regarding compliance with the wastewater standards will ensure that wastewater supplies related to cannabis-related activities are appropriately collected, handled, and treated. This may involve the installation of additional/expanded septic systems depending on the size/demand of the activity, and would be subject to the County's development standards for onsite wastewater treatment systems, as amended through August 14, 2012. With respect to solid waste, Calaveras County Code Title 8, Chapter 8.20 requires the property owner/occupant to appropriately collect, store, and arrange for the disposal of solid waste generated on-site. In addition, for activities in excess of 1,000 sf, the RWQCB order includes conditions requiring that solid waste (i.e., trash) be handled in accordance with state and local laws. The result may result in an incremental increase in materials deposited at local transfer stations and to landfills, but this is not expected to occur on a scale that would impact the capacity of landfills accepting waste. As a result, impacts related to utilities are not anticipated to be significant.

1.3 AGENCY ROLES AND RESPONSIBILITIES

This DEIR will be used by the County and CEQA responsible and trustee agencies to ensure that they have met their requirements under CEQA before deciding whether to approve or permit project elements over which they have jurisdiction. It may also be used by other state and local agencies, which may have an interest in resources that could be affected by the project, or that have jurisdiction over portions of the project.

1.3.1 Lead Agency

Calaveras County is the lead agency for CEQA compliance.

1.3.2 Responsible and Trustee Agencies

Under CEQA, a responsible agency is a public agency, other than the lead agency, that has responsibility to carry out or approve a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070).

The following agencies may serve as responsible and trustee agencies for the project:

- U.S. Army Corps of Engineers
- California Department of Fish and Wildlife, Region 2
- California Department of Food and Agriculture
- California Department of Forestry and Fire Protection
- California Department of Parks and Recreation
- California Department of Pesticide Regulation
- California Department of Transportation, District 10
- California Department of Water Resources

- Calaveras County Air Pollution Control District
- Central Valley RWQCB, Region 5 (Sacramento)

1.4 CEQA PUBLIC REVIEW PROCESS

1.4.1 Notice of Preparation

In accordance with PRC Section 21092 and CCR Section 15082, the County issued a notice of preparation (NOP) on April 7, 2016 to inform agencies and the general public that an EIR was being prepared and to invite comments on the scope and content of the document (Appendix A). The NOP was submitted to the State Clearinghouse; posted on the County's website (http://planning.calaverasgov.us); posted with the Calaveras County Clerk; and made available at the Calaveras County Planning Department as well as the San Andreas Central Library. In addition, the NOP was distributed directly to public agencies (including potential responsible and trustee agencies), interested parties, and individuals who had previously requested such notices. Finally, a press release was issued by the County on April 5, 2016. The NOP was circulated through May 6, 2016 (a 30-day review period).

In accordance with PRC Section 21083.9 and CCR Section 15082(c), a noticed scoping meeting for the EIR occurred on July 20, 2016 at the Calaveras County Board of Supervisors Chambers in San Andreas, CA.

The purpose of a NOP is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (CCR Section 15082[b]). Comments submitted in response to the NOP are used by the lead agency to identify broad topics to be addressed in the EIR. All comments on environmental issues received during the NOP public comment period are considered and addressed in this DEIR. Appendix A contains the comment letters submitted during the NOP public comment period.

1.4.2 Public Review of this DEIR

This DEIR is being circulated for public review and comment for a period of 45 days, from **May 1 to June 14, 2017**.

A public hearing will be held on **May 22, 2017** to receive input from agencies and the public on the DEIR.

During the public comment period, written comments from the general public as well as organizations and agencies on the DEIR's accuracy and completeness may be submitted to the lead agency. Because of time limits mandated by State law, comments should be provided no later than 4 p.m. on June 14, 2017. Please send all comments to:

> Calaveras County Planning Department
> Attention: Peter Maurer, Planning Director, 891 Mountain Ranch Road, San Andreas, CA 95249
> Telephone: (209) 754-6394 Fax: (209) 754-6540 Email: PMaurer@co.calaveras.ca.us

Agencies that will need to use the EIR when considering permits or other approvals for the project should provide the name of a contact person, phone number, and email address. Comments provided by email should include the name and physical address of the commenter.

Copies of this DEIR are available for public review at the following locations:

- Calaveras County Planning Department at 891 Mountain Ranch Road, San Andreas, CA, and
- San Andreas Central Library at 1299 Gold Hunter Road, San Andreas, CA.

The DEIR is also available for public review online at: http://planning.calaverasgov.us.

1.4.3 Final EIR

Following public review of the DEIR, a Final EIR (FEIR) will be prepared that will include both written and oral comments on the DEIR received during the public review period, responses to those comments, and any revisions to the DEIR. The DEIR and the FEIR will comprise the EIR for the proposed Medical Cannabis Cultivation and Commerce Ordinance Project.

Before approving the proposed Medical Cannabis Cultivation and Commerce Ordinance Project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

1.5 ORGANIZATION OF THIS DEIR

This DEIR is organized as follows:

Executive Summary: This chapter introduces the proposed Medical Cannabis Cultivation and Commerce Ordinance Project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and lists significant environmental impacts and mitigation measures to reduce significant impacts to a less-than-significant level.

Chapter 1, Introduction: This chapter provides a description of the lead and responsible agencies, the legal authority and purpose of the EIR, the scope of the environmental analysis, agency roles and responsibilities, the CEQA public review process, and organization of the EIR.

Chapter 2, Project Description: This chapter describes the project background, including existing and related regulations; lists the objectives of the proposed regulations; and provides a detailed description of the proposed regulations and reasonably foreseeable compliance responses associated with the proposed Medical Cannabis Cultivation and Commerce Ordinance Project.

Chapter 3, Environmental Setting, Impacts, and Mitigation Measures: The resource sections within this chapter evaluate the expected environmental impacts generated by the project. Within each subsection of Chapter 3, the regulatory background, existing environmental setting, the significance criteria, and the analysis methodology and assumptions are described. The anticipated changes to the existing environmental conditions after development of the project are then evaluated for each resource. For any significant or potentially significant impact that would result from project implementation, mitigation measures are presented along with the remaining level of significance. Environmental impacts are numbered sequentially throughout the sections of Chapter 3 (e.g., Impact 3.2-1, Impact 3.2-2, etc.). Any required mitigation measures are numbered to correspond to the impact numbering; therefore, the mitigation measure for Impact 3.2-1 would be Mitigation Measure 3.2-1.

Chapter 4, Cumulative Impacts: This chapter provides information regarding the potential cumulative impacts that would result from implementation of the project together with other past, present, and probable future projects.

Chapter 5, Other CEQA Sections: This chapter provides a discussion of potential significant and unavoidable impacts, significant and irreversible commitment of resources, energy conservation, and growth-inducing impacts.

Chapter 6, Alternatives: This chapter provides a discussion of alternatives to the project, including the No Project Alternative; alternatives considered but removed from further consideration; and the environmentally superior alternative.

Chapter 7, List of Preparers: This chapter identifies the lead agency contacts as well as the preparers of this DEIR.

Chapter 8, References: This chapter identifies the organizations and persons consulted during preparation of this DEIR and the documents used as sources for the analysis.

1.6 STANDARD TERMINOLOGY

This DEIR uses the following standard terminology:

No Impact means no change from existing conditions (no mitigation is required).

Less-than-Significant Impact means no substantial adverse change in the physical environment (no mitigation is required).

Potentially Significant Impact or **Significant Impact** means an impact that might or would cause a substantial adverse change in the physical environment (mitigation is recommended where feasible).

Significant and Unavoidable Impact means an impact that would cause a substantial adverse change in the physical environment and that cannot be avoided, even with the implementation of all feasible mitigation.

Project means the proposed Medical Cannabis Cultivation and Commerce Ordinance Project.

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

This draft environmental impact report (DEIR) evaluates the proposed Calaveras County Medical Cannabis Cultivation and Commerce Ordinance (proposed ordinance or project). The proposed ordinance addresses regulations concerning the cultivation, manufacture, testing, distribution, transportation, and storage of medical marijuana within Calaveras County. These regulations include permitting requirements to reduce conditions that create public nuisances by enacting restrictions on the location, type, and size of marijuana cultivation sites; the location, type, and size of commercial activities involving medical marijuana; and the use of adequate screening, security, and other protective measures to more effectively control the adverse environmental impacts associated with medical marijuana cultivation and commercial activities. The DEIR also evaluates, as an alternative, the potential environmental impacts associated with banning these uses (refer to Chapter 6, "Alternatives). As noted in Chapter 1, "Introduction," the Calaveras County Board of Supervisors recently directed County Counsel and the County Planning Department to prepare an ordinance banning the cultivation of and other commercial activities related to cannabis to the extent allowable under state law. This EIR could be used to serve as the appropriate CEQA document for adoption of an ordinance banning said uses in the unincorporated areas of the County.

2.1.1 Medical Cannabis Use Context

The cannabis or hemp plant has been used since antiquity and grows in almost all parts of the world, but has been known primarily as a source of useful fiber for the manufacture of textiles and rope. In most fiber-producing areas, the plant was not used as a drug. Geographic and climatic factors modified the content of pharmacologically active material in the plant, and only in some regions was this content high enough to lead to the discovery that the plant, and especially its resin, had important drug actions. Knowledge of these actions appears to have arisen first in the Himalayan region of central Asia and spread gradually from there to India, Asia Minor, North Africa, and across the desert to sub-Saharan Africa and the rest of the African continent. Cannabis also formed part of the therapeutic armamentarium of traditional Indian medicine, and many of the uses were similar to those for which it is currently advocated in our own society. The extracts of cannabis were adopted into the British Pharmacopoeia and later into the American Pharmacopeia, and were widely used in the English-speaking world as sedative, hypnotic, and anticonvulsant agents in the late 19th and early 20th centuries. Yet, by the time that cannabis was dropped from the British Pharmacopoeia in 1932 and the American Pharmacopeia in 1941, its clinical use had virtually disappeared and its formal banishment evoked little or no protest. Among the reasons for this loss of favor were that the plant material was too variable in composition, its shelf life was too short and unpredictable, and it had been increasingly replaced by pure opiates and more reliable new synthetic drugs invented in the early part of the 20th century (Kalant 2001).

A variety of federal laws have addressed the pharmacological uses of cannabis in the United States. Notably, the use of marijuana became regulated under federal law in 1937, when congress passed the Marijuana Tax Act. The Marijuana Tax Act was repealed through passage of the Controlled Substances Act in 1970, which scheduled or categorized therapeutic goods. Through the Controlled Substances Act, marijuana was deemed to be a Schedule 1 substance, meaning that it has no valid medical uses and a high potential for abuse. Since that time, efforts to decriminalize, legalize, and otherwise re-schedule marijuana have occurred at the federal level and by individual states. Over 60 percent in the United States live in states that have legalized marijuana for medical use with a growing number (including California) legalizing it for recreational use. An overview of regulations pertaining to marijuana in California and Calaveras County are described below under Section 2.2, "Existing and Related Regulations."

2.1.2 Physical Description of Medical Cannabis Cultivation and Commerce Processes

Cannabis cultivation requires the same basic conditions as most plants: a growth medium, light, water, and nutrients. For the purposes of this discussion, activities associated with medical cannabis cultivation consist of: stages of growth, indoor and outdoor growth requirements, harvesting activities, and preparation of cannabis products for sale.

PLANT STAGES AND DEVELOPMENT

Germination is the process in which seeds sprout. Generally, germination is initiated by soaking seeds either between wet paper towels, in a cup of water at room temperature, in wet peat pellets, or directly in potting soil. Warmth, darkness, and moisture initiate metabolic processes such as the activation of hormones that trigger the expansion of the embryo within the seed. Once germination is complete, seedlings are prepared for indoor or outdoor growth. During the vegetative phase, the plant directs its energy resources primarily to the growth of leaves, stems, and roots. A plant needs one to two months to mature before blooming. The flowering phase varies from about 6 to 22 weeks depending on the variety of cannabis.

There are currently more than 2,000 varieties of cannabis worldwide (Leafly 2016), and often dispensaries provide varietal specific information to their customers, who then in turn can request specific varietals. In order to maintain specific varieties of cannabis at cultivation sites, the practice of cloning is often employed. This involves the use of cuttings (i.e., targeted trimmings of a plant) that will grow roots and eventually mature to be a genetic replica of the original plant.

Within each plant, there are over 480 natural components, 66 of which have been classified as unique to the cannabis plant (i.e., cannabinoids). These cannabinoids, the most famous of which are the tetrahydrocannabinols (THC) and cannabidiol (CBD), affect the user by interacting with specific receptors within the central nervous system involved in cognition, memory reward, pain perception, and motor coordination (University of Washington 2013). Compared to THC, CBD has been found to have fewer psychoactive effects (i.e., feeling high or stoned) than THC (Chambers 2016). To date, cannabis and cannabis-derived products are being used for a number of medical conditions including epilepsy, neuropathic pain, AIDS wasting (i.e., involuntary loss of more than 10% of body weight), treatment of spasticity associated with multiple sclerosis, and cancer and chemotherapy-induced nausea (FDA 2016).

Outdoor Cultivation

Cannabis can be grown outdoors, either on natural soil or in pots of pre-made or commercial soil. Some strains perform better than others in outdoor settings, an attribute that depends on different conditions, variables, and aspects. To generate optimum quantities of cannabinoids containing resin, the plant needs fertile soil and long hours of daylight. For outdoor cultivation, growers generally select areas that receive twelve hours or more of sunlight a day. In the Northern Hemisphere, growers typically plant seeds in mid-April, late May, or early June to provide plants a full four to nine months of growth. Harvest is usually between mid-September and early November. Based on published information for California, approximately 230,000 gallons of water are required per half acre of outdoor cultivation (Carah et al. 2015). Based on one of the larger established operations in Calaveras County, approximately 390,000 gallons per half acre of cultivation may be required per year. This range in demand is roughly equivalent to the annual demand of an acre of grapes or a half acre of corn within the County (Wright, pers. comm., 2016).

Indoor Cultivation

Cannabis can be grown indoors in a soil-like medium under artificial light, adding fertilizer when the plants are given water. Cultivating cannabis indoors is more complicated and expensive than growing outdoors, but it allows the cultivator complete control over the growing environment. Plants of any type can be grown faster indoors than out due to 24-hour light, additional atmospheric carbon dioxide (CO_2), and controlled humidity which allows freer CO_2 respiration. Plants can also be grown indoors through the use of hydroponics, which uses a mineral nutrient solution in water without soil. Water demand for indoor

cultivation varies, depending on whether the grower employs a water capture/reuse system. Based on local data, for every 1,000 square feet (sf) of canopy, water demand varies between 100 gallons per day (gpd) to 320 gpd. Assuming a 3-month (92-day) cultivation/harvest period, up to 27,440 gallons would be required per 1,000 sf of canopy. For an indoor grow with 5,000 sf of canopy, water demand for that grow could be up to 137,200 gallons per harvest. The use of dehumidifiers or modified air conditioning systems that can capture water for reuse can reduce water demand by up to 66 percent. However, indoor grows would allow for multiple harvests per year, which could also increase annual water demand.

HARVESTING ACTIVITIES

Cannabis harvesting activities generally requires a maximum of approximately 10 to 15 people. Plants are trimmed of their leaves to reveal buds, which are typically dried in warehouses. This may be done by hand or through the use of mechanized trimming.

PREPARATION FOR SALE

Harvested and trimmed cannabis is typically vacuum-sealed in plastic bags. Tinctures and other products may also be prepared using solvents, such as alcohol and olive oil, to extract active chemicals from harvested plant materials. No more than 15 people are required for large-scale operations.

2.2 EXISTING AND RELATED REGULATIONS

As discussed above, while cannabis is used, it is currently regulated as a Schedule 1 drug under the Federal Controlled Substances Act. In California, the passage of Proposition 215 in 1996 legalized medical marijuana, and the passage of Proposition 64 in 2016 legalized recreational marijuana. Although the Department of Justice under President Obama did not prosecute most individuals and businesses that followed state marijuana laws, both medical and recreational marijuana remain illegal under federal law.

A brief history of cannabis regulations is provided below.

2.2.1 Existing Medical Cannabis Use Regulations

COMPASSIONATE USE ACT

The Compassionate Use Act of 1996, which allows for the medical use of cannabis in California under state law, was passed through voter approval of ballot proposition 215. It allows patients with a valid doctor's recommendation, and the patients' designated primary caregivers, to possess and cultivate cannabis for personal medical use without facing criminal charges from the state. The Compassionate Use Act changed California's penal code to decriminalize the cultivation and possession of medical marijuana by a patient, or the patient's primary caregiver, for the patient's personal use, and to create a limited defense to the crimes of possessing or cultivating marijuana.

MEDICAL MARIJUANA PROGRAM ACT

The passage of Senate Bill (SB) 420 (Statues of 2003), enacted the Medical Marijuana Program Act. The Medical Marijuana Program Act clarifies the scope and application of the Compassionate Use Act, and established the California medical marijuana program. Specially, this act established a voluntary program for the issuance of identification cards to qualified patients and established procedures under which a qualified patient with an identification card may use marijuana for medical purposes to protect patients and their caregivers from arrest.

MEDICAL CANNABIS REGULATION AND SAFETY ACT

Originally referred to as the Medical Marijuana Regulation and Safety Act but renamed through subsequent amendments, the Medical Cannabis Regulation and Safety Act (MCRSA) consists of three separate bills that were enacted together in September 2015 (Assembly Bill [AB] 266, AB 243, and SB 643). The bills created a comprehensive state licensing system for the commercial cultivation, manufacture, retail sale, transport, distribution, delivery, and testing of medical cannabis. All licenses must be approved by local governments. AB 266 established a new Bureau of Medical Cannabis Regulation under the Department of Consumer Affairs. The Bureau is tasked with establishing a comprehensive internet system to track licensees and report the movement of commercial cannabis and cannabis products. SB 643 and AB 243 establish the following responsibilities: the California Department of Food and Agriculture is responsible for regulating cultivation; the California Department of Public Health is responsible for developing standards for manufacture, testing, and production and labeling of edibles; the California Department of Pesticide Regulation is responsible for developing pesticide standards; and, the California Department of Fish and Wildlife (CDFW) and State Water Resources Control Board (SWRCB) are responsible for protecting water quality.

2.2.2 Existing Recreational Cannabis Use Regulations

ADULT USE OF MARIJUANA ACT

On November 8, 2016, California voters approved Proposition 64, the California Marijuana Legalization Initiative or the Adult Use of Marijuana Act. Proposition 64 legalized the personal use and cultivation of marijuana in California as of November 9, 2016. However, the sale and subsequent taxation of recreational marijuana will not go into effect until January 1, 2018. The intent of the Act is to establish a comprehensive system to legalize, control, and regulate the cultivation, procession, manufacture, distribution, testing, and sale of nonmedical marijuana products, for use by adults 21 years and older, and to tax the commercial growth and retail sale of marijuana for recreational use.

2.2.3 Existing Cannabis Cultivation Regulations

CALIFORNIA

Medical Cannabis Regulation and Safety Act

As described above, the MCRSA created a comprehensive state licensing system for the commercial cultivation, manufacture, retail sale, transport, distribution, delivery, and testing of medical cannabis. All licenses must also be approved by local governments. The type of zoning clearance certificate or permit issued by the County Planning Department prior to engaging in the commercial cultivation of cannabis for medical use is determined by the zoning classification of the parcel on which the activity is to be conducted and the type of state license required for that operation pursuant to the MCRSA. State license types, issued by the California Department of Food and Agriculture, are shown in Table 2-1.

In addition to cultivation permits requirements, applicants must obtain a variety of other permits, including:

- Department of Forestry and Fire Protection: permitting for timber harvest;
- SWRCB Construction General Permit, U.S. Army Corps of Engineers, and/or the Central Valley Regional Water Quality Control Board (RWQCB): land disturbance;
- CDFW Lake and Streambed Alteration Agreements: disturbance in streams and wetlands;
- Central Valley RWQCB: discharge for outdoor or mixed outdoor/indoor cultivation activities that occupy and/or disturb more than 1,000 square feet.

Table 2-1 Marijuana Commercial Cultivation Licenses

Type	Name	Outdoor/Indoor	Artificial Lighting	Total Size (sq. ft.)
1	Specialty Outdoor	Outdoor	No	Up to 5,000 (canopy)
1A	Specialty Indoor	Indoor	Yes	Up to 5,000
1B	Specialty Mixed-Light	Indoor/Outdoor	Yes	Up to 5,000
1C	Specialty Cottage	Indoor/Outdoor	Yes (supplemental)	Up to 2,500 (mixed light canopy) Up to 25 plants (outdoor) Up to 500 (indoor canopy)
2	Small Outdoor	Outdoor	No	5,001-10,000
2A	Small Indoor	Indoor	Yes	5,001-10,000
2B	Specialty Mixed-Light	Indoor/Outdoor	Yes	5,001-10,000
3	Small Outdoor	Outdoor	No	10,001 and 44,000
3A	Small Indoor	Indoor	Yes	10,001 and 22,000
3B	Specialty Mixed-Light	Indoor/Outdoor	Yes	10,001 and 22,000
4	Nursery	Indoor/Outdoor	Yes	N/A

Source: MCRSA 2015

Central Valley RWQCB Order R5-2015-0113

The Central Valley RWQCB adopted Order R5-2015-0113 on October 5, 2015, which regulates discharges of waste from medical cannabis cultivation activities to ensure those activities do not affect water resources. The Order includes enforceable requirements for cannabis cultivators in the Central Valley Region whose cultivation activities occupy and/or disturb more than 1,000 square feet. Cannabis activities that disturb less than 1,000 feet do not generally cause more than de minimis impacts to water quality, and are therefore not covered by the Order. Cannabis cultivators whose operations are not in compliance with local and/or county ordinances cannot obtain coverage under the Order, but are nonetheless expected to abide by all Discharge Prohibitions and Discharge Specifications, and implement all Best Management Practices (BMPs) outlines in the Order to avoid impacts to water resources.

The Order includes a classification system that establishes different tiers for cultivations based on their potential to impact water quality. Tiers are defined by physical characteristics of the cannabis operation and the local environment. As the threat to water quality by an operation increases, so too do the requirements on the operator to protect water quality and comply with the Order.

CALAVERAS COUNTY

Medical Cannabis Dispensaries Ordinance

Title 17, Chapter 17.91 of the Calaveras County Code provides guidance related to medical cannabis dispensary use permits. The code provides limits to quantities that a dispensary may possess, operating procedures, cultivation allowances, and minimum requirements related to the issuance of a permit. The code limits the location of dispensaries to the professional office (CP) zoning district.

Urgency Ordinance Regulating Medical Cannabis Cultivation and Commercial Uses Involving Medical Cannabis

The Calaveras County Board of Supervisors adopted the Urgency Ordinance Regulating Medical Cannabis Cultivation and Commercial Uses Involving Medical Cannabis (Urgency Ordinance) on May 10, 2016. The purpose of the Urgency Ordinance was to quickly establish land use regulations concerning the cultivation, manufacture, testing, distribution, transportation, and storage of medical marijuana in Calaveras County. Adoption of the Urgency Ordinance was considered necessary to address conditions that were creating public nuisances related to location, types, and size of marijuana cultivation sites and commercial activities. Specifically, the Urgency Ordinance addressed the proximity of marijuana plants and products near schools, degradation of the natural environment, malodorous smells, and indoor electrical fire hazards.

The Urgency Ordinance directs mandatory registration of medical cannabis cultivation sites in Calaveras County for both personal and commercial cultivation. The maximum area of cultivation on a parcel is: 100 square feet for personal cultivation and 100 square feet per patient for a caregiver. The minimum parcel size for an outdoor or commercial medical cannabis cultivation size is 2 acres, with a maximum area of cultivation of 15 percent of the parcel area. The cultivation area must be set back at least 75 feet from the property, and cannot exceed 22,000 square feet of total canopy area. The parcel must be located at least 1,000 feet from sensitive uses (see definition below). Cultivation sites are required to be fully enclosed by a six-foot-tall fence, and shielded from public view. The Urgency Ordinance would end upon approval of the proposed ordinance.

2.3 PROJECT LOCATION

Calaveras County is located in California's central Sierra Nevada region, ranging from low-elevation oak-covered foothills to high-elevation pine forests. The Mokelumne, Stanislaus and Calaveras rivers flow through the County collecting water from rain and melting snow to fill the County's numerous lakes and reservoirs. The majority of land within the County falls within the regulatory jurisdiction of the County, with the exception of the City of Angels Camp, the only incorporated city within the county boundaries, and federal and state lands (approximate 13 percent of the land area of the County). Approximately 39,000 acres within the County are owned by the Bureau of Land Management with an additional 6,000 acres, associated with the Calaveras Big Trees State Park, owned by the State of California.

2.4 OBJECTIVES OF THE PROPOSED ORDINANCE

Recognizing the requirements of state and federal law related to the use and distribution of cannabis, the primary objectives of the proposed ordinance include the following:

1. Comprehensively regulate premises within the County used for marijuana cultivation or commercial activities related to marijuana or to prohibit those uses within the constraints of state law.

2. Maintain the health, safety, and well-being of the County, its residents, and environment.

3. Minimize risks of and complaints regarding fire, odor, and pollution caused by unregulated cultivation of marijuana within the County.

4. Protect the County's surface and groundwater resources by reducing the discharge of sediments, pesticides, fertilizers, petroleum hydrocarbons, trash, and human waste.

2.5 DESCRIPTION OF THE PROPOSED ORDINANCE AND REASONABLY FORESEEABLE COMPLIANCE RESPONSES

The proposed ordinance contains measures that would establish land use regulations for the cultivation, manufacture, testing, distribution, and storage of medical marijuana within the County. Recreational marijuana is not addressed by the regulations. The components of the proposed ordinance are described below.

2.5.1 Key Concepts

Key concepts associated with the proposed ordinance are described below to help orient the reader to language used within this EIR.

Canopy area: the gross area of cannabis planting covered by the canopy of all marijuana to be cultivated on the parcel when the marijuana plants reach their maximum canopy size, including the space between the plants within a single fenced or enclosed area.

Commercial cannabis cultivation: any activity involving the planting, growing, harvesting, drying, curing, grading, or trimming of cannabis for medical use, including nurseries, that is intended to be transported, processed, manufactured, distributed, dispensed, delivered, or sold in accordance with the MCRSA for use by medical cannabis patients in California pursuant to the Compassionate Use Act of 1996. The total canopy area that may be cultivated would be no more than 25 percent of the parcel's total square footage. A maximum of 22,000 square feet is allowed under the MCRSA.

Personal cultivation: cannabis cultivation by a qualified patient, who cultivates and possess cannabis exclusively for his or her personal medical use, but who does not provide, donate, sell or distribute cannabis to any other person or entity. Up to one hundred square feet of total canopy area would be allowed under the proposed ordinance.

Primary caregiver cultivation: cannabis cultivation for a qualified patient or persons with an identification card by a person who cultivates, possesses, transports, donates, or provides cannabis exclusively for the personal medical purposes of no more than two individuals for whom he or she is primary caregiver. Up to 100 square feet of total canopy per patient would be allowed for a maximum of two patients.

Public view: as viewed at ground level, without the use of a ladder or similar device from any place that the general public has a lawful right to be, including the public right-of-way, a public way, or neighboring premises.

Sensitive uses: an elementary, middle, or high school; public library; public park; and any establishment that advertises in a manner that identifies itself as catering to or providing services primarily intended for minors, or the individuals who regularly patronize, congregate, or assemble at the establishment are predominately minors.

2.5.2 Outdoor, Mixed Light, and Nursery Commercial Cannabis Cultivation

Outdoor, mixed light, and nursey commercial cannabis cultivation refers to any activity involving the planting, growing, harvesting, drying, curing, grading, or trimming of cannabis for medical use, including nurseries, that is intended to be transported, processed, manufactured, distributed, dispensed, delivered, or sold in accordance with the MCRSA for use by medical cannabis patients in California pursuant to the Compassionate Use Act of 1996. Outdoor includes open air cultivation, and areas enclosed by greenhouses or other transparent or translucent structures.

PROPOSED REGULATORY ACTIONS

Applicants for outdoor commercial cannabis zoning clearance certificates or administrative use permits would be required to provide the following information to the County Planning Department for review before a certificate or permit is granted:

- the applicants' business and personal name, physical address, and other contact information;
- written consent of the owner of the parcel to cultivate marijuana within the subject site;
- a 24-hour emergency contact for law enforcement, fire, utility, and County personnel pursuant to all state and local laws and regulations and who has the means and authorization to provide access to the cultivation site;
- signed, written consent to reasonable compliance inspections by County staff between the hours of 7:00 a.m. and 7:00 p.m., excluding holidays;

- site plan showing the entire parcel, the location and area for all cultivation on the parcel, the dimension of each area to be used for cultivation, and setbacks from property lines;
- hours of operation, and a schedule of activities during each month of the growing and harvesting season;
- a security plan describing how the cultivation area would be secured against access by trespassers, including a description of all fencing, screening, gating, locks, lighting, cameras, and alarms;
- description of legal water source, irrigation plan, and project water usage.;
- statement of water diversion, or other permit, license, or registration filed with the SWRCB Division of Water Rights;
- for a cultivation site of greater than 1,000 square feet, a copy of the Notice of Intent and Monitoring Self-Certification and other documents filed with the Central Valley RWQCB demonstrating enrollment in its Cannabis Cultivation Waste Discharge Regulatory Program pursuant to General Order R5-2015-0113;
- any applicable Streambed Alteration Permits from CDFW; and
- permits from the County's Environmental Health Department for storage and use of pesticides or other hazardous materials, if applicable.

Certificates and permits may be revoked for a variety of reasons, including: failure or refusal to inform the County of alterations to the property that would compromise the original permit approvals, submission of false or misleading information as part of the application, failure to comply with permit conditions, and failure to obtain and maintain other required local, county, regional, or state permits or license applications for the cultivation of cannabis.

Zoning clearance certificates, administrative use permits, or conditional use permits would be valid for one year unless compliance inspections are conducted and found to be consistent with all conditions of approval, and a renewal has been approved by the Planning Department. The types of zoning clearance certificate or permit that may be issued by the Planning Department for commercial cultivation of cannabis for medical use are shown in Table 2-2.

Table 2-2 Zoning Clearance Certificate or Permit – Outdoor Cultivation

Cultivation Type	Personal Use/Caregiver	1 or 1B License	2 or 2B License	3 or 3 B License	Nursey
Maximum Canopy	100/200 sq. ft.	5,000 sq. ft.	10,000 sq. ft.	22,000 sq. ft.	N/A
Unclassified, U	ZCC	ZCC	AUP	AUP	-
Highway Services, HS	ZCC	-	-	-	-
Residential Agriculture, RA	ZCC	ZCC	AUP	AUP	-
Rural Residential	ZCC	ZCC	AUP	AUP	-
General Forest, GF	ZCC	ZCC	AUP	AUP	-
General Agriculture, A1	ZCC	ZCC	AUP	AUP	CUP
Agriculture Preserve, AP	ZCC	ZCC	AUP	AUP	-

Notes: AUP=Administrative Use Permit; CUP=Conditional Use Permit; sq. ft. = square feet; ZCC=Zoning Clearance Certificate

REASONABLY FORESEEABLE COMPLIANCE RESPONSES

Outdoor, mixed light, and nursery commercial cannabis cultivation activities would be located at least 1,000 feet from any parcel containing "sensitive uses" and would be set-back 30 feet from any property line. The total canopy area would not occupy more than 20 percent of the parcel's total square footage. The cultivation site, or a contiguous parcel under common ownership, must contain a lawful permanent dwelling.

Based on the current percentage (>29%) of commercial cultivation applications submitted under the urgency ordinance for property within the 2015 Butte Fire area, a large percentage of commercial mixed light and outdoor use permits are expected to be applied for and granted in the community of Mountain Ranch on land that was scorched in the 2015 Butte Fire. Additional mixed light and outdoor permits are also expected to originate in Mokelumne Hill, Valley Springs, West Point, Murphys, and San Andreas. Cultivation sites would be located on land zoned for forest, rural residential, and agricultural uses (see Table 2-2).

Issuance of permits could result in tree removal, vegetation clearing, and grading (i.e., terracing) to establish areas of cultivation for up to 22,000 square feet of land per parcel. In addition, accessory buildings could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. Each outdoor and mixed light cultivation site would be surrounded by an 8-foot-tall fence to preclude public views of plants.

Operation of mixed light and outdoor cultivation operations would require up to approximately 390 gallons of water per half acre per year, including water used for the application of pesticides, fungicides, and fertilizers. The application of pesticides, fungicides, and fertilizers would comply with current regulations and guidance provided by the California Department of Pesticide Regulation and the Central Valley RWQCB, including Order R5-2015-0113.

During the harvest phase of cultivation, crews of up to 15 people per operation would be employed for a period of up to 3 weeks depending on the size of the operation and the number of plants. Based on the total number of applications for outdoor commercial operations received under the urgency ordinance (995 total, of which 740 were commercial) and the anticipated number of applications to be approved, it is estimated that up to 750 applications could be approved by the County, although it is anticipated that approximately half of that would actually occur. Of that number, nurseries are anticipated to represent approximately 1-2 percent.

2.5.3 Indoor Commercial Cannabis Cultivation

Indoor commercial cannabis cultivation refers to any indoor/enclosed activity involving the planting, growing, harvesting, drying, curing, grading, or trimming of cannabis for medical use. Indoor spaces must be fully enclosed by permanent structures and contain artificial lighting sources. Zoning clearance certificates, administrative use permits, or conditional use permits would be valid for one year unless compliance inspections are conducted and found to be consistent with all conditions of approval, and a renewal has been approved by the Planning Department. The types of zoning clearance certificate or permit that may be issued by the Planning Department for the commercial cultivation of cannabis for medical use are shown in Table 2-3.

Table 2-3 Zoning Clearance Certificate or Permit – Indoor Cultivation

Zone	Personal Use/Caregiver	1A License	2A License	3A License
Maximum Canopy	100/200 sq. ft.	5,000 sq. ft.	10,000 sq. ft.	22,000 sq. ft.
Unclassified, U	ZCC	ZCC	–	–
Highway Services, HS	ZCC	-	–	–
Residential Agriculture, RA	ZCC	ZCC	–	–
Rural Residential	ZCC	ZCC	–	–
General Forest, GF	ZCC	–	–	–
General Agriculture, A1	ZCC	ZCC	–	–
Agriculture Preserve, AP	ZCC	ZCC	–	–
Light Industrial, M1	–	AUP	AUP	–
General Industrial, M2	–	AUP	AUP	–
Business Park, M4	–	AUP	AUP	–

Notes: AUP=Administrative Use Permit; CUP=Conditional Use Permit; sq. ft. = square feet; ZCC=Zoning Clearance Certificate

PROPOSED REGULATORY ACTIONS

Applicants for indoor commercial cannabis zoning clearance certificates or administrative use permits would be required to provide the following information to the County Planning Department for review before a certificate or permit is granted:

- the applicants' business and personal name, physical address, and other contact information;
- written consent of the owner of the parcel to cultivate marijuana within the subject site;
- a 24-hour emergency contact for law enforcement, fire, utility, and County personnel pursuant to all state and local laws and regulations and who has the means and authorization to provide access to the cultivation site;
- signed, written consent to reasonable compliance inspections by County staff between the hours of 7:00 a.m. and 7:00 p.m., excluding holidays;
- site plan showing the entire parcel, the location and area for all cultivation on the parcel, the dimension of each area to be used for cultivation, and setbacks from property lines;
- hours of operation, and a schedule of activities during each month of the growing and harvesting season;
- a security plan describing how the cultivation area would be secured against access by trespassers, including a description of all fencing, screening, gating, locks, lighting, cameras, and alarms;
- description of legal water source, irrigation plan, and project water usage;
- statement of water diversion, or other permit, license, or registration filed with the SWRCB Division of Water Rights;
- for a cultivation site of greater than 1,000 square feet, a copy of the Notice of Intent and Monitoring Self-Certification and other documents files with the Central Valley RWQCB demonstrating enrollment in its Cannabis Cultivation Waste Discharge Regulatory Program pursuant to General Order R5-2015-0113;

- any applicable Streambed Alteration Permits from CDFW; and
- permits from County's Environmental Health Department for storage and use of pesticides or other hazardous materials, if applicable.

REASONABLY FORESEEABLE COMPLIANCE RESPONSES

Indoor commercial cannabis cultivation sites must be located on a parcel or contiguous to a parcel that contains a lawful permanent dwelling except industrially-zoned parcels. Cultivation areas must be located at least 30 feet from any property line and 1,000 feet from any sensitive uses. The total canopy area that may be cultivated would be no more than 25 percent of the parcel's total square footage.

The majority of indoor use permits may require construction of large warehouses, which may require earth-moving construction activities (e.g., tree removal, vegetation clearing, grading). Due to intensive electricity demands related to the cultivation of cannabis, modifications to existing electricity grids may be required, including new power lines and upgrades to substations. Generally, indoor cultivation sites would appear as unremarkable structures without signage or other indications of cannabis cultivation. Similar to outdoor cultivation, the application of pesticides, fungicides, and fertilizers would comply with current regulations and guidance provided by the California Department of Pesticide Regulation and the Central Valley Regional Water Quality Control Board.

Crews of up to 15 people would be employed during the harvest phase of cultivation.

Based on the number of applications submitted under the urgency ordinance, approximately 2 percent of the total number of applications received involved indoor cultivation. Assuming a similar ratio would apply to the proposed ordinance, approximately 15 applications for indoor grows are anticipated. This number may shift if outdoor operations shift to indoor operations.

2.5.4 Personal and Primary Caregiver Cultivation

Personal cannabis is defined as cultivation and possession of cannabis exclusively for his or her personal medical use, but who does not provide, donate, sell or distribute cannabis to any other person or entity. Primary caregiver cultivation permits may be granted to qualified patient or persons with an identification card by a person who cultivates, possesses, transports, donates, or provides cannabis exclusively for the personal medical purposes of no more than two individuals for whom he or she is primary caregiver.

PROPOSED REGULATORY ACTIONS

Applicants seeking zoning clearance certificates for personal cultivation or primary caregivers cultivation would be required to fill out an application that includes the following information to be reviewed by the County Planning Department before a certificate or permit is granted:

- the applicants' name, physical address, and contact information;
- consent of the property owner to cultivate marijuana on the subject site;
- a site plan showing the entire parcel, the location and area for all out-or-door cultivation of the parcel, including cultivation that would take place in a greenhouse or similar transparent or translucent structure, with the dimensions of each area to be used for cultivation and setbacks from property lines;
- security plans, including fencing, screening, gates, and locks, if any portion of the cultivation would take place out-of-doors, including within a greenhouse or similar transparent or translucent structure;

- signed, written consent to reasonable on-site compliance inspections of the cultivation area by law enforcement or other County personnel during normal business hours (8:00 a.m. to 5:00 p.m., excluding weekends and holidays); and

- for a primary caregiver cultivation, the maximum number of qualified patients or persons with an identification card (up to two individuals total) for whom the applicant would be cultivating marijuana.

REASONABLY FORESEEABLE COMPLIANCE RESPONSES

Personal cultivation sites and primary caregiver cultivation sites must be located at least 30 feet from the property line. The cultivation sites may be located outdoors, or within a greenhouse or similar transparent or translucent structure. Primary caregiver cultivation may occur on a parcel improved with an occupied legally established dwelling that serves as the primary residence of the primary caregiver or a patient of that caregiver. The total canopy area would not be greater than 25 percent of the parcel's total square footage or no more than 100 square feet of canopy for personal cultivation and up to 200 square feet of canopy for primary caregiver cultivation.

The majority of personal and primary caregiver use permits are expected to be applied for and granted in the communities of Valley Springs, Mountain Ranch, Mokelumne Hill, and West Point. A substantial number of personal or primary caregiver permits are also expected to originate in Murphys and San Andreas. Personal and primary caregiver cultivation sites would be located on land zoned for forest, rural residential, agricultural uses (see Tables 2-2 and 2-3).

Issuance of permits could result in tree removal, vegetation clearing, and grading (i.e., terracing) to establish areas of cultivation for up to 200 square feet of land per parcel with 4 to 6 plants per permit. In additional, smaller sheds may be constructed for storage of fuel, pesticides, and herbicide. Each outdoor cultivation site would be surrounded by an 8-foot-tall fence to preclude public views of plants.

Based on the number of applications submitted under the urgency ordinance, approximately 26 percent of the total number of applications received involved personal and/or primary caregiver cultivation. Assuming a similar ratio would apply to the proposed ordinance, approximately 200 personal and/or primary caregiver operations may occur. It should be noted that personal and/or primary caregiver applications would be necessary for County residents that pursue outdoor cultivation of cannabis within their property.

2.5.5 Commercial Cannabis Manufacturing, Testing, Distribution, and Transport

Commercial cannabis manufacturing, testing, distribution, and transport refers to commercial cannabis activities other than medical marijuana dispensaries and cultivation sites. These facilities would be allowed in specially enumerated zones, which are limited as shown in Table 2-4.

Table 2-4 Zoning Clearance Certification or Permit Requirements for Commercial Cannabis Manufacturing, Testing, Distribution, and Transport

Zone	Manufacturing with Volatile Substances	Manufacturing without Volatile Substances	Testing	Distributing	Transporting	Dispensing
Professional Offices, CP	-	-	-	-	-	AUP
Limited Commercial, C1	-	-	CUP	-	-	-
General Commercial, C2	_	_	CUP	CUP	CUP	-
Light Industrial, M1	CUP	AUP	ZCC	CUP	ZCC	-
General Industrial, M2	CUP	AUP	ZCC	AUP	ZCC	-
Business Park, M4	-	-	ZCC	AUP	ZCC	-

Notes: AUP=Administrative Use Permit; CUP=Conditional Use Permit; sq. ft. = square feet; ZCC=Zoning Clearance Certificate

PROPOSED REGULATORY ACTIONS

Applicants for commercial cannabis manufacturing, testing, distributing, or transporting zoning clearance certificates or conditional use permits would be required to provide the following information to the County Planning Department for review before a certificate or permit is granted:

- the applicants' business and personal name, physical address, and other contact information;
- written consent of the parcel owner for commercial cannabis manufacturing, testing, distributing, or transporting within the subject site;
- contact information for a responsible party, located within 30 miles of the site and available as a 24-hour emergency contact for law enforcement, fire, utility, and County personnel;
- the applicants' valid business license;
- signed, written consent to reasonable compliance inspections by County staff during business hours (8:00 a.m. to 5:00 p.m. on weekdays, excluding holidays);
- site plan showing the entire parcel, the location and area for all marijuana or marijuana products to be kept or stored on the parcel, hours of operation, and setbacks from property lines;
- security plans describing how all marijuana or marijuana products kept or stored on-site would be secured against access by trespassers, including discussion of all fencing, screening, gating, locks, lighting, cameras, and alarms; and
- relevant permits from the County's Environmental Health Department for pesticides or other hazardous materials.

REASONABLY FORESEEABLE COMPLIANCE RESPONSES

Commercial cannabis manufacturing, testing, distributing, or transporting would occur within buildings generally located in commercial and industrial areas. The majority of indoor use permits may require construction of large warehouses, which may require some earth-moving construction activities (tree removal, vegetation clearing, grading). Transport to and from the site would occur during the typical harvest season (September through November), during which up to 15 employees would travel to and from each of the sites on a daily basis. Generally, indoor processing sites would appear as unremarkable structures with obscured or no windows. These facilities would primarily be located in more urban areas of Valley Springs, San Andreas, and Murphys. Demand for utility services (water, electricity) would be typical of industrial warehouse uses. As part of this analysis, these facilities are anticipated to occupy existing buildings on parcels zoned for commercial or light industrial land uses. If the development of a new processing facility were to occur, it would be subject to discretionary review and its own project-level CEQA review where it would be evaluated for potential project-specific impacts, including construction noise, operation noise, and contribution to traffic noise levels. Because the type, size, and location of these activities would be dependent on the number of contributing commercial cultivation sites and their individual outputs, specific impacts related to these activities cannot be reasonably foreseen at this time. However, where appropriate and reasonably foreseeable in Section 3.1 through 3.9, impacts associated with the commercial cannabis manufacturing, testing, distributing, or transporting of medical cannabis are evaluated (e.g., air quality impacts, including odors).

2.5.6 Potential Ban on Cultivation within the County

As noted above, the County is also considering adopting an ordinance that would ban all cultivation and commercial activities associated with medical cannabis. Key provisions of a ban ordinance would be:

- prohibit outdoor cultivation in all zones in the unincorporated areas of the County;
- prohibit indoor cultivation in all zones except for allowing a maximum of 6 plants per residence as required by state law, and subjecting such indoor cultivation to reasonable regulations;
- prohibit manufacturing, distribution, testing, and other commercial activities, except dispensaries in conformance with Chapter 17.91 of the County Code; and
- require rehabilitation of abandoned cultivation sites.

Refer to Chapter 6, "Alternatives," for further clarification regarding the County-drafted ban.

3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter is segregated by environmental resource category; each resource category is organized to provide an integrated discussion of the existing environmental conditions (including regulatory setting and environmental setting), potential environmental effects (including direct and indirect impacts), and measures to reduce significant effects, where feasible, of construction and operation of the proposed Medical Cannabis Cultivation and Commerce Ordinance (proposed ordinance or project).

Cumulative and growth-inducing impacts are discussed in Chapters 4, "Cumulative Impacts," and 5, "Other CEQA Sections," respectively.

APPROACH TO THE ENVIRONMENTAL ANALYSIS

In accordance with the State CEQA Guidelines (California Code of Regulations [CCR] Section 15126.2), this DEIR identifies and focuses on the significant direct and indirect environmental effects of the project, giving due consideration to both its short-term and its long-term effects. Short-term effects are generally those associated with construction, and long-term effects are generally those associated with project operation.

As described in Chapter 1, "Introduction," this analysis focuses on those environmental resource topics that were determined to be potentially significant during project scoping (see Section 1.6, "Scope of the DEIR and Effects Found Not to Be Significant," for further details).

The remainder of this chapter addresses the following resource topics:

- Section 3.1, Aesthetics
- Section 3.2, Air Quality and Greenhouse Gas Emissions
- Section 3.3, Biological Resources
- Section 3.4, Cultural Resources
- Section 3.5, Hydrology and Water Quality
- Section 3.6, Land Use and Planning
- Section 3.7, Noise
- Section 3.8, Population and Housing
- Section 3.9, Transportation and Circulation

Sections 3.1 through 3.9 follow the same general format:

Regulatory Setting presents the laws, regulations, plans, and policies that are relevant to each issue area. Regulations originating from the federal, state, and local levels are each discussed as appropriate.

Environmental Setting presents the existing environmental conditions on the project site and surrounding area as appropriate, in accordance with the State CEQA Guidelines (CCR Section 15125). This setting generally serves as the baseline against which environmental impacts are evaluated. Of note, the NOP for the project was issued on April 5, 2016. Typically and in accordance with State CEQA Guidelines, the date the NOP is issued is considered appropriate for establishing existing conditions. Subsequent to issuance of the NOP, the Board of Supervisors approved the Urgency Ordinance on May 10, 2016. Through the application process associated with the Urgency Ordinance, the County was able to determine how many cultivation sites were in some stage of development (including planning) as of May 10, 2016. The County is currently reviewing the applications received, and it is anticipated that several will be denied. Therefore, for the purposes of this analysis, the EIR generally assesses the reasonably foreseeable compliance responses

identified in Chapter 2 (Project Description) as new development under the proposed ordinance, unless otherwise noted.

Environmental Impacts and Mitigation Measures identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic, in accordance with the State CEQA Guidelines (CCR Sections 15126, 15126.2, and 15143). The thresholds of significance used in this DEIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; best available data; and regulatory standards of federal, state, and local agencies. The level of each impact is determined by comparing the effects of the project to the environmental setting. Key methods and assumptions used to frame and conduct the impact analysis as well as issues or potential impacts not discussed further (such issues for which the project would have no impact) are also described.

Project impacts are organized numerically in each subsection (e.g., Impact 3.2-1, Impact 3.2-2, Impact 3.2-3, etc.). A bold-font impact statement, a summary of each impact, and its level of significance precedes the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

The DEIR must describe any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts, and the measures are to be fully enforceable through incorporation into the project (Public Resources Code Section 21081.6[b]). Mitigation measures are not required for effects that are found to be less than significant. Where feasible mitigation for a significant impact is available, it is described following the impact along with its effectiveness at addressing the impact. Each identified mitigation measure is labeled numerically to correspond with the number of the impact that would be mitigated by the measure. Where sufficient feasible mitigation is not available to reduce impacts to a less-than-significant level, or where the County lacks the authority to ensure that the mitigation is implemented when needed, the impacts are identified as remaining “significant and unavoidable.”

3.1 AESTHETICS

This section evaluates the regional visual effects of the project on visual resources within the County. The following analysis considers quality and character of existing scenic resources and the potential visibility of cannabis grows from surrounding areas, including changes related to both the physical characteristics, and lighting and glare. Potential short-term and long-term visual impacts that could result from construction and operation are discussed, and mitigation measures are recommended as necessary to reduce potentially significant adverse effects.

3.1.1 Concepts Related to Evaluation of Scenic Resources

VISUAL CHARACTER AND QUALITY

Scenic resources that contribute to the experience and appreciation of the environment by the general public include the built environment (i.e., developed features), the natural environment (i.e., undeveloped land in its natural state), and the managed environment (i.e., agriculture and any other use where vegetation provides the dominant visual character, but the uniformity required by farming and the associated infrastructure keep the landscape from appearing completely natural). A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views, including panoramic views of great breadth and depth, often from elevated vantage points.

Visual quality is the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of line, form, and color combine in various ways to create landscape characteristics whose variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area.

VIEWER EXPOSURE AND SENSITIVITY

Viewer exposure addresses the variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- landscape visibility;
- the proximity of viewers to the project;
- whether the project would be viewed from above, below, or from a level line of sight;
- whether the line of sight is open and panoramic to the project area or restricted by terrain, vegetation, and/or structures;
- the duration that the project area would be visible to a particular viewer; and
- whether the view is publicly accessible, with large numbers of viewers, or is a private view and experienced by small numbers of viewers.

Specific to the analysis of the proposed ordinance, a public view is a view afforded to the public from any place that the general public has a lawful right to be, including the public right-of-way or neighboring premises, as viewed at ground level without the use of a ladder or similar device.

Viewer sensitivity is the overall measure of the variable receptivity of viewers to adverse visual changes in an existing landscape. Individuals have varying degrees of sensitivity to changes in visual conditions, often depending on the character of the land use from which they are viewing the scene and the overall visual

characteristics of the place. In areas of more distinctive visual quality, such as designated scenic roads, parks, and recreation and natural areas, viewer sensitivity is characteristically more pronounced. In areas of more indistinctive visual quality or visual quality that is generally representative of the setting, sensitivity to change tends to be less pronounced.

LIGHT POLLUTION

Views of the night sky can be an important part of the natural environment, particularly in communities surrounded by extensive open space. Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting.

3.1.2 Regulatory Setting

FEDERAL

National Scenic Byways Program

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. The program was established to help recognize, preserve, and enhance selected roads throughout the United States. The U.S. Secretary of Transportation recognizes certain roads as All-American Roads or National Scenic Byways based on one or more archeological, cultural, historic, natural, recreational, and scenic qualities. State Route (SR) 4 between Arnold (in Calaveras County) and Markleeville (in Alpine County) is designated as a National Scenic Byway; this portion of SR 4 is known as the Ebbetts Pass Scenic Byway (Federal Highway Administration 2016).

STATE

California Energy Commission Building Energy Efficiency Standards for Outdoor Lighting

Title 24, Parts 1 and 6, Building Energy Efficiency Standards, adopted by the California Energy Commission on November 5, 2003 includes requirements for outdoor lighting. These standards are updated periodically. The last update took effect in July of 2014.

The requirements of the outdoor lighting standards vary according to "Lighting Zone." The allowed lighting power is based on the brightness of existing lighting in the surrounding area. This is because the eyes adapt to darker surrounding conditions, and less light is needed to properly see. Providing greater power than is needed potentially leads to debilitating glare, and to an increasing spiral of brightness as over-bright projects become the surrounding conditions for future projects, causing future projects to unnecessarily consume energy and contribute to light pollution.

The California Energy Commission defines the boundaries of Lighting Zones based on U.S. Census Bureau boundaries for urban and rural areas, as well as the legal boundaries of wilderness and park areas. The smallest amount of power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4. By default, government designated parks, recreation areas and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by a local government.

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation. The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view.

The program includes a list of highways eligible to become, or are designated as, official scenic highways; and includes a process for the designation of official State or County Scenic Highways. 24 miles of SR 4 within Calaveras County, from east of Arnold to the Alpine County line, is designated as a California scenic highway. An additional 32 miles of SR 4 within Alpine County is also designated as a California scenic highway (California Department of Transportation 2011).

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (1996) contains the following policies regarding scenic resources that may be applicable to the project:

- **Policy V-6A:** Proposed new development shall consider the scenic qualities of the natural resources in the design of the project.
  - **Implementation Measure V-6A-1:** New development shall be encouraged to avoid extreme topographic modification, and may be required to restore natural contours and vegetation of the land after grading or other land disturbances.
  - **Implementation Measure V-6A-2:** Cluster development with preservation of open space of scenic quality shall be encouraged.
  - **Implementation Measure V-6A-3:** New development shall be encouraged to be designed in a manner which is sensitive to available natural resources.

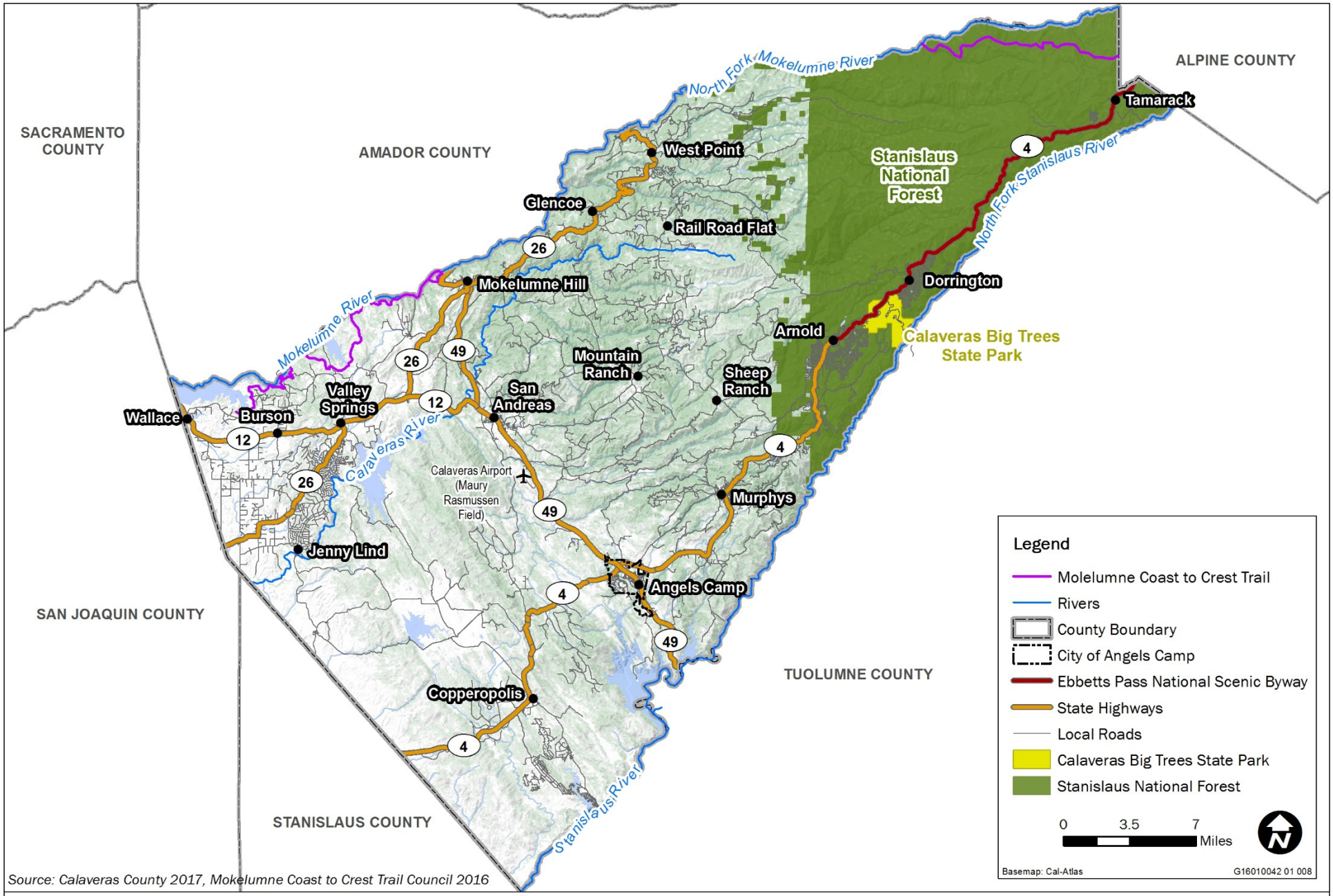
Ebbetts Pass National Scenic Byway Corridor Management Plan

The *Ebbetts Pass National Scenic Byway Corridor Management Plan* (Ebbetts Pass Scenic Byway Association 2013) provides guidance for maintaining the byway section of SR 4 shown in Exhibit 3.1-1. Among activity categories related to the stewardship of the byway is right-of-way and viewshed management, which covers activities that help preserve or enhance the visual quality of the public road right-of-way (the zone from the road pavement to the adjoining property line), as well as the landscape that can be seen from the traveled roadway to the visual horizon. While the Ebbetts Pass Scenic Byway Association has no enforcement authority and the plan does not impose new or additional regulations or restrictions, the association has an obligation to monitor activities and development along the byway and provide comments to the appropriate agencies (Ebbetts Pass Scenic Byway Association 2013).

3.1.3 Environmental Setting

Broadly speaking, the County has a high-quality rural character. A variety of scenic resources, including forests, rolling hills, ranches, agricultural land, historic landscapes, oak woodlands, rock formations and other unique topographical features, river corridors, lakes, and streams contribute to the County's unique sense of place (Calaveras County 2016:COS7). Most communities are small and street lighting in the residential communities is generally limited.

As shown in Exhibit 3.1-1, the County includes portions of the Stanislaus National Forest, Calaveras Big Trees State Park, and the Mokelumne Coast to Crest Trail. The County also includes 24 miles of Ebbetts Pass, a California State Scenic Highway and a National Scenic Byway. The North Fork of the Mokelumne River is registered under the National Wild and Scenic Rivers Program, in part due to remarkable scenic value.



Source: Calaveras County 2017, Mokelumne Coast to Crest Trail Council 2016

Exhibit 3.1-1

Designated Scenic Resources in Calaveras County

ASCENT ENVIRONMENTAL

EBBETTS PASS

Ebbetts Pass was designated as a California State Scenic Highway in 1971 and was granted a national designation as the Ebbetts Pass National Scenic Byway by the U.S. Department of Transportation in 2005. The federal designation is meant to preserve the unique scenic, natural, historical, cultural, archaeological, and recreational resources along the scenic byway (Calaveras County 2016:COS7). Expansive views of granite outcrops, basalt columns, ancient volcanic peaks, deep river canyons, glacially carved valleys, stands of conifers, open meadows, clear mountain lakes, and flowing streams and rivers are afforded along the Ebbetts Pass National Scenic Byway.

3.1.4 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

Visual changes and whether they are considered adverse are highly subjective. One person may conclude that any change in a pleasing visual setting is adverse. Others may find the same changes to be acceptable or even an improvement. Further, there are few formal tools available to evaluate changes to the visual environment and conclude significance. This EIR uses certain terms and concepts to aid the reader in understanding the content of this chapter. These terms and definitions are general in nature; however, they draw upon the methodologies of the U.S. Forest Service (1995) and Federal Highway Administration (1981), two of the relatively few public agencies that have formalized visual resource assessment.

Depending on the extent to which a project would adversely alter the perceived visual character and quality of the environment, a visual or scenic impact may occur. This assessment of potential effects on Calaveras County's aesthetic resources qualitatively considers the types and intensity of development that would be permitted under the proposed ordinance. Community and parcel-level analyses cannot be performed because the location of where cannabis grows would be is not fully known. Therefore, this regional analysis is based on views of existing cannabis grows and the design requirements established in the proposed ordinance to limit changes in aesthetic conditions.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on visual resources if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

IMPACT ANALYSIS

Impact 3.1-1: Have a substantial adverse effect on a scenic vista or substantially damage scenic resources.

Potential commercial cannabis operations within the County that may occur under the proposed ordinance could alter localized views from nearby roadways and the Mokelumne Coast to Crest Trail. The limitations on size and location of cannabis grows, as well as the required screening under the proposed ordinance, would limit the potential for potential cannabis-related uses to alter or have substantial adverse effects on scenic vistas or other scenic resources. The project would have a **significant** impact.

Calaveras County has a wealth of natural beauty and offers many scenic vistas from key travel routes and recreational sites. Of the designated scenic resources noted above, only portions of the Mokelumne Coast to Crest Trail, extending generally from Burson to Mokelumne Hill, are located within the County's jurisdiction. The remaining designated scenic resources, including Ebbetts Pass, the Stanislaus National Forest, Calaveras Big Trees State Park, and other portions of the aforementioned trail, are located either within federal or state lands and are not considered potential sites for development of commercial cannabis operations under the proposed ordinance. The intent of the proposed ordinance is to restrict the location, type, and size of cultivation sites and commercial activity related to production of medical marijuana, and mandate screening and security measures. The ordinance requires setbacks (a minimum of 30 feet) from property lines and eight-foot-tall fencing to prevent views of outdoor operations, including cultivation sites. The fencing required by the ordinance must provide "adequate screening to prevent the marijuana plants from being viewed by members of the public…" and must fully enclose each commercial cannabis operation. While the presence of fencing may obscure immediate views from local roadways and adjacent properties, it would be similar in size and scale to fencing of residential properties, which already exists within the County. Due to its limited fence height (i.e. low profile) requirement, the ordinance would not preclude the availability of scenic vistas or result in direct impacts to scenic resources.

As discussed further in Section 3.5, "Land Use and Planning," the proposed ordinance includes requirements for applicants to obtain zoning clearance certificates, administrative use permits, or conditional use permits from the Planning Department for all commercial cannabis activities. Land uses within the County would continue to be regulated by the *Calaveras County General Plan* (1996 and 2016) and the Calaveras County Code (Zoning Ordinance), and the permit requirements would provide a mechanism for control of land use changes. Therefore, while the proposed ordinance would allow for commercial cannabis activities on a variety of land uses, including those zoned for forest, rural residential, and agricultural use, all land use changes would be consistent with the general plan and subject to County review.

With respect to the designated scenic resources within the County's purview, the proposed ordinance requires a 1,000-foot setback requirement from any sensitive use, including public parks, established in Section 17.91.060 of the County Code. However, this would not necessarily apply to designated scenic resources such as the Mokelumne Coast to Crest Trail. As a result, potential aesthetic impacts to designated scenic resources may occur should cannabis-related operations be located in close proximity. This impact would be **significant**.

Mitigation Measure 3.1-1: Distance from Designated Scenic Resources.

The County shall amend the proposed ordinance to require that any areas of cultivation be located at least one thousand (1,000) feet from any designated scenic resources, as determined by the County consistent with General Plan policies and implementation programs, the California Scenic Highways Program, or the National Scenic Byways Program.

Significance after Mitigation

With the implementation of Mitigation Measure 3.1-1, cultivation sites would be required to maintain a minimum distance of 1,000 feet from designated scenic resources, including the Mokelumne Coast to Crest

Trail. At that distance, no direct impacts to the trail would occur and cannabis-related activities would not effect long distance views. It is also acknowledged that certain cannabis-related activities are currently occurring within the County, prior to and as allowed by the urgency ordinance. Overall, this regulation is anticipated to reduce the visual effects of cannabis cultivation on scenic resources when compared to those conditions by requiring a uniform approach to screening of commercial cannabis operations. As a result, the project would have a **less-than-significant** impact on scenic vistas and scenic resources with implementation of Mitigation Measure 3.1-1.

Impact 3.1-2: Substantially degrade the existing visual character or quality of the project area.

Cannabis grows permitted under the proposed ordinance would generally conform to existing land uses - commercial mixed light and outdoor use would occur in rural areas, personal cultivation would occur in screened areas of yards or in greenhouses, and indoor cultivation would occur in industrial or commercial areas. Therefore, although the County has a high quality rural character and views tend to be sensitive to changes in the landscape, implementation of the project would not substantially degrade the visual character or quality of the area. This impact would be **less than significant**.

By virtue of zoning restrictions established in the proposed ordinance, potential cannabis cultivation sites would be located within more rural areas of the County while potential cannabis processing facilities would be located within non-residential areas of communities within the County.

Construction

Activities associated with the development of commercial cannabis cultivation and processing sites can include extensive tree removal and/or clearing of vegetation, grading of terrain to create new roads (or reclaim abandoned ones), ponds, and areas for cultivation; and construction and installation of new structures including greenhouses, water storage tanks, residential dwellings. These activities would take place as individual grows and other facilities are permitted, and may not occur concurrently. During construction, equipment including haul trucks and excavators, materials stockpiles, partially constructed buildings, and environmental protection measures, such as runoff control, may be visible on individual sites.

Many of the cannabis grows that would be permitted under this ordinance are already in operation. Construction activities at these sites would be limited to maintenance-type work to make the existing sites consistent with the proposed ordinance. Where new outdoor cultivation sites are permitted, tree removal, vegetation clearing, and grading (i.e., terracing) could occur on up to 22,000 square feet of land (1/2 acre) per parcel. In addition, large buildings (approximately 10,000 square feet) could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. New indoor use permits may require construction of large warehouses, which may also require earth-moving construction activities. In addition, due to intensive electricity demands related to the cultivation of cannabis, modifications to existing electricity grids may be required, including new power lines and upgrades to substations. These infrastructure upgrades would be performed by the power provider and would undergo separate environmental review, as appropriate.

On-going construction activities, partially constructed buildings, and equipment would detract from the visual quality of the County by reducing intactness of views, introducing structural elements that detract from the rural setting, and interrupting views of the surrounding environment. However, construction activities at each site would occur over a limited period of time (approximately two to three months per site), and upon completion would be appropriate screened or appear consistent (with respect to structures) to other similar development in the County. As a result, construction activities associated with the proposed ordinance are not anticipated to substantially degrade existing visual character within the County.

Operation

From an aesthetic standpoint, there is nothing particularly unique about commercial cannabis operations when compared with commercial agricultural environments, including existing agricultural operations within the County. Outdoor, mixed light, and nursery commercial cannabis cultivation activities would be located at

least 1,000 feet from any parcel containing sensitive uses and would be set-back a minimum of 30 feet from any property line. Each outdoor and mixed light cultivation site would be surrounded by an 8-foot-tall fence to preclude public views of plants.

The primary goal of the ordinance is to provide clear standards and permitting pathways to help bring baseline and future cultivation and processing activities into compliance with local and state-wide regulations. Bringing baseline/legacy cultivation operations into compliance would help to attenuate environmental effects from existing cultivation activities, including aesthetic impacts resulting from improper operation or poor siting. As noted within certain areas of the County, some existing cannabis-related activities are readily viewable from local roadways and/or located immediately adjacent to roadways and property lines. Larger cultivation operations would also be subject to a discretionary permit under the ordinance, so any aesthetic impacts would be evaluated on a case-by-case basis and neighboring land owners would be given an opportunity to comment and be notified of pending permit decisions.

Although new commercial cannabis operations, especially outdoor cultivation, have the potential to increase the visibility of the built environment and obscure some short-range views, cannabis-related activities permitted under the proposed ordinance would be relatively low intensity uses. Similar to historical agricultural uses in the county, this type of development would not be inconsistent with the existing character of the area and would not substantially alter the aesthetic of the surrounding environment. Therefore, implementation of the project would have a **less-than-significant** impact on the visual character and quality of the County.

Mitigation Measures

No mitigation is required.

Impact 3.1-3: Create a new source of substantial light or glare that would adversely affect views.

Exterior lights and lights associated with mixed-light and some indoor cultivation operations could create a source of substantial light or glare. Although the permit application process includes a provision for planning commission review of proposed lighting, the proposed ordinance does not establish standards to prevent light pollution that could adversely affect views. This is a **significant** impact.

Under the proposed ordinance, new lighting associated with security lighting, as well as lighting used in the cultivation and processing of cannabis, could increase exterior lighting within the County. With respect to security lighting, this illumination would meet the California Energy Commission's Building Energy Efficiency Standards for Outdoor Lighting, which is intended to scale the intensity of illumination to the environment. Further, as established in the proposed ordinance, the Planning Department and Commission would review all use permits pursuant to Chapter 17.88 of the Calaveras County Code. As part of the permit application process, applicants would be required to provide a security plan that includes a discussion of proposed lighting. However, lighting used for cultivation periods, whether interior or mixed-light cultivation, could be perceived by nearby property owners and could increase ambient lighting intensity in the area. Depending on the location of lighting for indoor and/or mixed-light cultivation, spillover of lighting could occur to varying degrees and result in additional light and glare at off-site locations, including nearby residences. Outdoor cultivation, including both commercial and personal/caregiver operations, would be required to provide an eight-foot-tall fence (see Sections 17.95.210 G. and 17.95.270 E. of the proposed ordinance) that would provide some screening/shielding of lighting, however it does not preclude the potential for lighting to be located above a height of eight feet and result in spillover. Therefore, although the permit application process includes a provision for planning commission review of proposed security lighting, the proposed ordinance does not establish standards against which lighting plans, either security-related or pertaining to indoor or mixed-light cultivation, would be measured and prevent spillover/viewing from off-site receptors. As such, plans that result in light pollution could be approved. This is a **significant** impact.

Mitigation Measure 3.1-3: Lighting Standards.

The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240, and 17.95.310:

> All lighting provided in conjunction with facility security or cultivation activities shall be installed, directed, and shielded to confine all direct rays of light within the boundaries of such facilities.

Significance after Mitigation

With the implementation of Mitigation Measure 3.1-3, which modifies the proposed ordinance to include an exterior lighting policy that is consistent with other policies in the Calaveras County Code to avoid light pollution, including glare, light trespass, and over-lighting, the effects of light and glare on views in the County would be **less than significant**.

This page intentionally left blank.

3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section includes a discussion of existing air quality conditions and greenhouse gas (GHG) emissions, a summary of applicable regulations, and an analysis of potential air quality- and GHG emissions-related impacts that would result from grow sites permitted under the proposed ordinance. The method of analysis for construction, operational, local mobile-source, and toxic air emissions is consistent with the recommendations of the Calaveras County Air Pollution Control District (CCAPCD) and the California Air Resources Board (ARB), and the California Air Pollution Control Officers Association. In addition, mitigation measures are recommended as necessary to reduce significant environmental impacts.

3.2.1 Regulatory Setting

FEDERAL

Criteria Air Pollutants

Clean Air Act

The U.S. Environmental Protection Agency (EPA) is in charge of implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), enacted in 1970. Congress made the most recent major amendments to the CAA in 1990

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 3.2-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: CO, NO_2, SO_2, respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan referred to as a State implementation plan (SIP).

Table 3.2-1 Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California	National Standards[1]	
		Standards[2,3]	Primary[3,4]	Secondary[3,5]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–	–
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as Primary Standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb	–
Respirable particulate matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	–	Same as Primary Standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	15.0 µg/m^3	Same as Primary Standard
	24-hour	No Separate State Standard	35 µg/m^3	
Sulfur dioxide (SO_2)[6]	24-hour	0.04 ppm (105 µg/m^3)	–	–
	3-hour	–	–	0.5 ppm (1,300 µg/m^3)
	1-hour	0.025 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–

Table 3.2-1 Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California	National Standards[1]	
		Standards[2,3]	Primary[3,4]	Secondary[3,5]
Lead[7]	30-day Average	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average	–	0.15 µg/m^3	
Sulfates	24-hour	25 µg/m^3	No National Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride [7]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer —visibility of 10 mi or more		

Notes: ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter

[1] National standards (other than ozone, particulate matter, and those standards based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1 day. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

[2] California standards for ozone, CO (except Lake Tahoe), NO_2, and particulate matter are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Concentrations are expressed first in units in which they were issued (i.e., ppb, ppm or µg/m^3). Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

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

[6] The U.S. EPA strengthened the NAAQS for SO_2 on June 2, 2010 by establishing a new 1-hour standard. The U.S. EPA has also revoked the annual and 24-hour standards because they will not add additional public health protection given the new 1-hour standard.

[7] ARB has identified lead and vinyl chloride as TACs with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources: EPA 2017, ARB 2016.

The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Toxic Air Contaminants/Hazardous Air Pollutants

Air quality regulations also focus on toxic air contaminants (TACs), which federal agencies refer to as hazardous air pollutants (HAPs). In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. Instead, EPA and, in California, ARB, regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for toxics to limit emissions.

Greenhouse Gasses

There are no federal laws or regulations addressing greenhouse gasses that are directly applicable to the County's proposed ordinance.

STATE

Criteria Air Pollutants

ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish California ambient air quality standards (CAAQS).

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

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus attention on reducing the emissions from transportation and area-wide emission sources, and provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants/Hazardous Air Pollutants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to ARB's list of TACs.

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

ARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 than in the year 2000. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Greenhouse Gas Emissions

Executive Order S-3-05

In 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which directed the State of California to reduce GHG emissions to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. A year later, in 2006, the Global Warmings Solutions Act (Assembly Bill [AB] 32) was passed in California,

establishing regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions. AB 32 put a cap on statewide GHG emissions, setting a mid-term target of reducing statewide GHG emissions to 1990 levels by 2020. As part of its implementation of AB 32 and Executive Order S-3-05, the California Air Resources Board (ARB) developed a Scoping Plan in 2008. The Scoping Plan, along with its Update in 2013, describes the approach California will take to reduce GHGs to achieve reduction targets and goals.

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

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 these reductions "…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 (Air Resources Board) 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]

Assembly Bill 32 Climate Change Scoping Plan and Updates

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve the 2020 GHG target mandated by AB 32 of 2006.

In May 2014, ARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012. According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020. The update also reports the trends in GHG emissions from various emission sectors.

On January 20, 2017, ARB released its proposed 2017 Climate Change Scoping Plan Update (proposed 2017 Scoping Plan Update), which lays out the framework for achieving the 2030 reductions as established in EO B-30-15 and SB 32 and AB 197 (discussed below). The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030. It also includes recommendations about how GHGs associated with proposed projects should be evaluated under CEQA. Specifically, it recommends that achieving "no net increase" in GHG emissions is the correct overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. In this update, ARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions and that this may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change. At the time of writing this Draft EIR, ARB has not yet approved its proposed 2017 Scoping Plan Update.

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011

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.

Advanced Clean Cars Program

In January 2012, ARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. By 2025, when the rules will

be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016.

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15, establishing a new GHG reduction target for California of 40 percent below 1990 levels by 2030. This target aligns with those of leading international governments such as the 29-nation European Union which adopted the same target in October 2014. California is currently on track to meet or exceed AB 32's current target of reducing GHG emissions to 1990 levels by 2020. This new emissions reduction target places California on a trajectory towards meeting the ultimate goal of reducing statewide emissions to 80 percent below 1990 levels by 2050.

Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015

In consideration of the approaching expiration of SB X1-2 goals, SB 350 of 2015 calls for 1) a new objective for procure 50 percent of the state's electricity from renewables by 2030 and 2) a doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030 with annual targets established by the California Energy Commission.

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 ARB to achieve a statewide GHG emission reduction of at least 40 percent below the AB 32 goal of 1990 levels by 2020 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.

SB 32 was contingent upon AB 197, which grants the State Legislature stronger oversight over ARB's implementation of its GHG reduction programs. AB 197 amended the existing Health and Safety Code sections and establish new statutory directions, including the following provisions. Section 9147.10 establishes a six-member Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature. ARB is required to appear before this committee annually to present information on GHG emissions, criteria pollutants, and toxic air contaminants from sectors covered by the Scoping Plan. Section 38562.5 requires that ARB consider social cost when adopting rules and regulations to achieve emissions reductions, and prioritize reductions at large stationary sources and from mobile sources. Section 38562.7 requires that each Scoping Plan update identify the range of projected GHG and air pollution reductions and the cost-effectiveness of each emissions reduction measure.

Local

Air Quality

In Calaveras County, the CCAPCD is the regulatory agency responsible for maintaining air quality, including implementation and enforcement of State and federal regulations. The CCAPCD has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as permitting of new or modified sources of air pollutants, development of air quality management plans, and adoption and enforcement of air pollution regulations. The CCAPCD and six other Mountain County Air Basin Districts implement the NAAQS through SIPs and CAAQS through Regional Air Quality Plans.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources. CCAPCD is responsible for implementing the SIP and regulating air quality in the Calaveras County region in accordance with all applicable CAAQS.

Attainment Area Designations

The CAA and the CCAA require all areas of California to be classified as attainment, non-attainment, or unclassified as to their status with regard to the NAAQS and CAAQS. Under the CAA and the CCAA, ARB is to designate portions of the State based on air quality monitoring data. Because of the differences between the NAAQS and CAAQS standards, the designation of nonattainment areas is different under the federal and State legislation. Calaveras County has been designated nonattainment for the CAAQS and NAAQS ozone standards and for the CAAQS PM_{10} standard. Designations for all other ambient air quality standards within Calaveras County are unclassified or attainment. (Calaveras County 2014)

Ozone exceedance is a result of "overwhelming transport", a term used by the ARB to recognize that the precursors to ozone are emitted elsewhere (the valley and bay area) and as chemical reactions occur to create ozone it is transported to the County by the prevailing westerly winds. The County is technically exceeding CAAQS for PM_{10} particulate matter however, this was due to one record in 2013 and there have been no records of exceedance in 2014 or 2015. (Calaveras County 2016) Table 3.2-2 identifies attainment status for NAAQS and CAAQS.

Table 3.2-2 Attainment Status Designations for Calaveras County

Pollutant	Federal Designation (NAAQS)	State Designation (CAAQS)
Ozone	Nonattainment	Nonattainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Unclassifiable/Attainment	Unclassified
Carbon Monoxide	Unclassifiable/Attainment	Unclassified
Nitrogen Dioxide	Unclassifiable/Attainment	Attainment
Sulfur Dioxide	Unclassified	Attainment
Lead (Particulate)	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particulates	No Federal Standard	Unclassified

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; $PM_{2.5}$ = fine particulate matter; PM_{10} = respirable particulate matter; SO_2 = sulfur dioxide

Source: Calaveras County 2014

Calaveras County General Plan

The adopted 1996 *Calaveras County General Plan* does not contain policies specific to air quality (Calaveras County 1996).

Toxic Air Contaminants/Hazardous Air Pollutants

Similar to criteria air pollutants, all local air districts are responsible for implementing control measures and best available control technology set forth by ARB to minimize TACs. To date, ARB has identified more than 21 TACs, including diesel particulate matter, and adopted EPA's list of HAPs as TACs.

Calaveras County Air Pollution Control District's Fugitive Dust Prevention and Control and Asbestos Hazard Dust Mitigation Plan

Pursuant to CCAPD Rule 205, "Nuisance", the *Fugitive Dust Prevention and Control Plan and Asbestos Hazard Dust Mitigation Plan* for Calaveras County requires that adequate dust control and asbestos hazard mitigation measures be implemented during activities that involve ground disturbance (CCAPCD 2008).

Greenhouse Gas Emissions

Calaveras County has not developed a climate action plan or similar GHG emissions reduction plan for GHG emission-generating activity in its jurisdiction.

Calaveras County General Plan

The adopted 1996 *Calaveras County General Plan* does not contain policies specific to greenhouse gas emissions reductions. The following policies from the conservation element related to energy are considered applicable to the project:

Energy

- **Policy IV-11A:** Encourage the reduced use of fossil fuels through conservation efforts and the use of alternative forms of energy.
- **Policy IV-11B:** Promote the capability of solar energy use by future residential subdivisions.
- **Policy IV-12A:** Encourage energy savings in all buildings through modifications in building and equipment operation and design.
- **Policy IV-12B:** Promote the use of carpooling, walking, and bicycling (Calaveras County 1996).

3.2.2 Environmental Setting

EXISTING AIR QUALITY CONDITIONS

Topography, Meteorology, and Climate

Calaveras County is part of the approximately 11,000-square-mile Mountain Counties Air Basin (MCAB) along with Amador, Mariposa, Nevada, Plumas, Sierra, and Tuolumne Counties, as well as portions of El Dorado and Placer Counties. Most of the MCAB is in the northern Sierra Nevada, although the western boundary of the MCAB extends into the Sacramento Valley. The general climate of the MCAB varies considerably with elevation and proximity to mountains. The mountains and hills are primarily responsible for wide variations in rainfall, temperatures, and localized winds that occur throughout the region. The temperature variations have a significant influence on wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry within the MCAB. Climates vary from alpine in the eastern areas to more arid at the western edge of the MCAB. (Calaveras County 2014)

Calaveras County is in the eastern portion of the MCAB, in the central Sierra Nevada region, and is approximately 53 miles long from west to east and 20 miles wide from north to south. Characterized by a wide variety of natural and cultural landscapes, ranging from low-elevation oak-covered foothills to high-elevation pine forests supporting the County's agricultural, timber, mining and tourism-based industries, the Mokelumne, Stanislaus and Calaveras rivers flow through the County collecting water from rain and melting snow to fill the County's numerous reservoirs. The western part of Calaveras County is characterized by rolling foothills beginning at an elevation of approximately 300 feet. The terrain rises to the east, reaching a peak height of 8,170 feet near the Alpine County boundary. Deep ravines and steep ridges are found between the foothills and the higher mountains (Calaveras County 1996).

Calaveras County's climate lies in a transitional zone between the Sierra Nevada and the San Joaquin Valley. Climate varies significantly due to great differences in elevation. Temperatures in the higher country range from the low 20's to the middle 80's. The lower foothills range in temperature from the low 30's to the high 90's, exceeding 100 degrees at times during the summer months. Rainfall generally increases with altitude, and snow accounts for much of the precipitation in elevations above 3,000 feet (Calaveras County 1996).

Criteria Air Pollutants

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead are "criteria air pollutants" used as indicators of ambient air quality conditions. Criteria air pollutants are air pollutants for which acceptable levels

of exposure can be determined and for which an ambient air quality standard has been set by the US Environmental Protection Agency (EPA) and ARB.

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. Brief descriptions of key criteria air pollutants, including emission source types and their associated acute and chronic health effects, are summarized in Table 3.2-3.

Table 3.2-3 Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO_X results from the combustion of fuels	increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	incomplete combustion of fuels; motor vehicle exhaust	headache, dizziness, fatigue, nausea, vomiting, death	permanent heart and brain damage
Nitrogen dioxide (NO_2)	combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines	coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	alterations to the immune system, carcinogenesis
Lead	metal processing	reproductive/ developmental effects (fetuses and children)	numerous effects including neurological, endocrine, and cardiovascular effects

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases.

[1] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at high concentrations.

[2] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Sources: EPA 2016. Data compiled by Ascent Environmental 2017.

Monitoring Station Data

ARB operates the air quality monitoring site San Andreas-Goldstrike Road, which is in the northwestern portion of Calaveras County. The data show historical occurrences of air pollutant levels exceeding the NAAQS and CAAQS air quality standards for 2012 through 2015. The number of days that each standard was exceeded is presented in Table 3.2-4. It should be noted that the San Andreas- Goldstrike Road monitoring site is in an area free of trees and catches prevailing winds coming from the west; thus, the monitoring site is not representative of the entire County, which is made up of many valleys and pockets where air is not as easily circulated. (Calaveras County 2014)

Table 3.2-4 Air Quality Data Summary for San Andreas-Goldstrike Road (2013-2015)

Pollutant	Standard		Days Exceeding Standard During		
	State	Federal	2013	2014	2015
Ozone (O_3)	1-Hour	–	0	0	2
	8-Hour	–	2	5	19
	–	8-Hour	1	0	11
$PM_{2.5}$	–	24-Hour	1.1	0	4
PM_{10}	24-Hour	–	6.1	No data	5

Source: ARB 2017

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs) are also used to indicate the quality of ambient air. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Unlike criteria air pollutants, TACs are pollutants of local concern because they can present harmful effects when they are emitted in close proximity to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

According to the *California Almanac of Emissions and Air Quality*, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) was identified as a TAC in 1986 by ARB. NOA is located in many parts of California, and is commonly associated with ultramafic rocks, according to a special publication published by the California Geological Survey (Churchill and Hill 2000). Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil.

Asbestos could be released from serpentinite or ultramafic rock if the rock is broken or crushed. Asbestos could also be released into the air due to vehicular traffic on unpaved roads on which asbestos-bearing rock has been used as gravel. At the point of release, asbestos fibers could become airborne, causing air quality and human health hazards. Natural weathering and erosion processes act on asbestos bearing rock and soil, increasing the likelihood for asbestos fibers to become airborne if disturbed (California Geological Survey 2002: 22).

Asbestos was historically produced in Calaveras County, primarily from sources including the Voorhees, or American deposit, located seven miles southeast of Copperopolis; the Turner and Lloyd prospect located over three miles north of Copperopolis, the Angels Camp deposit, east of SR 49; and several small prospects northwest of San Andreas, near Valley Springs. The largest open-pit asbestos mine in the U.S. (57 acres in area and over 500 feet in depth) operated between 1962 and 1987 about 5 miles southeast of the community of Copperopolis. The open pit associated with the former asbestos mining operation is now used as a landfill repository for asbestos-containing wastes and waste tires. Serpentine, the host rock of chrysotile asbestos, is abundant in the western portion of Calaveras County (Calaveras County 2014).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Sources of odor complaints within the County can include livestock, wastewater treatment plants, and other processing facilities.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

The Physical Scientific Basis

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

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), and fluorinated gases hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Some GHGs such as CO_2 occur naturally, and are emitted to the

atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Human-caused emissions of these 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 factors (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 long enough to be dispersed around the globe. Although the lifetime of any particular GHG molecule is dependent on multiple variables and cannot be determined with any certainty, 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 uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains in the atmosphere (IPCC 2013:467).

Effects of Climate Change on the Environment

IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.3 to 4.8 degrees Celsius (°C) (0.5 to 8.6 degrees Fahrenheit [°F]) by the end of the 21st century (2081-2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1 to 8.6°F by 2100 (CNRA 2012:2).

Physical conditions beyond average temperatures could be affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based on historical data and modeling, the California Department of Water Resources (DWR) projects that the Sierra snowpack will decrease by 25 to 40 percent from its historic average by 2050 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held as snow in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012:5). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. Sea level rose approximately 7 inches during the last century and, assuming that sea-level changes along the California coast continue to reflect global trends, sea level along the state's coastline in 2050 could be 10 to 18 inches higher than in 2000, and 31 to 55 inches higher by the end of this century (CNRA 2012:9).

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable habitat conditions are no longer available (CNRA 2012:11, 12).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012:11).

Greenhouse Gas Emissions Sources

Statewide Greenhouse Gas Emissions Inventory

Emissions of GHGs contributing to global climate change are attributable, in large part, to human activities associated with on-road and off-road transportation, industrial/manufacturing, electricity generation by utilities and consumption by end users, residential and commercial onsite fuel usage, agriculture, and recycling and waste sectors (ARB 2015). The most recent California statewide GHG emissions inventory is summarized in Table 3.2-5. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2015). Emissions of CO_2 are, largely, byproducts of fossil fuel combustion. CH_4, 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. N_2O is also largely attributable to agricultural practices and soil management.

Table 3.2-5 California Statewide Greenhouse Gas Emissions Inventory (1990-2013)

Emissions Sector	MMT CO_2e				Percent of Total (2013)	Percent Change (1990-2013)
	1990[1]	2000	2010	2013		
Transportation	151	176	170	169	37	12
Electricity Generation[2]	111	105	90	90	20	-19
Industrial	103	98	92	93	20	-10
Commercial and Residential Fuel Use	44	43	45	44	10	
Agriculture	23	32	35	36	8	57
High GWP Gases	-[3]	7	15	19	4	n/a
Recycling and Waste	-[3]	7	8	9	2	n/a
Total[4]	**432**	**469**	**456**	**459**	**100**	**6**

Notes: GWP = global warming potential; MMT CO_2e = million metric tons of carbon dioxide equivalent

1 California's first 1990 GHG emissions inventory was prepared in 2007 by ARB using GWP values from the IPCC Second Assessment Report (IPCC 1995). All other inventory years shown use GWP values from the IPCC Fourth Assessment Report (IPCC 2007).

2 Includes both in-state electricity generation and out-of-state imported electricity that is consumed in-state.

3 The High GWP gas and the Recycling and Waste sector were included in the Industrial sector for the 1990 inventory only.

4 Totals may not sum exactly due to rounding.

Sources: ARB 2007, ARB 2015. Data compiled by Ascent Environmental 2017.

Additionally, high global warming potential (GWP) gases have atmospheric insulative properties that are hundreds to tens of thousands of times greater than that of CO_2. HFCs, PFCs, and SF_6 are some of the most common types of high-GWP gases and result from a variety of industrial processes. HFCs and PFCs are used as refrigerants and can be emitted through evaporation and leakage. SF_6 is a powerful electrical insulator used in power transmission and semiconductor manufacturing and is emitted through evaporation and leakage into the atmosphere.

3.2.3 Environmental Impacts and Mitigation Measures

IMPACT ANALYSIS METHOD

The environmental analysis in this EIR is general in nature and does not evaluate the air quality impacts or GHG emissions of specific grow operations. Instead, the analysis focuses on reasonable air quality- and GHG-related impacts that could occur from the distinct types of grow operations that would be permitted

under the proposed ordinance. Limitations and restrictions regarding the types, sizes, and intensity of the permitted grow operations were established under the Medical Cannabis Regulation and Safety Act, which the County is implementing through the proposed ordinance. Limitations related to the types and sizes of permitted grow operations are summarized in Tables 2-2 and 2-3 of Chapter 2, Project Description.

Permitted grow operations could result in an incremental increase in emissions from short-term construction-related activities and long-term operation-related sources. The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program was used to estimate emissions of criteria air pollutants and precursors, as well as emissions of GHGs, associated with the construction of the type of outdoor and indoor commercial grow operations that could be approved under the proposed ordinance, including size limits; and default values in CalEEMod based on the climate conditions and transportation attributes in the county.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. The proper context for addressing this issue in an EIR is as a discussion of cumulative impacts, because although the emissions of one single project, (or even many projects across a county) will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact.

Regarding the evaluation of GHG emission impacts under CEQA, GHG emissions and their contribution to global climate change are inherently cumulative. To that end, an individual project participates in this potential impact by its incremental contribution, combined with the cumulative contributions of all other sources of GHGs, which, when taken together, cause potential global climate change impacts. Therefore, the cumulative global climate change analysis presented in this section of the EIR estimates and analyzes the GHG emissions associated with construction and operation of cannabis grow operations that would develop under the proposed ordinance.

As mentioned above, CalEEMod was used to estimate construction- and operation-related GHGs from new commercial grow sites, including GHG associated with construction equipment, the removal of vegetation containing sequestered carbon, worker commute trips, and combustion of natural gas or propane for space heating in buildings. Indirect GHGs associated with the consumption of electricity, including electricity used to pump irrigation water and power grow lights and other equipment, were estimated using emission factors obtained from PG&E, the electric utility serving Calaveras County. The demand for electricity by commercial indoor grow sites was provided by a study published in the journal, *Energy Policy* (Mills 2012).

The potential for construction and operation of a single grow operation to create objectionable odors affecting a substantial number of people is also discussed qualitatively with a focus on the types of odor sources, their intensity, and their proximity to nearby receptors.

THRESHOLDS OF SIGNIFICANCE

CCAPCD developed mass emission thresholds of significance developed pursuant to Section 15382 and Appendix G of the CEQA Guidelines, which CCAPCD considers to be the allowable incremental contribution by an individual project while still progressing toward overall attainment within Calaveras County and the MCAB (CCAPCD 2012:9, 10). CCAPCD's recommended mass emission thresholds are also used to determine whether a project's emissions of criteria area pollutants and precursors could expose sensitive receptors to substantial pollutant concentrations of criteria air pollutants. Based on Appendix G of the CEQA Guidelines and the associated mass emission thresholds developed by CCAPCD, the collective impact to air quality from grow sites permitted under the proposed ordinance are considered significant if the grow sites would:

- result in construction-generated criteria air pollutant or precursor emissions that exceed CCAPCD-recommended mass emission thresholds of 150 pounds per day (lb/day) for ROG, NO_X, or PM_{10}. CCAPCD does not specific a mass emission threshold for evaluating construction-generated emissions of $PM_{2.5}$. Because $PM_{2.5}$ is a subset of PM_{10}, the mass emission threshold of 150 lb/day for PM_{10} serves as a

proxy to determine whether construction-generated emissions of $PM_{2.5}$ would be a significant contribution to Calaveras County and the MCAB;

- result in a net increase in long-term regional criteria air pollutant or precursor emissions that exceed CCAPCD-recommended mass emission thresholds of 150 pounds per day (lb/day) for ROG, NO_X, or PM_{10}. CCAPCD does not specific a mass emission threshold for evaluating operational emissions of $PM_{2.5}$. Because $PM_{2.5}$ is a subset of PM_{10}, the mass emission threshold of 150 lb/day for PM_{10} serves as a proxy to determine whether operational emissions of $PM_{2.5}$ would be a significant contribution to Calaveras County and the MCAB;

- result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm;

- expose sensitive receptors to substantial pollutant concentrations; or

- create objectionable odors affecting a substantial number of people.

Per Appendix G of the CEQA Guidelines, GHG-related impacts are considered significant if the project would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The CCAPCD does not recommend specific thresholds of significance for evaluating land use development projects and, at the time of writing this EIR, no air district in California, including CCAPCD, has recommended a GHG threshold of significance after ARB released its proposed *2017 Climate Change Scoping Plan Update* on January 20, 2017 (ARB 2017). The 2017 Scoping Plan Update contains new information related to CEQA analyses and mitigation (ARB 2017:136).

> Absent conformity with an adequate geographically specific GHG reduction plan, [ARB] recommends that all new land use development implement all feasible measures to reduce GHG emissions….
>
> [ARB] believes that achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project's GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA. Lead agencies may develop evidenced-based bright-line numeric thresholds—consistent with the [2017 Scoping Plan Update] and the State's long-term GHG goals—and projects with emissions over that amount may be required to incorporate on-site design features and mitigation measures that avoid or minimize project emissions to the degree feasible. Otherwise, a performance-based metric using a climate action plan or other plan to reduce GHG emissions is appropriate.

ARB cites several recent examples of sustainable land use development projects in California that have demonstrated that it is feasible to design projects to achieve zero net additional GHG emissions such as the Newhall Ranch Resource Management and Development Plan (CDFG 2016:2-25 through 2-36).

The 2017 Scoping Plan Update also discusses GHG mitigation (ARB 2017:137):

> To the degree a project relies on GHG mitigation measures, [ARB] recommends that lead agencies prioritize on-site design features and direct investments in GHG reductions in the vicinity of the project, to help provide potential air quality and economic co-benefits locally… Where further project design or regional investments are infeasible or not proven to be effective, it may be appropriate and

feasible to mitigate project emissions through purchasing and retiring carbon credits issued by a recognized and reputable accredited carbon registry.

Therefore, pursuant to the most recent guidance from ARB at the time of writing this EIR, and absent any Calaveras County-specific GHG reduction plans or thresholds, any increase in GHG emissions resulting from implementation of the proposed ordinance would be considered a cumulatively considerable contribution to climate change and a significant impact.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

The establishment and operation of personal/caregiver grow sites is not expected to involve the use of heavy, emissions-generating equipment for construction or operation but instead involve the same types of hand tools and simple power tools typically used in home food gardens. Moreover, the establishment and operation personal/caregiver grow sites would only result in a nominal number of vehicle trips, if any, and, therefore, would not result in additional mobile-source emissions of criteria air pollutants, precursors, and GHGs.

The establishment of new medical-cannabis-related sites permitted under the proposed ordinance could result in ground disturbance activities in areas known to contain NOA, which was identified as a TAC by ARB in 1986. At the point of release, asbestos fibers could become airborne, causing health risks to nearby humans. As reported by the U.S. Geological Survey, within Calaveras County there are areas with reported historic asbestos mines, historic asbestos prospects, and other natural occurrences of asbestos. Additionally, there are areas within the County classified as having the potential to contain ultramafic bedrock, which can be associated with certain forms of serpentine rocks near the surface that could contain NOA (California Department of Conservation 2000). However, pursuant to CCAPCD Rule 205, "Nuisance," the Fugitive Dust Prevention and Control Plan and Asbestos Hazard Dust Mitigation Plan for Calaveras County requires that adequate dust control and asbestos hazard mitigation measures be implemented during activities that involve ground disturbance. Any ground disturbance activity in locations where asbestos-containing soils are suspected or identified would be subject to the countywide Asbestos Hazard Dust Mitigation Plan and, therefore, prevent exposure of NOA to nearby receptors.

Regarding the potential for CO "hot spots" at local intersections, operational activities at individual sites are not anticipated to generate more than 8 trips per day during harvest time, as explained in Section 3.7, "Transportation and Circulation," and it is anticipated that no more than half of the commercial cultivation sites would be in harvest at the same time. Moreover, the cultivation sites would generally be spread throughout the county. Thus, it is not anticipated that vehicle trips generated by cultivation sites would result in excessive congestion at any intersection that experiences high volumes of vehicles experiencing long wait times. For these reasons, it is not anticipated that the additional trips associated with new cultivation would contribute substantially to traffic congestion at affected intersections such that localized CO "hot spots" may occur that exceed the CAAQS and NAAQS for CO.

Construction and operation of permitted grow sites could involve the use of diesel-powered equipment that emits diesel PM, which was identified as a TAC by ARB in 1998. The dose to which receptors are exposed to diesel PM is the primary factor used to determine health risk. Dose is a function of the concentration of a substance 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 any exposed receptor. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the duration of the activity generating TACs (OEHHA 2012:11-3). Consequently, it is important to consider that the use of diesel equipment would primarily be limited to the period or construction at each new commercial grow site, which is anticipated to last approximately 2 months. Also, studies show that diesel PM is highly dispersive (i.e., concentrations decrease 70 percent at 500 feet from the source) (Zhu et al. 2002). Therefore, considering the highly dispersive properties of diesel PM, the relatively low mass of diesel PM emissions that would be generated during the construction of each new grow site, and the relatively short duration of construction

activities, construction-related emissions of diesel PM would not expose sensitive receptors to substantial TAC concentrations and associated health risk.

IMPACT ANALYSIS

Impact 3.2-1: Short-term construction-generated emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$.

Short-term, construction-generated emissions would not exceed CCAPCD-recommended mass emission thresholds for ROG, NO_X, PM_{10}, and by proxy, $PM_{2.5}$. Thus, short-term construction emissions of criteria area pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts in Calaveras County and the MCAB. This impact would be **less than significant**.

Construction of commercial grow sites would require earthwork and use of heavy off-road equipment that would temporarily generate exhaust emissions and fugitive dust. Generally, the intensity of construction activity would be similar to a residential renovation or building addition project. Construction of outdoor grow sites would involve the clearing of vegetation, grading or other earth disturbance activities to establish a grow area, the laying of a gravel pad to support the containers in which the cannabis is planted. Construction of indoor grow sites would involve the construction of a greenhouse or grow building of up to 5,000 square feet (sq. ft.). An approximately 1,000-sq.-ft. building for processing harvested cannabis may also be constructed at both outdoor and indoor grow sites. As noted in Chapter 2, "Project Description," this analysis assumes that commercial cannabis manufacturing and processing facilities would occupy available existing commercial/industrial buildings within the County. As a result, construction emissions associated with such facilities are not anticipated nor included as part of this impact.

Construction-generated emissions would be temporary in nature. Emissions of NO_X would be primarily associated with one or two pieces of off-road construction equipment. Additional emission sources would include on-road trucks used to haul equipment and materials to and from the site and worker vehicles for commuting. Emissions of fugitive PM_{10} and $PM_{2.5}$ dust would primarily be associated with ground-disturbance activities during site preparation and grading, and may vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area. PM_{10} and $PM_{2.5}$ are also contained in vehicle and equipment exhaust. Architectural coatings applied to buildings would be the primary source or ROG.

The construction of individual grow sites could last approximately one to two months. The County anticipates that as many as five outdoor commercial grow sites and two indoor commercial grow sites could be constructed at the same time. Construction-related emissions were estimated using CalEEMod and are summarized in Table 3.2-6. To be conservative, the modeling estimates the total maximum daily emissions that could occur if ten outdoor grow sites and two indoor grow sites would be under construction simultaneously. Refer to Appendix B for detailed modeling input parameters and results.

Table 3.2-6 Maximum Daily Construction Emissions of Criteria Air Pollutants and Precursors (lb/day)

	ROG	NO_X	PM_{10}	$PM_{2.5}$
Ten Outdoor Grow Sites	50	119	73	40
Two Indoor Grow Sites	56	17	7	4
Combined Total	106	136	80	44
Threshold of Significance	150	150	150	—[1]

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less.
Refer to Appendix B for detailed assumptions, modeling parameters, and output files.
[1] CCAPCD does not recommend a mass emission threshold for $PM_{2.5}$ (CCAPCD 2012:12).
Source: Modeling performed by Ascent Environmental in 2017.

As shown in Table 3.2-6, construction-generated emissions of NO_X, ROG, and PM_{10} would not exceed CCAPCD-recommended mass emission thresholds. Therefore, emissions of criteria air pollutants and precursors generated during construction would not result in an exceedance an applicable CAAQS and NAAQS and would not contribute to nonattainment conditions in the MCAB with respect to the CAAQS for PM_{10} and ozone. Moreover, construction-generated emissions of PM_{10} and $PM_{2.5}$ would not have the potential to contribute to localized concentrations of criteria air pollutants that exceed applicable CAAQS and NAAQS. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.2-2: Long-term operational emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$.

Operation of the anticipated number of grow sites in the county would result in peak emissions of criteria air pollutants and precursors during the harvest season. While mass emissions thresholds for other criteria air pollutants and precursors would not be exceeded, countywide harvest-related emissions of NO_X would exceed the mass emission threshold recommended by CCAPCD. Thus, operational emissions of NO_X, a precursor to regional ozone, could conflict with air quality planning efforts in the MCAB and contribute substantially to the nonattainment status of Calaveras County with respect to the NAAQS and CAAQS for ozone. This would be a **significant** impact.

New cannabis-related sites established under the proposed ordinance would result in long-term operational emissions of criteria air pollutants and precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$. Emissions associated with the operation of cannabis-related sites across the county would be highest when the most cultivation sites are in harvest at the same time. This is because 10 to 15 workers are needed at each grow site to work the harvest. As explained in further detail in Section 3.7, "Transportation and Circulation," it is anticipated that up to half of the grow sites could be in harvest at the same time. Harvest activities at outdoor grow sites would also involve the use of off-road equipment, particularly utility vehicles (e.g., John Deere Gator™) that are typically powered by gasoline or diesel. Propane may also be used to heat indoor spaces used during harvest. The harvest of a single grow site occurs over a 2- to 3-week period.

Regional area- and mobile-source emissions of criteria air pollutants and precursors associated with operation of the project were modeled using CalEEMod. Refer to Appendix B for detailed modeling input parameters and results. Table 3.2-7 summarizes the modeled operation-related emissions of criteria air pollutants and precursors under buildout conditions in 2020, which is considered the earliest possible year of achieving the total anticipated number of operations anticipated under the proposed ordinance. Refer to Appendix B for detailed modeling input parameters and results.

As shown in Table 3.2-7, the level of NO_X emitted during harvest season (i.e., September through October) could exceed the CCAPCD-recommended mass emission thresholds of 150 lb/day. Therefore, because NO_X is a precursor of ozone, emissions of NO_X generated during harvest season could contribute to an exceedance of an applicable CAAQS and NAAQS and could contribute to the nonattainment condition in the MCAB with respect to the CAAQS for ozone. Therefore, this would be a **significant** impact.

Table 3.2-7 Daily Operational Emissions of Criteria Air Pollutants and Precursors during Peak Harvest Season (lb/day)

	ROG	NO_X	PM_{10}	$PM_{2.5}$
Outdoor Grow Sites				
Mobile Sources (Worker Trips)	21	86	35	1
Off-Road Equipment[1,2]	15	134	10	10
Propane Combustion[1]	<1	<1	<1	<1
Total	36	220	46	11

Table 3.2-7 Daily Operational Emissions of Criteria Air Pollutants and Precursors during Peak Harvest Season (lb/day)

Indoor Grow Sites				
Mobile Sources (Worker Trips)	<1	2	1	<1
Off-Road Equipment[2]	<1	<1	<1	<1
Propane Combustion[1]	<1	<1	<1	<1
Total	<1	2	1	<1
Combined Total	36	222	46	11
Threshold of Significance	150	150	150	—[3]

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

Refer to Appendix B for detailed assumptions, modeling parameters, and output files.

[1] Some emissions may be generated by off-road equipment used to tend to growing plants and by propane used to heat indoor spaces while grow sites are not in harvest.

[2] Utility vehicles such as the Gator™ manufactured by John Deere would be the primate emissions source among off-road equipment used at outdoor grow sites and may be used to some degree outside the harvest season. Utility vehicles would not be used at indoor grow sites.

[3] CCAPCD does not recommend a mass emission threshold for $PM_{2.5}$ (CCAPCD 2012:12).

Source: Modeling performed by Ascent Environmental in 2017.

Mitigation Measure 3.2-2: Prohibit the use of fossil fuel-powered outdoor power equipment at cannabis grow sites and processing facilities

The County shall amend the proposed ordinance to include the following text in Sections 17.95.210 and 17.95.240:

> Refrain from using portable generators and off-road equipment that is powered by gasoline, diesel, or other fossil fuels to assist in the cultivation and harvesting of cannabis (operational activities). This requirement applies to all off-road equipment including, but not limited to, utility vehicles, tractors, and trimmers. Electric- or human-powered versions of these equipment can be used.

Significance after Mitigation

It is anticipated that inspection of compliance with this additional requirement of the proposed ordinance would occur during annual inspection by Code Compliance. Implementation of Mitigation measure 3.2-2 would eliminate emissions of NO_X and other criteria air pollutants and precursors generated by gasoline- and diesel-powered equipment used at cannabis grow sites. For instance, instead of using gasoline- or diesel-powered utility vehicles at grow sites applicants could use electric-powered versions such as the John Deere Gator electric utility vehicle (John Deere 2017) or the Bad Boy Recoil (Textron Specialized Vehicles Inc. 2016). Based on the estimates provided in Table 3.2-2, Mitigation Measure 3.2-2 would reduce NO_X emissions by 134 lb/day to 88 lb/day, which is less than the CCAPCD-recommended threshold of 150 lb/day. Therefore, this impact would be reduced to a **less-than-significant** level.

The use of electric powered equipment would result in increased consumption of electricity. Indirect emissions of GHGs associated with this consumption of electricity are addressed under Impact 3.2-3 and Mitigation Measure 3.2-3.

Impact 3.2-3: Generation of greenhouse gas emissions.

Construction and operation of grow sites permitted under the proposed ordinance would result in a net increase in GHG emissions. This would be a cumulatively considerable contribution to climate change and, therefore, a **significant** impact.

Construction and operation of grow sites would result in GHG emissions. During construction of grow sites GHGs would be emitted by construction equipment, haul trips transporting equipment and materials, and commute trips by construction workers. The establishment of new grow sites would also result in the

removal of vegetation that serves to sequester carbon. Grow sites permitted under the proposed ordinance would also result in long-term operational emissions of GHGs associated with the use of off-road equipment, worker commute trips, and on-site combustion of propane or natural gas for heating indoor grow sites or processing facilities. These direct sources of construction- and operation-related GHGs were estimated using CalEEMod. Detailed modeling input parameters and results are provided in Appendix B.

Electricity consumed to power well pumps that would supply irrigation water to outdoor and indoor grow sites, as well as electricity used to power grow lights and other equipment at indoor grow sites, would result in indirect emissions of GHGs associated with electricity generation from the grid. The level of GHGs associated with electricity consumption was estimated using a GHG intensity factor for Pacific Gas & Electric, which is the utility that provides electric service to Calaveras County. These calculations are also provided in Appendix B.

Table 3.2-8 summarizes the annual level of GHGs from grow sites across the county. For the purposes of this analysis, total level of construction-related emissions, is amortized over the operational life of a grow site (assumed to be 10 years).

Table 3.2-8 Summary of Annual Greenhouse Gas Emissions Associated with Commercial Cannabis Operations Across Calaveras County

	Outdoor Grow Sites	Indoor Grow Sites	Units
Upfront Activities (one-time)			
Construction	7,222	140	MT CO_2e
Loss in sequestration by scrub vegetation [1]	5,663	30	MT CO_2e
Total	12,885	170	MT CO_2e
Combined Total Upfront Emissions	13,054		MT CO_2e
Ongoing Operations (annual)			
Mobile Sources (Worker Trips)	905	54	MT CO_2e/year
Power Equipment (using petroleum fuels) [2, 3]	1,557	—[4]	MT CO_2e/year
Propane Combustion	142	17	MT CO_2e/year
Electricity Use for Irrigation Wells	87	2	MT CO_2e/year
Electricity Use for Indoor Grow Lights and Equipment	—[5]	765	MT CO_2e/year
Total	4,397	848	MT CO_2e/year
Combined Total Operational Emissions	5,245		MT CO_2e/year
Threshold of Significance	0		MT CO_2e/year

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

Refer to Appendix B for detailed assumptions, modeling parameters, and output files.

[1] The loss in vegetative sequestration of GHGs occurs due to the one-time removal of vegetation to initially establish a grow area or building site. The computed GHG value is based on the removal of scrub vegetation instead of other vegetation types such as grassland and forest.

[2] Utility vehicles such as the Gator™ manufactured by John Deere would be the primate emissions source among off-road equipment used at outdoor grow sites.

[3] If all outdoor power equipment used at outdoor commercial grow sites were electric-powered the level of GHG associated with the associated consumption of electricity would be approximately 109 MT CO_2e/year.

[4] It is not anticipated that utility vehicles would be used at indoor grow sites.

[5] The modeling estimates shown assume that outdoor grow sites would not use indoor equipment for cultivation.

Source: Modeling performed by Ascent Environmental in 2017.

As shown in Table 3.2-8, the projected 750 outdoor grow sites and 15 indoor grow sites would generate a combined 5,245 MT CO_2e/year. Because these GHG emissions could conflict with the statewide reduction

targets established by AB 32 of 2006, SB 32 of 2016, and EO B-30-15, they would be a cumulatively considerable contribution to climate change. This would be a **significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.2-2.

Mitigation Measure 3.2-3: Reduce GHG emissions associated with the cultivation, processing, and distribution of cannabis

The County shall amend the proposed ordinance to include the following text under Section 17.95.200:

1. Each applicant shall demonstrate a reduction in annual GHG emissions equivalent to a one-time offset of 17.2 metric tons of CO_2e for construction-related emissions and an offset of 5.9 metric tons of CO_2e/year for operational emissions or a reduction equivalent to the construction and annual operational GHG emissions associated with the specific cultivation site, as calculated using an ARB-accepted model/technique. The manner in which this is demonstrated may include, but is not limited to, the following in order of preference to reduce emissions:

    a. Photovoltaic panels on on-site structures. The extent to which solar is considered feasible shall be based on roof orientation, shade, and other factors. Each applicant shall submit a determination/evaluation of whether on-site solar is feasible or infeasible prepared by a qualified professional to the Planning Department;

    b. Provision of and documentation that the well pump used to supply irrigation water to the cannabis grow area is powered by photovoltaic cells;

    c. Documentation of attainment of offset credits of metric tons of carbon dioxide-equivalent associated with construction and operation of the new outdoor commercial grow site, including the loss of carbon-sequestering vegetation. The offset credit must be issued by a recognized and reputable carbon registry that validates that the offset credit is real, additional, quantifiable, and enforceable. Documentation demonstrating purchase of the annual offset credit must be provided to the Planning Department prior to the beginning of the first cannabis grow cycle during each calendar year.

The County shall also amend the proposed ordinance to include the following text under Section 17.95.230:

1. Each applicant shall demonstrate a reduction in annual GHG emissions equivalent to a one-time offset of 11.3 metric tons of CO_2e for construction-related emissions and an offset of 56.5 metric tons of CO_2e/year for operational emissions or a reduction equivalent to the construction and annual operational GHG emissions associated with the specific cultivation site, as calculated using an ARB-accepted model/technique. The manner in which this is demonstrated may include, but is not limited to, the following in order of preference to reduce emissions:

    a. Photovoltaic panels on on-site structures. The extent to which solar is considered feasible shall be based on roof orientation, shade, and other factors. Each applicant shall submit a determination/evaluation of whether on-site solar is feasible or infeasible prepared by a qualified professional to the Planning Department;

    b. Provision of and documentation that the well pump used to supply irrigation water to the cannabis grow area is powered by photovoltaic cells;

    c. Documentation of attainment of offset credits of metric tons of carbon dioxide-equivalent associated with construction and operation of the new outdoor commercial grow site, including the loss of carbon-sequestering vegetation. The offset credit must be issued by a recognized and reputable carbon registry that validates that the offset credit is real, additional, quantifiable, and

enforceable. Documentation demonstrating purchase of the annual offset credit must be provided to the Planning Department prior to the beginning of the first cannabis grow cycle during each calendar year.

Significance after Mitigation

Implementation of Mitigation Measures 3.2-2 and 3.2-3 are on-site measures that would result in GHG reduction measures that are considered feasible.

Mitigation Measure 3.2-2, which prohibits the use of gasoline- and diesel-fueled equipment at commercial grow sites, would result in a reduction in GHGs associated with the use of outdoor power equipment. If all outdoor power equipment used at outdoor commercial grow sites were electric-powered, the level of GHGs associated with the consumption of electricity would be approximately 109 MT CO_2e/year. See Appendix B for detailed assumptions and calculations.

Mitigation Measure 3.2-3 requires individual grows to reduce emissions based on a standardized estimation of emissions associated with outdoor and indoor grows, including through the installation and use of photovoltaic cells on buildings and well equipment used for commercial cannabis operations or the purchase of offsets. The measure also provides on-site methods of reducing GHG emissions, consistent with ARB's recommendation (ARB 2017:137). The purchase of offset credits, as required by Mitigation Measure 3.2-3, is considered feasible and would offset the remainder of emissions. At the time of writing this EIR, offsets can be purchased for approximately $14 per MT CO_2e per year (TerraPass 2017). Therefore, all GHG emissions associated with uses under the proposed ordinance would be either eliminated or offset, and this impact would be reduced to a **less-than-significant** level.

While implementation of Mitigation Measures 3.2-2 and 3.2-3 is intended to reduce GHG emissions and it would also result in some reduction in emissions of criteria air pollutants and precursors from area and mobile sources.

Impact 3.2-4: Exposure of people to objectionable odors.

Implementation of the proposed ordinance would allow for construction and operation of cannabis-related activities, which would generate localized construction and operational odors associated with equipment operation, which could be odor sources to nearby residents. However, the cultivation and processing of cannabis generates odors associated with the plant itself, which during maturation can produce substantial odors. Setbacks are provided as part of the proposed ordinance; however, they do not preclude the generation of odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to a substantial number of people. This would be a **significant** impact.

The occurrence and severity of odor impacts from grow operations permitted under the proposed ordinance would depend on numerous factors, including the nature, frequency, and intensity of the odor sources; wind speed and direction; the proximity to off-site receptors; and the sensitivity of exposed receptors. Although exposure to offensive odors generally do not result in physical harm, they can be perceived as objectionable leading to considerable distress among the public and can result in citizen complaints to local governments and regulatory agencies. The potential for exhaust emitted by equipment used in the construction and operation of grow sites, and the potential for cannabis plants to create objectionable odors affecting a substantial number of people are discussed separately below.

Construction- and Operations-Related Equipment Exhaust

Odors emitted in the exhaust of on-site engines during construction and operation, particularly diesel-fueled engines, may be considered offensive to some individuals. The generation of these odor emissions would vary on a day-to-day basis depending on the type of on-site activities taking place. Also, the types of diesel emitting equipment would not be unlike other diesel-powered equipment used in developed areas of the county. Moreover, such emissions would be intermittent in nature and would dissipate rapidly with increasing distance from the source. For these reasons, the use of exhaust-emitting equipment for the

construction and operation of grow sites would not result in the exposure of a substantial number of people to objectionable odors.

Cannabis-Related Odors

Cannabis plants are known to emit odors, especially during the final stages of the cultivation cycle (i.e., typically beginning in August and continuing through harvest season in September and October). The potential for odors to be perceived and considered objectionable would depend on the size of the cannabis-related operation, the receptor, the strain of cannabis being cultivated/processed, the presence of nearby vegetation, and topographic and atmospheric conditions. As a result, an appropriate buffer distance outside of which odors could not be perceived is not considered feasible and would depend on site-specific conditions. Generally, the larger the size of the canopy area, the greater the potential for odor to be evident to off-site receptors. Many of the potential applicants seeking coverage under the proposed ordinance are anticipated to be outdoor grow operations on large parcels (i.e., greater than five acres in size) where grow areas would be set back a greater distance from adjacent land uses, and where attendant odors would less likely be detectable by people offsite. Odors emitted by indoor cultivation and processing activities can be controlled through the use of activated carbon filters and other manufactured odor control/masking substances (e.g., gels and sprays designed to mask odors). The masking and/or control of odors at outdoor cannabis-related activities is largely ineffective and limited to the use of fragrant landscape plants, such as citronella, spearmint, chrysanthemums. In addition, the burning of excess organic material associated with the cultivation and processing of cannabis could result in noticeable odors at off-site locations. While the proposed ordinance requires a minimum setback of 30 feet from property lines and 1,000 feet from schools, parks, and other facilities where children may congregate, it does not preclude the potential for off-site residential receptors to be exposed to odors emitted by mature cannabis plants that they find objectionable. As a result, this would be a **significant** impact.

Mitigation Measure 3.2-4a: Prohibit burning of cannabis and other vegetative material.

The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240, 17.95.270, and 17.95.310:

> The burning of excess plant material associated with the cultivation and processing of medical cannabis is prohibited.

Mitigation Measure 3.2-4b: Indoor cultivation odor control.

The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.240:

> Install and maintain a filtered ventilation system which relies on activated carbon filtration, negative ion generation, and/or other odor control mechanism demonstrated to be effective in reducing cannabis odors.

Mitigation Measure 3.2-4c: Increase setback requirement.

The County shall amend the proposed ordinance to reflect a setback of at least 75 feet from any property line instead of 30 feet within Sections 17.95.210, 17.95.240, 17.95.270, and 17.95.310.

Significance after Mitigation

While the mitigation identified above would reduce indoor cultivation and some outdoor cultivation and processing odors by reducing odor generating activities and increasing the distance between potential sources and receptors, it would not preclude the potential for people to perceive objectionable odors within the County attributable to commercial cannabis operations. As a result, while this impact would be reduced, it would remain **significant and unavoidable**. Odors from individual sites may be reduced to a less-than-significant level on a case-by-case basis, however, it is not possible to ensure that cannabis-related odors within the County would not be perceived as objectionable.

3.3 BIOLOGICAL RESOURCES

This section addresses biological resources known or with potential to occur in Calaveras County (project area), and describes potential effects of project implementation on those resources. Biological resources include common vegetation and habitat types, sensitive plant communities, and special-status plant and animal species. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the potential direct and indirect impacts of project implementation, and mitigation measures recommended to address impacts determined to be significant or potentially significant. Federal, state, and local regulations that pertain to biological resources are summarized.

The information presented in this EIR chapter is based on review of existing and available information and is regional in scope. Data, analysis, and findings provided in this chapter are programmatic for broad application, rather than project-specific. And thus, site-specific, project-level evaluations will be necessary to determine future project-specific environmental effects and feasible mitigation measures.

3.3.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Many surface waters and wetlands in California meet the criteria for waters of the United States. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities."

STATE

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB's jurisdiction includes federally protected waters as well as areas that meet the definition of "waters of the state." Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401 provided they meet the definition of waters of the state. Actions that affect waters of the state, including wetlands, must meet the RWQCB's waste discharge requirements.

California Regional Water Quality Control Board – Central Valley Region Order R5-2015-0113

The Waste Discharge Requirements General Order for Discharges of Waste Associated with Medical Cannabis Cultivation Activities, regulates discharges to waters of the state and includes findings and regulatory considerations. The following are related to this chapter analysis or biological resources.

4. Cultivation activities that occupy and/or disturbed less than 1,000 square feet, have not been demonstrated to cause more than *de minimis impacts* to water quality. Such cultivation activities do not pose a significant threat to water quality and are not covered under this General Order.

17. Discharges of wastes from cannabis cultivation activities that threaten to impact the beneficial uses of waters of the state include:

    i. Discharges of sedimentation from graded roads, grow sites, and spoil sites to surface waters;

    ii. Discharges of soil, fertilizers, pesticides, herbicides, and rodenticides, which threated to impact surface waters and ground water and which impact wildlife;

    iii. Discharges from improperly constructed and unmaintained stream crossings and culverts;

    iv. Development within and adjacent to wetlands and riparian zones;

    v. Discharges of trash associated with cannabis cultivation;

    vi. Discharges of human waste and household refuse; and

    vii. Spills and leaks of petroleum products and other chemicals associated with pumps and cultivation equipment.

23. Dischargers that own sites that have not yet been developed for cannabis cultivation can only receive regulatory coverage under this General Order upon demonstrating compliance with CEQA by completing the Notice of Intent (NOI) included with this Order as Attachment B. Completing the NOI includes making a demonstration that:

    i. Any potential impacts to wetlands and vernal pools have been permitted pursuant to section 401/404 of the federal Clean Water Act;

    ii. A Section 1602 Streambed Alteration Agreement has been procured, if necessary;…[and]

    vi. That any and all impacts to special-status species have been fully mitigated…

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include "harm" or "harass," like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Native Plant Protection Act (NPPA) of 1977

The NPPA (Fish and Game Code, Sections 1900-1913) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the NPPA, which ensures that state-listed plant species are protected when state agencies are involved and projects are subject to CEQA. In this case, plants listed as rare under the NPPA are not protected under CESA, but rather may receive protection in response to potentially significant impacts, in accordance with CEQA.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code describe the take prohibitions for fully protected birds, mammals, reptiles and amphibians, and fish. Species listed under these statutes may not be taken or possessed at any time and no incidental take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or

- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake such as the project's three-sided culvert installation. This is discussed in more detail below.

Oak Woodlands Conservation Act

The Oak Woodlands Conservation Act (Senate Bill [SB] 1334) was signed into California law on September 24, 2004. Section 21083.4 of the California Public Resources Code requires counties to determine if a

project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the county determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (1996) contains the following policies regarding biological resources that may be applicable to the project:

- **Policy V-1A:** Review proposed development for potential impacts to significant wildlife and botanical habitats.
  - **Implementation Measure V-1A-1:** Allow a maximum density of one dwelling unit per 40 acres on lands within the following significant protected wildlife and botanical habitats outside of Community Centers, Residential Centers, and Community or Special Plan Areas:
    - Railroad Flat Deer Protected Areas
    - Bald Eagle Wintering Area
    - Golden Eagle Nesting Area
    - Big Trees State Park
    - UOP Research Area
  - **Implementation Measure V-1A-2:** Cluster development with preservation of open space of scenic quality shall be encouraged. When reviewing discretionary permits, require a vegetative and/or wildlife assessment and appropriate mitigation measures for those areas identified as potentially containing sensitive species as identified in Tables V-1 and V-2 of the Calaveras County General Plan.
  - **Implementation Measure V-1A-3:** Utilize the Environmental Protection zone of the County Zoning Code to regulate development standards within significant protected wildlife and botanical habitats.
  - **Implementation Measure V-1A-4:** Actively solicit assistance from federal and state agencies and non-profit organizations with expertise in habitat management to work cooperatively with public and private property owners located in wildlife and botanical habitats toward the appropriate management of their lands.
  - **Implementation Measure V-1A-5:** Encourage the establishment of protective easements in wildlife and botanical habitats under the Open Space Easement Act of1974 (Government Code section 51070 *et seq*.).
- **Policy V-2A:** Review proposed development projects for potential effects on nearby and adjacent streams, rivers and lakes.
  - **Implementation Measure V-2A-1:** Require appropriate grading and drainage plans for proposed development projects.
  - **Implementation Measure V-2A-2:** Require erosion control measures for all grading and earth moving activities which may contribute to significant sedimentation.
  - **Implementation Measure V-2A-3:** Develop a County grading ordinance.
  - **Implementation Measure V-2A-4:** Investigate utilizing the services of the Soil Conservation Service.

- **Policy V-3A:** Review proposed development projects for potential impacts to riparian areas.
  - **Implementation Measure V-3A-1:** Require that any 100-year flood plains be shown on all plot plans and subdivision maps for areas subject to inundation.
  - **Implementation Measure V-3A-2:** Amend the County Zoning and Subdivision Codes to protect riparian habitat.

Calaveras County Voluntary Oak Woodland Management Plan

The Calaveras County's Oak Woodland Management Plan (Plan) was adopted by the County Board of Supervisors on February 3, 2007. The Plan sets voluntary oak protection guidelines for oak conservation planning and use of oak woodland habitats throughout the County. The Plan also provides direction to landowners, the Calaveras County Planning Department, and developers regarding activities that have the potential to adversely impact oaks and oak woodland habitat. The adoption of the Plan by resolution of the County Board of Supervisors also gave the County the opportunity to obtain funding through the California Oak Woodlands Conservation Program (California Oak Woodlands Conservation Act - Fish and Game Code, Division 2, Chapter 4, Article 3.5, Section 1360-1372). This program provides funding for oak education, landowner assistance, and projects designed to conserve and restore oak woodlands. In addition, adoption of the Plan allowed the County to create a local oak mitigation fund reserve with the purpose of providing monetary support for oak conservation activities specific to Calaveras County. Activities supported by the program also encourage interaction among ranchers, conservationists, educators, and others who share similar values regarding oak woodlands.

The goals of the Calaveras County Oak Woodland Management Plan are to:

- support and encourage voluntary, long-term private stewardship and conservation of Calaveras' oak woodlands;
- develop a plan that would provide incentives to encourage farming and ranching operations that are operated in a manner that protect and promote healthy oak woodlands and provide wildlife value;
- provide support to protect and encourage farming and ranching operations that are operated in a manner that promotes healthy oak woodlands;
- encourage local land use planning that is consistent with the preservation of oak woodlands, particularly special oak woodlands habitat elements;
- provide educational and resource support programs that assist private landowners in the management and protection of their oak woodlands and associated wildlife habitat; and
- maintain information on the status of oaks and oak woodland within Calaveras County (Calaveras County 2007).

3.3.2 Environmental Setting

This environmental setting section contains information of the following existing biological resources:

- project location,
- land cover types and associated biological habitat uses,
- waters of the United States (including wetlands),
- habitat corridors,
- special-status species, and
- sensitive natural communities.

PROJECT LOCATION

Calaveras County is located in California's central Sierra Nevada region, ranging from low-elevation oak-covered foothills to high-elevation pine forests. The Mokelumne, Stanislaus, and Calaveras rivers flow through the County collecting water from rain and melting snow to fill the County's numerous reservoirs. The majority of land within the County falls within the regulatory jurisdiction of the County, with the exception of the City of Angels Camp, the only incorporated city within the county boundaries, and federal and state lands (approximate 13 percent of the land area of the County). Approximately 39,000 acres within the County are managed by the Bureau of Land Management with an additional 6,000 acres, associated with the Calaveras Big Trees State Park, owned by the State of California.

LAND COVER TYPES

Information about the location and distribution of land cover types in the project area was compiled using data from the sources listed below.

- California Vegetation Maps (CALVEG) for the Northern Sierra, Southern Sierra and Central Valley ecological zones (USFS 2014);
- *Biological Resources Background Document Calaveras County General Plan Update* (Calaveras County 2013);
- *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009);
- *A Guide to the Wildlife Habitats of California* (Mayer and Laundenslayer 1988);
- *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986); and
- *Calaveras County General Plan* (Calaveras County 1996).

The land cover data obtained from these sources varied from general natural community types to specific vegetation alliances. Therefore, for the purposes of this program-level document, data were grouped into general land cover types within three broad categories: wildlands, agriculture, and developed and/or disturbed areas. These general land cover types are shown on Exhibit 3.3-1. Accordingly, the land cover type descriptions presented below are intended to provide regional-scale, general information about the project area.

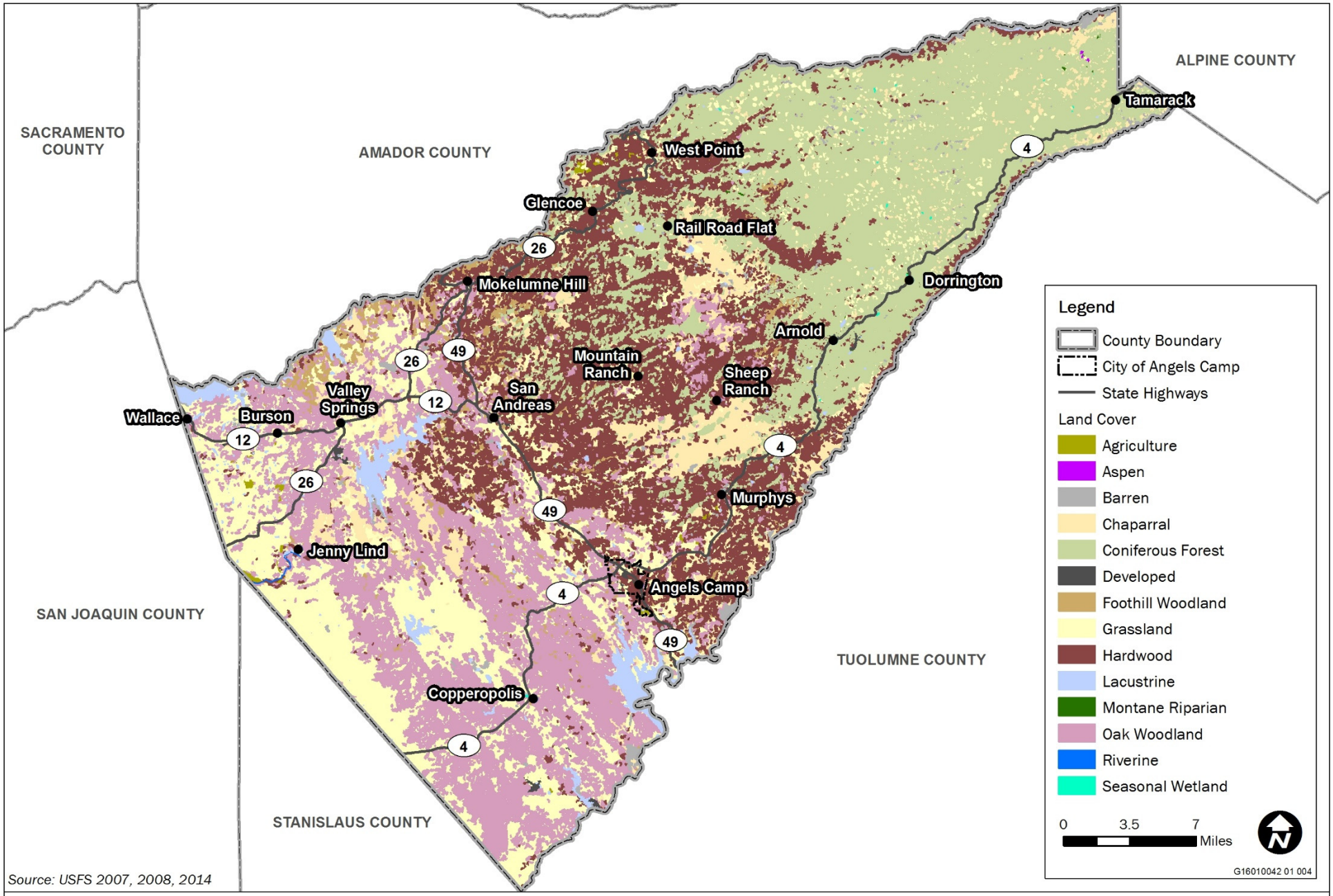


Exhibit 3.3-1

Land Cover

Wildlands

The wildlands group of lands consist of the following cover types: aspen, barren, chaparral, coniferous forest, foothill woodland, grassland, hardwood forest, oak woodland, montane riparian, lacustrine, riverine and wet meadow. Table 3.1-1 provides the acreages of each of these cover types and Exhibit 3.3-1 shows the location of these land cover types within the project area.

Table 3.3-1 Land Cover Types and Acreages within Calaveras County[1]

Land Cover Type	Area (Acres)
Aspen	38
Barren	4,607
Chaparral	76,798
Coniferous Forest	164,847
Grassland	151,991
Hardwood Forest	125,031
Foothill Woodland	13,524
Oak Woodland	10,7343
Montane Riparian	226
Riverine	60
Lacustrine	13,536
Seasonal Wetlands	87
Agriculture	2,009
Urban	2,742

[1] The mapping scales of land cover data obtained for this program-level document varied from general natural community types to specific vegetation alliances. Accordingly, the land cover types and acreages presented in this table are intended to provide general information about the project area. Implementation of future projects within the project area would provide more specific land cover type information.

Source: USFS 2014 Compiled by Ascent 2017

Aspen

Aspen stands in California occur primarily at higher elevations near seeps, streams, and meadows on the eastern slopes of the Sierra Nevada and Cascade Ranges. Zonally they are found within the Red Fir, Mixed-conifer, and Lodgepole Pine habitats. Aspens commonly occur adjacent to Sagebrush habitats and other montane shrub types, where they are often the only tree species present. They are also found along streams adjoining Jeffrey Pine habitats. At higher elevations, they occur with whitebark pine, where they grow in a shrubby, wind-pruned form.

Although no wildlife species is totally dependent on habitats dominated by aspen, this cover type adds significantly to the richness of the wildlife in areas where it occurs. The habitat typically has a shrubby ecotone with adjacent meadows. This and the shrub understory within stands provide nesting cover for several species that might otherwise be scarce or absent. The mesic sites that permit aspen to establish also result in higher insect production compared to adjacent forests or shrublands. Such insect production, together with a high rate of fungal infection of trees, is thought to account for the greater variety and abundance of birds in aspen habitats than in adjacent forests and shrublands. Aspen stands are habitats favored by a variety of cavity-nesting birds, such as bluebirds, sapsuckers, downy woodpeckers, and chickadees. Snags are important to cavity nesters in these stands, but live aspens are easily and therefore commonly drilled by excavating species. On the eastern slopes of the Sierra Nevada, aspen stands adjoining sagebrush and other shrub habitats apart from forested sites often provide nesting cover for northern goshawks (Mayer and Laundenslayer 1988).

Barren

Barren areas in the proposed project area include cliffs, and rock outcrops, that support little, if any, vegetative cover. Another type of barren habitat is the serpentine barrens. Although serpentine soils occupy only one percent of California's land area, where they do occur the complex interaction of plants, soils and rock makes a striking impact on the landscape. Serpentine is a mineral class, the constituents of serpentinite rock. These rocks are composed mainly of iron magnesium silicate, with "impurities" of chromium, nickel, and other toxic metallic elements. Because of this unusual chemical makeup, the soils weathering from serpentinite and other untramafic rocks (i.e., peridotite, dunite) are infertile (high magnesium to calcium ratio) or even toxic to most plants. Some plants have become adapted to serpentines everywhere these rocks reach the surface. Plants restricted to serpentine contribute impressively to the list of California endemics (only found in California). Over 200 species, subspecies and varieties are restricted wholly or in large part to serpentine. Calaveras County is known to support serpentine areas (Van Gosen 2011).

Chaparral

Chaparral communities in the project area typically occur on the drier slopes of the foothills and are characterized by drought-resistant shrubs. These communities are relatively common in the foothill portion of the project area. Dominant species in chaparral communities include manzanita species, buckbrush, black sage, coyote brush, scrub oak, leather oak, and chamise. The herbaceous understory varies depending on the density of shrub cover, and typically includes native grasses and wildflowers.

Chaparral plants provide browse, berries, and seeds for a variety of birds, such as California quail, northern mockingbird, American robin, hermit thrush, spotted towhee, California towhee, dark-eyed junco, and golden-crowned sparrow. Insectivorous birds, such as orange-crowned warbler, bushtit, and Bewick's wren, feed on insects in chaparral foliage. Many bird species also find nesting and roosting sites, and protection from predators, in chaparral habitats. Numerous rodents inhabit chaparral habitats, and deer, rabbits, and hares make extensive use of chaparral sources of food and cover. In addition, chaparral provides foraging and refuge habitat for other mammals and reptiles, including gray fox, coyote, deer mouse, western fence lizard, Pacific rattlesnake, and gopher snake.

Chamise-Redshank Chaparral

Chamise-redshank chaparral may consist of nearly pure stands of chamise or redshank, a mixture of both, or with other shrubs. Chamise is the dominant shrub of this habitat type throughout northern California. The purest stands of chamise occur on xeric, south-facing slopes. Toyon, sugar sumac, poison oak, redberry, and California buckthorn are commonly found in drainage channels and on other relatively mesic sites. At upper elevations or on more mesic exposures, chamise mixes with ceanothus, manzanita, scrub oak, and laurel sumac. Ceanothus and sugar sumac are common associates of redshank.

Chamise-redshank chaparral generally occurs below and transitions into mixed chaparral. On some sites, Chamise-redshank chaparral may form an ecotone with Ponderosa pine, coastal oak woodland, or mixed conifer types. In northern California, the lower boundary is with annual grassland and blue oak-foothill pine. Chamise-redshank chaparral more frequently mixes with other shrubs, especially several species of ceanothus in northern California. This type of vegetation covers large areas in the central coast ranges and on the eastern exposures of the north coast ranges; as isolated stands in the Cascade and Klamath ranges and the Siskiyou Mountains; and in a broken band on the western slope of the Sierra Nevada.

Wildlife species found in this habitat type also are found in either mixed chaparral, montane chaparral, coastal scrub, sagebrush and in shrubs beneath several woodland and forest types. The primary land management consideration is selection of alternative fire management treatments. Long-term fire suppression can lead to stand senescence and declines in deer, small mammals, birds, and reptiles. Most animal populations reach peak densities in the first two or three decades, frequently one to 15 years after a fire. Repeated fires at short intervals could favor crown-sprouting shrubs over obligate seed sprouters. Either management extreme could have long-term impacts on wildlife through changes in nutrient availability, soil quality or vegetation composition, structure, and recovery time.

Mixed Chaparral

Mixed chaparral is a floristically rich habitat type that supports approximately 240 species of woody plants. Composition changes between northern and southern California and with precipitation regime, aspect, and soil type. Dominant species in cismontane mixed chaparral include scrub oak, chaparral oak, and several species of ceanothus and manzanita. Individual sites may support pure stands of these shrubs or diverse mixtures of several species. Commonly associated shrubs include chamise, birchleaf mountain mahogany, silk-tassel, toyon, yerba-santa, California buckeye, poison-oak, sumac, California buckthorn, hollyleaf cherry, Montana chaparral-pea, and California fremontia. Some of these species may be locally dominant. Leather oak and interior silktassel are widely distributed on cismontane serpentine soils, and chamise and toyon may be abundant on these soils. Shrubs such as Jepson, coyote, and dwarf ceanothus and serpentine manzanita are local serpentine endemics. Incense-cedar, knobcone pine, Coulter pine, and foothill pine frequently are found in mixed chaparral on serpentine soils.

Mixed and chamise-redshank chaparral occur as a mosaic on low to middle elevation slopes below several woodland and forest types. Compared to chamise-redshank chaparral, mixed chaparral generally occupies more mesic sites at higher elevations or on north-facing slopes. In northern California, mixed chaparral merges with annual grassland and blue oak-foothill pine at lower elevations. Chaparral shrubs form the understory of many blue oak-foothill pine stands. At upper elevations, mixed chaparral grades into coastal oak woodland, Ponderosa pine or mixed conifer types and frequently forms the understory of these habitats. Jeffrey pine, pinyon juniper or Juniper habitats occur above mixed chaparral.

No wildlife species are restricted to mixed chaparral. Most species are found in other shrub-dominated types including chamise-redshank chaparral, montane chaparral, coastal scrub, and sagebrush, or the shrubs beneath several woodland and forest types.

Montane Chaparral

The growth form of montane chaparral species can vary from treelike (up to three meters) to prostrate. When mature, it is often impenetrable to large mammals. Its structure is affected by site quality, history of disturbance (e.g., fire, erosion, logging) and the influence of browsing animals. Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. One or more of the following species usually characterize montane chaparral communities: whitethorn ceanothus, snowbrush ceanothus, greenleaf manzanita, pinemat manzanita, hoary manzanita, bitter cherry, huckleberry oak, sierra chinquapin, juneberry, fremont silktassel, Greene goldenweed, mountain mahogany, toyon, sumac and California buckthorn. Montane chaparral is associated with mountainous terrain from mid to high elevation at 3,000 to 10,000 feet.

Montane chaparral adjoins a variety of other wildlife habitats, including montane riparian, mixed chaparral, and perennial grassland. It becomes established in disturbed coniferous habits such as ponderosa pine, mixed conifer, Jeffrey pine, red fir and lodgepole pine.

Montane chaparral provides habitat for a wide variety of wildlife. Numerous rodents inhabit chaparral. Deer and other herbivores often make extensive use of chaparral. Some small herbivores use chaparral species in fall and winter when grasses are not in abundance. Rabbits and hares eat twigs, evergreen leaves and bark from chaparral. Shrubs are important to many mammals as shade during hot weather and moderate temperature and wind velocity in the winter. Many birds find a variety of habitat needs in the montane chaparral. It provides seeds, fruits, insects, protection from predators and climate, as well as singing, roosting and nesting sites.

Coniferous Forest

Several different coniferous trees (that is, needle-leaved or scale-leaved trees that bear cones) are present within the project area. For purposes of this document they are being discussed together and are only being broken down into two separate communities based on elevation. These two communities are: (1) upper montane mixed coniferous forest, and (2) lower montane mixed coniferous forest. These coniferous forests cover approximately 164,847 acres of Calaveras. These two classifications include the Holland (1986) community types: Westside ponderosa pine forest, Sierran mixed conifer forest, Sierran white fir forest, and

big tree forest in the lower montane zone; and, in the upper montane zone includes Jeffery pine forest, Jeffery pine-fir forest, and red fir forest. Mixed conifer forest, upper and lower montane, forms the dominant vegetation type for the GPA at elevations above 2,500 feet; this covers the eastern half of the county (see Exhibit 3.3-1).

Lower Montane Coniferous Forest

Lower montane vegetation is dominated by forests. These forests are often classified in varied ways but most broadly referred to as Sierra mixed-conifer forests (Barbour et al 2007). The dominant tree species, including ponderosa pine, Douglas fir, and white fir, have broadly overlapping distributions. In the project area, all three of these dominant tree species are present. Ponderosa pine and other mixed conifer trees dominate much of the lower montane zone. At the lowest margins ponderosa pine forest intermingles with chaparral. Stands of black oak or individuals of ponderosa pine and incense cedar may occur well down into chaparral or foothill woodlands on favorable sites, often deeper soils or drainages. Ponderosa pine or Douglas fir often occur interspersed with canyon live oak as individual or small stands where soils are deeper.

The giant sequoia groves of the central and southern Sierra Nevada (also commonly referred to as "big tree forests") present a special case of mixed-conifer forests. These groves are typically dominated by white fir, or at higher elevations by red fir, with sugar pine as an important component. Giant sequoias are commonly third in abundance in these groves, although their basal area often exceeds that of other species. There is one occurrence of giant sequoia grove/big tree forest in Calaveras County, the North Calaveras Grove in the Calaveras Big Trees State Park (Calaveras County 2013).

Upper Montane Coniferous Forest

Upper montane vegetation types grow at elevations above white fir and mixed-conifer series of the Sierra Nevada. The elevation of this transition from lower montane forests occurs at about 1,800 meters (5,905 feet) above sea level in the central and northern Sierra Nevada. In addition to coniferous forests, montane meadows, aspen, montane chaparral, and non-forested rock outcrops are prevalent in this zone. There are three major community types of distinctive conifer composition that form the upper montane forests. These are red fir forests, lodgepole pine forests, and Jeffrey pine forests.

Red fir forests, composed of a stand of red fir trees, lie in a belt immediately above montane white fir and mixed-conifer forests. The dense canopy cover in red fir forests reduces light penetration and wind. Red fir is a large and long-lived conifer. Stands of red fir forest are often virtual monocultures of this species. At its lower margin, red fir often mixes with white fir and sugar pine, and less commonly with giant sequoia. At higher elevations, red fir can be found with lodgepole pine, Jeffrey pine, and mountain hemlock.

Lodgepole pine forests are in open stands that make up a widespread upper montane forest over much of the Sierra Nevada. These forests generally occur at elevations of about 1,830 to 2,400 meters in the northern Sierra Nevada. The generally low stature and open stand structure of lodgepole pine forests is a function of severe climate conditions where it grows at the upper elevations and the thin, nutrient-poor soils that characterize this zone. Commonly there are few understory shrubs and little soil litter accumulations in these stands.

Jeffery pine replaces the ponderosa pine in the upper montane zone of the Sierra Nevada. Its belt of primary occurrence lies at 1,600 to 2,600 meters (5,249 to 8,530 feet) above sea level in the southern Sierra Nevada and 1,520 to 1,830 meters (4,986 to 6003 feet) above sea level in the northern Sierra Nevada. On the western slopes of the range, Jeffrey pine most commonly occurs in mixed stands with white fir and incense cedar at lower elevations and with red fir and lodgepole pine at higher elevations. The understory is composed of shrub species typically found in montane chaparral such as buckbrush and manzanitas.

Coniferous forests are densely wooded habitats that provide wildlife with nesting opportunities, denning opportunities, cones and seeds for foraging, and bark, leaf duff, and fallen logs to support and recruit insect populations which in turn provide food for reptiles, amphibians, birds, and mammals. Examples of wildlife expected in the project area's coniferous forest habitats are Northern goshawk, common raven, Steller's jay, northern flicker, pileated woodpecker, white-headed woodpecker, downy woodpecker, Clark's nutcracker,

varied thrush, American robin, purple finch, mountain chickadee, brown creeper, black bear, mule deer, and mountain lion. Examples of Neotropical migrant birds likely to be found in coniferous forests include olive-sided flycatcher, Pacific-slope flycatcher, and western wood-pewee (Calaveras County 2013).

Grasslands

Within the project area, there are two types of grassland land cover types: annual grassland and perennial grassland. Annual grassland is one of the most common plant communities in the project area and is dominated by nonnative annual grasses, nonnative forbs, and native forbs. Annual grassland is also a very common plant community statewide. Grasslands are found on ridges, hill slopes, and valley floors. Representative species include a mix of dominant nonnative grasses such as soft chess, red brome, ripgut brome, foxtail barley, wild oat, and annual fescues, intermixed with forb species such as clovers, lupines, owl's clover, popcornflower, poppies, and various species of filaree. Some annual grasslands in the project area are subject to frequent disturbance, such as grazing and maintenance activities along roadsides. The annual grassland vegetation in these areas are often dominated by introduced nonnative species, such as yellow star-thistle.

Perennial grassland is dominated by native perennial bunchgrass plants that are intermixed with species typical of an annual grassland. Perennial grassland is not common in California, and is considered a sensitive natural community by CDFW. Several areas of perennial grassland are habitat restoration sites created and set aside specifically for this plant community.

In the project area, grasslands are important because they support insects, amphibians, reptiles, and small birds and mammals that are prey for other wildlife, such as red-tailed hawks, northern harriers, American kestrels, burrowing owls, and coyotes. Grasslands near open water and woodland habitats are used by the greatest number of wildlife species because they provide places for resting, breeding, forage, and escape.

Both annual and perennial grassland stabilize soils, protect watersheds from erosion, and provide forage for wildlife and livestock. They also provide habitat for a variety of special-status species including American badger, burrowing owl, white-shouldered kite, and Swainson's hawk. Those grasslands that support vernal pools or seasonal wetlands also provide habitat for special-status vernal pool invertebrates, western spadefoot, and California tiger salamander.

Hardwood Forest and Woodland Communities

Hardwood forests and woodlands are dominated by evergreen tree species (such as evergreen oaks and madrone and broad-leaved deciduous trees (such as some species of oaks, maples and alders. Coniferous trees (such as firs and pines) may also be present.

Hardwood forests in the project area include montane hardwood and montane hardwood-conifer forests along the drainages of major rivers and aspen forests at high elevations. Examples of montane hardwood and hardwood-conifer forests found within the project area are madrone forest and McNab cypress woodland. Montane hardwood communities cover approximately 125,031 acres of the project area.

Examples of woodland communities present in the project area are foothill woodland (covering approximately 13,524 acres of the project area), oak woodland (covering approximately 107,343 acres of the project area), and montane riparian woodland (covering approximately 226 acres of the project area). The plant communities are further described in the paragraphs below.

Madrone Forest

Madrone forest is a forest alliance listed in A Manual of California Vegetation (Sawyer et al. 2009). Madrone is a fast-growing, evergreen hardwood tree that is dominant or co-dominant in the tree canopy. It occurs with big leaf maple, tan oak, Douglas fir, and various species of oak. The shrub layer is sparse to intermittent. Madrone forest is found in the western portion of the project area along stream terraces and upland slopes with productive soils or steep slopes with shallow, rocky, infertile soils at elevations from 328 to 4,593 feet (100-1,400 meters). Madrone forest fits the Holland (1986) classification of "mixed evergreen forest." It

also falls under the U.S. Forest Service classification of "montane hardwood" and is included under this category on Exhibit 3.3-1 and Table 3.3-1 of this report.

McNab Cypress Woodland

This is the classification given to a woodland community dominated by McNab cypress trees (Sawyer et al 2009). This woodland occurs at elevations of 984 to 3,608 feet (300-1,100 meters) above sea level in parts of Calaveras County that also support knob cone pine, foothill pine, and manzanita though the shrub layer is sparse to intermittent. McNab cypress woodland can be found on open slopes and ridges with soils derived from basalt, conglomerate, gabbro, greenstone, or serpentine. This woodland community falls under the U.S. Forest Service classification of "montane hardwood" and is included under this category on Exhibit 3.3-1 and Table 3.3-1 of this report.

Wildlife found in the madrone forest and McNab cypress woodland communities include red-tailed hawk, acorn woodpecker, western scrub jay, hairy woodpecker, downy woodpecker, chestnut-backed chickadee, Anna's hummingbird, mule deer, western fence lizard, western rattle snake, deer mouse, Botta's pocket gopher, raccoon, striped skunk, and Virginia opossum, among others.

Foothill Woodland

Foothill woodland in the project area occurs along the western slope of the Sierra Nevada foothill region. This land cover type includes woodlands dominated by blue oak, canyon live oak, coast live oak, foothill pine, juniper, and knobcone pine, totaling 13,524.11 acres.

A variety of common wildlife species inhabits foothill woodlands. These areas represent important habitat for nesting birds, roosting habitat for bats that utilize tree cavities or exfoliating bark, wintering habitat for deer, and resident habitat for many common mammals.

Special-status wildlife species that could occur in foothill woodland communities in the project area include burrowing owl, golden eagle, foothill-yellow legged frog, and western pond turtle. Some of the plant species expected to occur include adobe lily, parry's horkelia, Chinese Camp brodiaea, and Tuolumne iris.

Oak Woodland

Oak woodlands are dominated by valley oak, but interior live oak and coast live oak are also present. Oak woodlands within the county total 107,342.73 acres. The understory of valley oak woodlands varies from sparse to well-developed, including shrubs such as poison oak, ceanothus, and scrub oak. The herbaceous understory frequently contains plant species found in annual grasslands.

Valley oak woodland communities provide important breeding, foraging, and cover habitat for several wildlife species common to the region. The upper canopy of the oak trees provides nesting, foraging, and cache sites for many birds, such as Lewis' woodpecker, acorn woodpecker, northern flicker, oak titmouse, western bluebird, mourning dove, and red-tailed hawk; the understory layer provides nesting and foraging habitat for many common species of birds, small mammals, and reptiles.

Special-status wildlife species that could occur in valley oak woodland communities in the project area include western spadefoot, western pond turtle, California horned lizard, Swainson's hawk, white-tailed kite, golden eagle, Townsend's big-eared bat, and pallid bat.

Montane Riparian

Montane riparian land cover types in the project area occur along creeks, rivers, and other water bodies in the project area totaling 225.97 acres. The composition and structure of vegetation varies among riparian areas on the foothills, and in montane areas, typically includes willows, Fremont's cottonwood, valley oak, California sycamore, box elder, Oregon ash, white alder, and wild grape. The shrub layer of riparian areas is also highly variable and can range from sparse to well developed. The herbaceous understory of riparian areas typically contains a mixture of native and introduced species.

Despite widespread disturbances resulting from urbanization, agricultural conversion, and grazing, riparian forests remain important wildlife resources because of their scarcity regionally and statewide and because the riparian community is used by a large variety of wildlife species. This habitat supports abundant aquatic and terrestrial invertebrates that are prey for amphibians and reptiles, such as common garter snake, western skink, and ringneck snake, as well as insectivorous birds, such as warblers, northern flicker, downy woodpecker, and flycatchers. Small mammals found in riparian habitats include shrews, voles, bats, and mice. Raptors that nest in large riparian trees include great horned owl, red-tailed hawk, and American kestrel. Cavity-dependent species, such as woodpeckers, bats, squirrels, and raccoons, require mature stands of trees. Striped skunk, red fox, gray foxes, ringtail, and badger forage in riparian habitats and use them for cover and travel.

Elderberry shrubs within riparian woodlands in the project area provide habitat for the valley elderberry longhorn beetle, a federally-listed as threatened. Riparian woodlands also provide nesting habitat for several special-status raptors, including osprey, bald eagle, Cooper's hawk, Swainson's hawk, and white-tailed kite. Cavities or exfoliating bark in riparian trees along waterways in the project area may be used as roosting sites by some species of special-status bats, such as pallid bat. Some plant species expected to occur in riparian habitat include Delta button-celery (for the lower elevation area), Red-Hills vervain, long-leaved starwort, and Holzinger's orthotrichum moss.

Riverine

Riverine systems in the project area comprise permanent, intermittent, and ephemeral drainages totaling 59.84 acres. There are three significant rivers in the project area and include the Calaveras, the Stanislaus, and the Mokelumne. The 1996 General Plan lists 22 major streams and diversion canals: Angel's Creek, Bear Creek, Big Meadow Creek, Blue Creek, Calaveras Public Utility Ditch, Calaveritas Creek, Cherokee Creek, Cosgrove Creek, Coyote Creek, Esperanza Creek, Forest Creek, Indian Creek, Jesus Maria Creek, Littlejohns Creek, Love Creek, Mill Creek, Moore Creek, Murray Creek, Rock Creek, San Antonio Creek, San Domingo Creek, Slate Creek, Utica Ditch, and Youngs Creek. Most of the rivers in the project area and their tributaries are part of the Sacramento–San Joaquin River watershed. This includes streams and creeks, as well as their associated gravel and sand bars.

A variety of invertebrate and vertebrate species exist in riverine ecosystems in the project area. Invertebrates found in rivers and creeks include mayflies, alderflies, stoneflies, dragonflies, damselflies, water striders, and caddis flies.

Fish-eating birds, such as ospreys and bald eagles, forage for fish near the surface of pools and shallow waters along the rivers. Belted kingfishers, double-crested cormorants, and common mergansers also forage for fish in streams and reservoirs. Many amphibians and reptiles depend on riverine systems; these include California newt, western toad, foothill yellow-legged frog, western terrestrial garter snake, Sierra garter snake, and western pond turtle. Mammals in riverine systems include northern river otter, American mink, muskrat, and American beaver. Emerging aquatic insects are a major food source for many bat species that forage over open waters in the proposed project area.

Low-elevation rivers and large, perennial creeks support runs of Chinook salmon and Central Valley steelhead. Other native fish species include hitch, Sacramento roach, hardhead, Sacramento sucker, riffle sculpin, and Sacramento pike minnow.

Lacustrine

The project area contains six major reservoirs, New Melones, Camanche, New Hogan, Pardee, Salt Spring, and Tulloch. There are many other small reservoirs, lakes, and ponds throughout the project area totaling 13,535.68 acres. Many of the large water bodies support perennial and seasonal wetlands, and riparian communities along their shores.

These reservoirs provide habitat for a variety of waterfowl, including goose species, mallard, cinnamon teal, green-winged teal, American widgeon, northern pintail, northern shoveler, gadwall, ruddy duck, and common

merganser, and can provide important resting and foraging habitat for many waterfowl species during migration.

Vegetation growing along the edges of water bodies also provides nesting habitat for several bird species and foraging and refuge habitat for numerous amphibian, reptile, and mammal species occupying the open water and adjacent grassland, woodland, and forest habitats.

Seasonal Wetlands

According to the US Forest Service vegetation map, there are approximately 87.1 acres of seasonal wetlands in Calaveras County (Exhibits 3.3-1 and Table 3.3-1). However, the USDA Forest Service map scale is very broad; ground surveys for individual projects within the project area would likely reveal that this acreage figure is much higher.

Wet Meadow

Wet meadows at all elevations generally have a simple structure consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse; they may, however, be an important feature of the meadow edge. Since wet meadows occur with a great variety of plant species, it is not possible to generalize species composition. Species may differ, but several are common and include grasses, sedges, rushes, and willows.

Wet meadows usually occur as ecotones between wetlands and grasslands. Where wet meadows merge with wetlands, slight differences in water depth control the plant species present. Wet meadows are important for wildlife. Wet meadows are generally too wet to provide suitable habitat for small mammals, but small mammals may visit wet meadows that have dried up by late summer. Mule deer forage on wet meadows, seeking especially forbs and palatable grasses. Waterfowl, frequent streams flowing through wet meadows and blackbirds (including the tricolored blackbird) may nest in wet meadows that support tall vegetation and with adequate water to discourage predators. Many amphibians, such as the sierran treefrog, Sierra Nevada yellow-legged frog (at high elevations), long-toed salamander use wet meadow habitat. Common reptiles that typically occur include garter snakes, stripped racer and western pond turtle.

Vernal Pools and Other Seasonal Wetland Communities

Seasonal wetlands in the project area are typically shallow depressions that frequently occur in grasslands and are filled during the rainy season. Some maintain water through the spring or early summer. Vernal pools in the project area are a type of seasonal wetland characterized by the presence of an impermeable hardpan layer, a unique hydrologic cycle, and a plant community that adapted to conditions within vernal pools. Vernal pools provide habitat for numerous plant, vertebrate, and invertebrate species, many of which are endemic to vernal pools.

Seasonal wetlands, including vernal pools and seasonal swales, provide habitat for a variety of wildlife species. During the wet season when seasonal wetlands and vernal pools are ponded, avian species such as killdeer, black-necked stilts, American avocets, great egrets, and greater yellowlegs commonly forage on the many invertebrate and amphibian larvae commonly found in this habitat.

Vernal pools and other types of seasonal wetlands provide habitat for several special-status wildlife species in the project area, including vernal pool fairy shrimp, vernal pool tadpole shrimp, Conservancy fairy shrimp, California tiger salamander, California red-legged frog, and western spadefoot. Special-status plant species expected to occur include Jepson's coyote thistle, Tuolumne button celery, Ahart's dwarf rush and pinchushion navarretia.

Fresh Emergent Wetland Communities

This community in the project area is distinguished from deepwater aquatic habitats and other wetlands by the presence of tall, perennial, grass-like plants rooted in soils that are permanently or seasonally flooded or inundated. Characteristic species include broadleaf cattail, California bulrush, creeping spikerush, Pacific rush, Baltic rush, mannagrass, water primrose, water-plantain, and swamp smartweed.

In the project area, fresh emergent wetlands are often associated with small natural and artificial ponds, reservoirs, natural drainages, irrigation canals, and roadside ditches.

Characteristic water birds that nest in emergent wetlands include Canada goose, mallard, cinnamon teal, gadwall, Virginia rail, American coot, common moorhen, and Wilson's snipe. These species may be joined by migratory and wintering waterfowl such as American wigeon, northern shoveler, northern pintail, green-winged teal, ring-necked duck, bufflehead, and ruddy duck. Amphibians and reptiles that are found in fresh emergent wetland communities include western toad, Sierran treefrog, common garter snake, and Sierra garter snake.

Special-status wildlife species in the project area that may use this community type include California tiger salamander, California red-legged frog, western pond turtle, white-tailed kite, California black rail, saltmarsh common yellowthroat, and tricolored blackbird.

Agriculture

Agricultural land in Calaveras County includes row crops, vineyards, irrigated pasture, orchards (walnuts, almonds, olives, pistachios, apples, berries, cherries, pears, and peaches), also Christmas tree farms, and nursery products totaling 2,008 acres.

Depending on the crop pattern and the land's proximity to native habitats, agricultural lands can provide relatively high-value habitat for wildlife, particularly as foraging habitat. Raptor species use row- and grain-crop agricultural lands for foraging, because several species of common rodents are found in agricultural fields and are accessible as prey. Agricultural habitats also provide foraging and resting habitat for migrating and wintering waterfowl and shorebirds. Orchards, with few chemical controls, will attract birds such as the western scrub jay, the American robin, the northern mockingbird, and rodents and rabbits such as the California ground squirrel, Botta's pocket gopher, and the black-tailed jackrabbit.

Special-status wildlife species associated with agricultural lands, such as the Swainson's hawks forage in agricultural land types such as alfalfa and grain crops. Burrowing owls may be found in grazing lands that support California ground squirrels.

Developed

Urban areas within the project area are characterized by residential and commercial properties, infrastructure, and impermeable surfaces totaling 2,742 acres. The composition of vegetation within these developed areas is variable, but most are ornamental species planted for landscaping or horticulture (e.g., fruit trees) and are actively irrigated.

Developed areas in the project area also contain inclusions of annual grassland, riparian habitat along streams and rivers, and landscaped areas. In addition to the ornamental landscaping, these habitat types in the developed areas provide nesting and foraging habitat for common bird species, including house sparrow, northern flicker, western scrub-jay, northern mockingbird, Brewer's blackbird, and European starlings. California ground squirrels, eastern fox squirrels, house mice, and striped skunks can also be found using habitats in urban landscapes, such as parks, schools, and vacant lots.

SPECIAL-STATUS SPECIES

Special-status species are plants and animals that are legally protected under CESA (Fish and Game Code, Section 2050 et seq.), ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For this program EIR, special-status species are defined as:

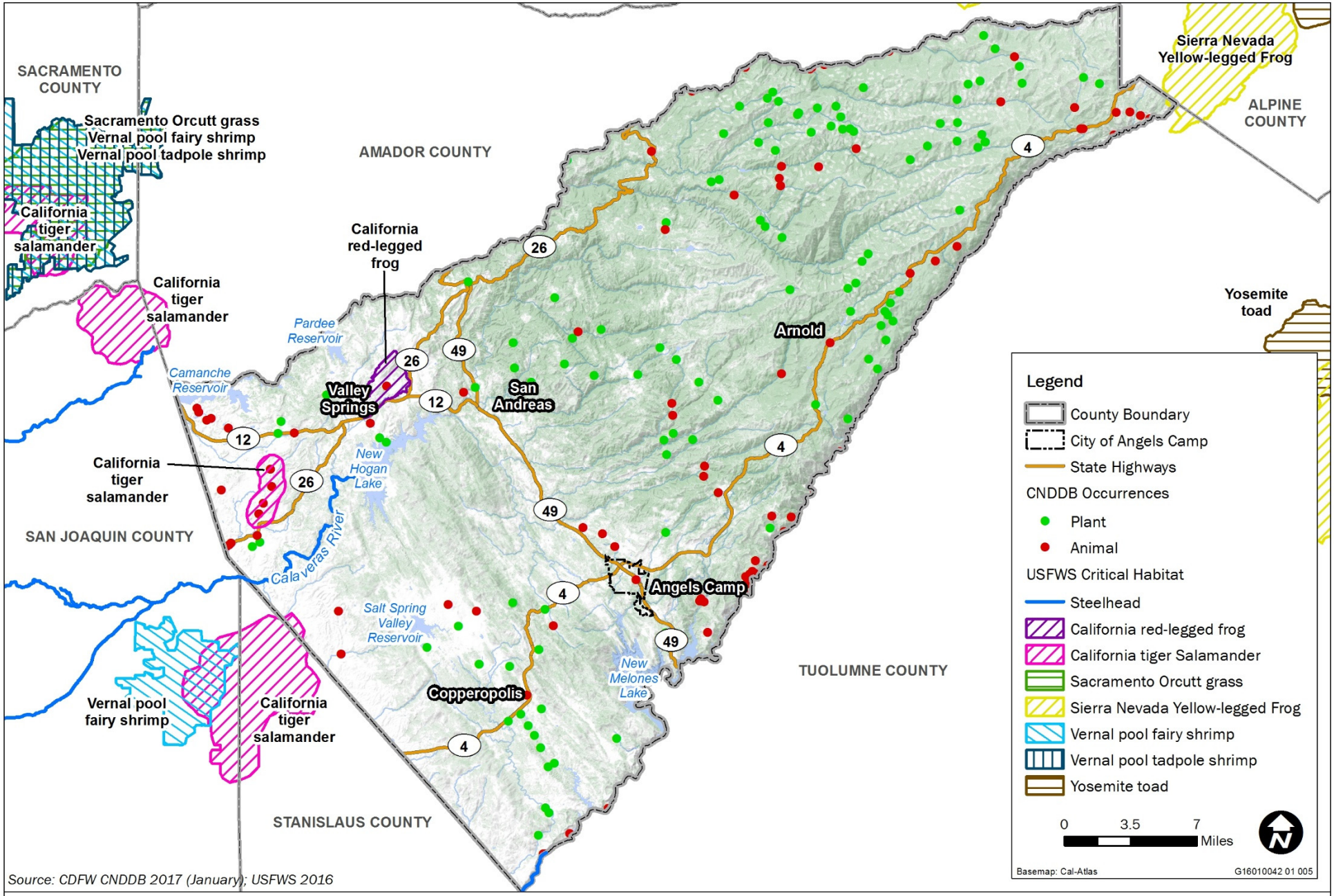
- species listed or proposed for listing as threatened or endangered under the ESA (50 Code Fed. Regs., Section 17.12) for listed plants, (50 Code Fed. Regs., Section 17.11) for listed animals, and various notices in the Federal Register for proposed species;

- species that are candidates for possible future listing as threatened or endangered under the ESA (75 Code Fed. Regs., Section 69222);
- species that are listed or proposed for listing by the State of California as threatened or endangered under the CESA of 1984 (14 Cal. Code Regs., Section 670.5);
- plants listed as rare under the California Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code, Section 1900 et seq.);
- plants considered by CDFW and CNPS to be "rare, threatened, or endangered in California" (Rare Plant Ranks 1A, 1B, 2A, and 2B; CDFW 2017; CNPS 2017);
- species that meet the definition of rare or endangered under the State CEQA Guidelines, Section 15380;
- animals fully protected in California (Fish and Game Code, Section 3511 for birds, Section 4700 for mammals, and Section 5050 for reptiles and amphibians); or
- animal species of special concern to CDFW (CDFW 2017).

Special-status plant, fish, and wildlife species that have been documented or have the potential to occur in the project area are identified in Table 3.3-2 Special-Status Plants, and Table 3.3-3 Special-Status Wildlife. Exhibit 3.3-2 shows the location of known records of special-status plants and animals in the project area. These records do not indicate an absence of special-status species in other parts of the project area; rather they show where surveys for these species have been conducted and found. Additional required surveys for special-status species (plant and wildlife) may uncover new record locations for species-status plants and wildlife.

Database query results returned 32 special-status plant species with potential to occur in the project area. After analysis of these species, only 31 special-status plant species are known to occur or have the potential to occur in the project area. Out of these 31 plant species, Delta button-celery is a state candidate endangered (SCE) species; Hartweg's golden sunburst is state- and federally-listed as endangered (SE, FE), and Red Hills vervain is state- and federally-listed as threatened (ST, FT). All other 28 species are one of these California Rare Plant Ranks (CRPR) 1B.1, 1B.2, 1B.3, 2B.2 and 2B.3 as shown in Table 3.3-3. The species that is not likely to occur in the project area is Colusa grass (Federally-threatened, state-listed as endangered, and CRPR 1B.1) because the project area is outside of the current known range of the species.

Database query results returned 47 special-status wildlife species with potential to occur in the project area. After analysis of these species, 39 of the 47 special-status wildlife species were found to have a potential to occur or were known to occur in the project area. Special-status wildlife species that are known to occur or have the potential to occur include three invertebrates: vernal pool fairy shrimp (FT), vernal pool tadpole shrimp (FE), and valley elderberry longhorn beetle (FT); one fish species: steelhead (Central Valley Distinct Population Service (DPS) FT); six amphibians including California tiger salamander (FE, state endangered [SE]), southern long-toed salamander (state species of concern [SSC]), foothill yellow-legged frog (SSC), California red-legged frog (FT), Sierra Nevada yellow-legged frog (FE, ST), and western spadefoot (SSC); one reptile: western pond turtle (SSC); twenty bird species including northern goshawk (SE and state fully protected [FP]), tricolored blackbird (state candidate as endangered), burrowing owl (SSC), western snowy plover (SSC), black swift (SSC), Swainson's hawk (ST), northern harrier (SSC), yellow warbler (SSC), white-tailed kite (SFP), willow flycatcher (SE), American peregrine falcon (SFP), bald eagle (SE), yellow-breasted chat (SSC), loggerhead shrike (SSC), California black rail (ST), yellow-billed magpie (SSC), great gray owl (SE), and California spotted owl (SSC); and eight mammals including Sierra Nevada mountain beaver (SSC), California wolverine (ST), ringtail (SFP), American badger (SSC), Sierra Nevada red fox (federal candidate and ST), pallid bat (SSC), Townsend's big-eared bat (SSC), western mastiff bat (SSC), and western red bat (SSC). The species that were found not likely to occur due to either lack of habitat (i.e., saline environments) or due to the project area being outside of the current known range of the species include: conservancy fairy shrimp (FE), delta smelt (FT, SE), Lahontan cutthroat trout, Yosemite toad, giant garter snake (FT, ST), fisher – West Coast DPS (FPT, CT, and SSC), and San Joaquin kit fox (FE, ST).



Source: CDFW CNDDB 2017 (January); USFWS 2016

Exhibit 3.3-2

CNDDB Occurrences and Critical Habitat

ASCENT ENVIRONMENTAL

Table 3.3-2 Special-Status Plant Species Known to or with Potential to Occur in the Project Area

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence[2]
	Federal	State	CRPR		
Three-bracted onion *Allium tribracteatum*	–	–	1B.2	Typically found in volcanic soils within chaparral, lower and upper montane coniferous forests at elevations ranging from 1100-3000 meters. Blooms April to August.	Know to occur in the county.
Ione manzanita *Arctostaphylos myrtifolia*	T	–	1B.2	Typically found in acidic, Ione soil, clay or sandy soils within chaparral or cismontane woodland at elevations ranging from 60 to 580 meters. Blooms November to March.	Known to occur in the county.
Scalloped moonwort *Botrychium crenulatum*	–	–	2B.2	Bogs and fens lower and upper montane coniferous forest, meadows and seeps, marshes and swamps (freshwater) at elevations ranging from 1268 to 3280 meters. Blooms June to September.	Known to occur in the county.
Mingan moonwort *Bortychium minganense*	–	–	2B.2	Found in mesic areas within bogs and fens, lower and upper montane coniferous forests, meadows and seeps (edges) at elevations ranging from 1455 to 2180 meters. Blooms July to September.	Known to occur in the county.
Chinese Camp brodiaea *Brodiaea pallida*	T	CE	1B.1	Vernal streambeds, often serpentinite, cismontane woodland, valley and foothill grassland; 182 to 385 meter elevation. Blooms May to June.	Known to occur in the county.
Pleasant Valley mariposa lily *Calochortus clavatus* var. *avius*	–	–	1B.2	Lower montane coniferous forest (Josephine silt loam and volcanic), 305 to 1800 meters. Blooms May to July.	Known to occur in the county.
Hoover's calycadenia *Calycadenia hooveri*	–	–	1B.3	Typically found in rocky soils within cismontane woodland, valley and foothill grassland at elevations ranging from 65 to 300 meters. Blooms July to September.	Known to occur in the county.
Davy's sedge *Carex davyi*	–	–	1B.3	Subalpine coniferous forest, upper montane coniferous forest; 1500 to 3200 meters in elevation. Blooms May to August.	Known to occur in the county.
Red Hills soaproot *Chlorogalum grandiflorum*	–	–	1B.2	Typically within serpentinite, gabbroic, and other soils within chaparral, cismontane woodland, and lower montane coniferous forest; 245 to 1690 meters in elevation. Blooms May to June.	Known to occur in the county.
Small's southern clarkia *Clarkia australis*	–	–	1B.2	Cismontane woodland, lower montane coniferous forest; 800 to 2075 meters. Blooms May to August.	Known to occur in the county.
Mariposa cryptantha *Cryptantha mariposae*	–	–	1B.3	Associated with serpentinite and rocky soils in chaparral habitat; 200 to 650 meter elevation. Blooms April to June.	Known to occur in the county.
Red Hills cryptantha *Cryptantha spithamaea*	–	–	1B.3	Typically within serpentinite, sometimes streambeds, sometimes openings within chaparral or cismontane woodland; 275 to 460 meters. Blooms April to May.	Known to occur in the county.
Yellow-lip pansy monkeyflower *Diplacus pulchellus*	–	–	1B.2	Typically found in vernally mesic, often disturbed areas, and clay soils in lower montane coniferous forest, meadows and seeps; 600 to 2000 meters in elevation. Blooms April to July.	Known to occur in the county.

Table 3.3-2 Special-Status Plant Species Known to or with Potential to Occur in the Project Area

Species	Status[1]			Habitat and Blooming Period	Potential for Occurrence[2]
	Federal	State	CRPR		
Jepson's coyote thistle *Eryngium jepsonii*	–	–	1B.2	Clay soils within valley and foothill grassland, vernal pools; 3 to 300 meters in elevation. Blooms April to August.	Known to occur in the county.
Tuolumne button-celery *Eryngium pinnatisectum*	–	–	1B.2	Typically, in mesic areas within cismontane woodland, lower montane coniferous forest and vernal pools at elevations ranging from 70 to 915 meters. Blooms May to August.	Known to occur in the county.
Delta button-celery *Eryngium racemosum*	–	CE	1B.1	Riparian scrub (vernally mesic clay depressions); 3 to 30 meters in elevation. Blooms June to October.	Known to occur in the county.
Stanislaus monkeyflower *Erythranthe marmorata*	–	–	1B.1	Cismontane woodland, lower montane coniferous forest; 100 to 900 meters in elevations. Blooms March to May.	Known to occur in the county.
Parry's horkelia *Horkelia parryi*	–	–	1B.2	Typically in lone formation and other soils within chaparral and cismontane woodland at elevations ranging from 80 to 1070 meters. Blooms April to September.	Known to occur in the county.
Tuolumne iris *Iris harwegii* ssp. *columbiana*	–	–	1B.2	Cismontane woodland, lower montane coniferous forest at elevations ranging from 425 to 1400 meters. Blooms May to June.	Known to occur in the county.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	–	–	1B.2	Vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools or swales (Witham 2006:38); 0 to 1,000 feet elevation. Blooms March-May.	Known to occur in the county.
Forked hare-leaf *Lagophylla dichotoma*	–	–	1B.1	Sometimes in clay soils within cismontane woodland, valley and foothill grassland at elevations ranging from 45 to 335 meters. Blooms April to May.	Known to occur in the county.
Congdon's lomatium *Lomatium congdonii*	–	–	1B.2	Serpentinite soils within chaparral and cismontane woodland at elevations ranging from 300 to 2100 meters. Blooms March to June.	Known to occur in the county.
Stebbins' lomatium *Lomatium stebbinsii*	–	–	1B.1	Typically found within gravelly, volcanic clay in chaparral, lower montane coniferous forest at elevations ranging from 1245 to 2375 meters. Blooms March to May.	Known to occur in the county.
Tufted loosestrife *Lysimachia thyrsiflora*	–	–	2B.3	Meadows and seeps mesic, marshes and swamps, upper montane coniferous forest at elevations ranging from 975 to 1675 meters. Blooms May to August.	Known to occur in the county.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	–	–	1B.1	Often in acidic soils within vernal pools at elevations ranging from 20 to 330 meters. Blooms April to May.	Known to occur in the county.
Patterson's navarretia *Navarretia paradoxiclara*	–	–	1B.3	Typically found in serpentinite soils within openings, vernally mesic, often drainages. Meadows and seeps at elevations ranging from 150 to 430 meters. Blooms May to July.	Known to occur in the county.

Table 3.3-2 Special-Status Plant Species Known to or with Potential to Occur in the Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	Federal	State	CRPR		
Colusa Grass *Neostapfia colusana*	T	E	1B.1	Typically found in adobe soils within large vernal pools at elevations ranging from 5 to 200 meters. Blooms May to August.	Not expected to occur, however species is listed as potentially affected by activities in the county by USFWS.
Holzinger's orthotrichum moss *Orthortichum holzingeri*	–	–	1B.3	Usually on rock in and along streams, rarely on tree limbs. Cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest at elevations ranging from 715 to 1800 meters.	Known to occur in the county.
Hartweg's golden sunburst *Pseudobahia bahiifolia*	E	E	1B.1	Typically found in clay, often acidic soils within cismontane woodland, valley and foothill grassland at elevations ranging from 15 to 150 meters. Blooms March to April.	Could occur – previously known to occur in the Knights Ferry 7.5 USGS quadrangle in the south are of the county
Tongue-leaf coopermoss *Scopelophila cataractae*	–	–	2B.2	Typically within metamorphic soils in cismontane woodland around 400 meters in elevations.	Known to occur in the county.
Long-leaved starwort *Stellaria longifolia*	–	–	2B.2	Bogs and fens, meadows and seeps (mesic), riparian woodland, upper montane coniferous forest at elevations ranging from 900 to 1830 meters. Blooms May to August.	Known to occur in the county.
Red Hills vervain *Verbena californica*	T	T	1B.1	Mesic, usually serpentinite seeps or creeks within cismontane woodland, valley and foothill grassland at elevations ranging from 260 to 400 meters.	Could occur – although not known to occur, suitable habitat is present in county for this species to occur.

Notes: USFWS = U.S. Fish and Wildlife Service; CDFW = California Department of Fish and Wildlife; CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database; ESA = Federal Endangered Species Act; CESA = California Endangered Species Act; CNPPA=California Native Plant Protection Act

[1] Legal Status Definitions

Federal :

E Endangered (legally protected by ESA)

T Threatened (legally protected by ESA)

State:

E Endangered (legally protected by CESA)

T Threatened (legally protected by CESA)

C Candidate

R Rare (legally protected by CNPPA)

California Rare Plant Ranks:

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNDDB 2016; CNPS 2017; data compiled by Ascent Environmental in 2017

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	E	_	Large, cool-water vernal pools with moderately turbid water. Distinct occurrences in Ventura, Solano, Merced, Tehama, Yolo, Stanislaus, Butte, and Glenn counties.	Not likely to occur – the project site is outside of the current known range of this species.
Vernal pool fairy shrimp *Branchinecta lynchi*	T	_	Vernal pools and other seasonal wetlands in valley and foothill grasslands. Tends to occur in smaller wetland features (less than 0.05 acre in size).	Known to occur in county
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	_	Elderberry shrubs below 3,000 feet in elevation, typically in riparian habitats. Found in stems measuring 1 inch or greater at ground level.	Known to occur in county.
Vernal pool tadpole shrimp *Lepidurus packardi*	E	_	Vernal pools and other seasonal wetlands in valley and foothill grasslands that pond for sufficient duration to allow the species to complete its life cycle. Typically found in ponds ranging from 0.1 to 80 acres in size (USFWS 1994).	Known to occur in county
Fish				
Delta smelt *Hypomesus transpacificus*	T	E	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Not likely to occur – the project area is outside of the current known range of this species.
Lahontan cutthroat trout *Oncorhynchus clarki henshawi*	T	_	Lahontan cutthroat trout inhabit a wide range of habitats from cold, high-elevation mountain streams in California to lower-elevation and highly alkaline desert lakes in Nevada. Their range extends from the Sierra Nevada crest in California northeast into Nevada, including a small portion in Oregon.	Not likely to occur – the project area is west of the Sierra Nevada crest which is outside of the current known range of the species.
Steelhead – Central Valley DPS *Onchorhynchus mykiss*	T	_	Occurs in well- oxygenated, cool, riverine habitat with water temperatures from 7.8° to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools.	Known to occur in county
Amphibians and Reptiles				
California tiger salamander *Ambystoma californiense*	T	T	Vernal pools and seasonal wetlands with a minimum 10-week inundation period and surrounding uplands, primarily grasslands, with burrows and other belowground refugia (e.g., rock or soil crevices).	Known to occur in county
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	-	SSC	This subspecies occurs in the Northeast and along the northern Sierra Nevada south to Garner Meadows and Spicer Reservoir, and in Trinity and Siskiyou Counties near the Trinity Alps. It also occurs in southwestern Oregon. Inhabits alpine meadows, high mountain ponds and lakes.	Known to occur in county
Foothill yellow-legged frog *Rana boylii*	-	SSC	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby. Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet.	Known to occur in county

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Sierra Nevada yellow-legged frog *Rana sierrae*	E	T, SSC	Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County. Isolated populations in Butte County and near Mono Lake, Mono County. Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats.	Known to occur in county
California red-legged frog *Rana draytonii*	T	SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County. Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	Known to occur in county
Western spadefoot *Spea hammondii*	–	SSC	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	Known to occur in county
Yosemite toad *Anaxyrus canorus*	T	SSC	Ranges at high elevations in the Sierra Nevada Mountains. Inhabits wet mountain meadows, willow thickets, and the borders of forests, usually not more than a hundred meters from permanent water. From 4,800 - 12,000 ft. (1,460 - 3,630 m.) elevation.	Not likely to occur – the project site is outside of the current known range of the species.
Western pond turtle *Emys marmorata*	–	SSC	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	Known to occur in county
Giant garter snake *Thamnophis gigas*	T	T	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Also require upland refugia not subject to flooding during the snake's inactive season.	Not likely to occur – the project site is outside of the current known range of the species.
Birds				
Northern goshawk *Accipiter gentilis*	D	E, FP	Permanent resident in the Klamath and Cascade Ranges, in the north Coast Ranges from Del Norte County to Mendocino County, and in the Sierra Nevada south to Kern County. Winters in Modoc, Lassen, Mono, and northern Inyo counties. Nests and roosts in older stands of red fir, Jeffrey pine, Ponderosa pine, lodgepole pine, Douglas fir, and mixed conifer forests	Known to occur in county
Tricolored blackbird *Agelaius tricolor* (nesting colony)	–	CE	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs. Requires open water and protected nesting substrate, such as flooded, spiny, or thorny vegetation (Schuford and Gardali 2008: 439).	Known to occur in county
Burrowing owl *Athene cunicularia*	–	SSC	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing ground squirrel burrows or friable soils. Suitable burrow sites consist of short, herbaceous vegetation with only sparse	Known to occur in county

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
			cover of shrubs or taller herbs (Schuford and Gardali 2008: 221)	
Western snowy plover *Charadrius alexandrines nivosus*	T	SSC	CA Interior populations breed on barren or sparsely vegetated flats along shores of saline/alkaline lakes, ponds, river channels, agricultural wastewater ponds, and evaporation ponds.	Could occur but federal listing does not include inland populations.
Black swift *Cypseloides niger*	–	SSC	Breeds very locally in the Sierra Nevada and Cascade Range, the San Gabriel, San Bernardino, and San Jacinto mountains, and in coastal bluffs from San Mateo county south to near San Luis Obispo county. Nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons	Could occur – suitable habitat exists within the county.
Golden eagle *Aquila chrysaetos*	–	FP	Mountains, foothills, deserts, and other open habitats throughout California. Nest on cliffs and escarpments or in tall trees.	Could occur – although no CNDDB records occur within the county, there is suitable nesting and foraging habitat within the county.
Swainson's hawk *Buteo swainsoni* (nesting)	–	T	Forages in grasslands and agricultural lands; nests in riparian and isolated trees.	Could occur – the grassland-oak woodland interface may provide suitable habitat for this species.
Northern harrier *Circus cyaneus*	–	SSC	Uses a variety of open grassland, wetland, and agricultural habitats. Breeding habitats include marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes; and dry upland habitats, such as grassland, cropland, drained marshland, and shrub-steppe in cold deserts. Wintering habitat includes grassland, pastures, cropland, coastal sand dunes, brackish and freshwater marshes, and estuaries.	Known to occur. Year-round resident and nests in suitable habitat in the northern portion of the project site.
Olive-sided flycatcher *Contopus cooperi*	–	SSC	Summer breeder in California, winters in South of Mexico and in South America. Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds.	Could occur – county is within the known range of this species, although no recorded occurrences found in the CNDDB.
Yellow warbler *Dendroica petechia brewsteri* (nesting)	–	SSC	Nests and forages in riparian communities, preferably with willow, cottonwood, aspen, sycamore, or alder.	Known to occur – and county provide suitable nesting habitat for this species.
White-tailed kite *Elanus leucurus* (nesting)	–	FP	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	Known to occur in county.
Willow flycatcher *Empidonax traillii*	–	E	Summers along the western Sierra Nevada from El Dorado to Madera County, in the Cascade and northern Sierra Nevada in Trinity, Shasta, Tehama, Butte, and Plumas counties, and along the eastern Sierra Nevada from Lassen to Inyo County. Riparian areas and large wet meadows with abundant willows. Usually found in riparian habitats during migration.	Could occur – suitable riparian habitat within county may provide habitat for this species.

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
American peregrine falcon *Falco peregrinus*	D	D, FP	Forages near wetlands, lakes, rivers, or other water, especially where there are large concentrations of birds; nests on cliffs, banks, dunes, mounds or human-made structures.	Known to occur in county.
Bald eagle *Haliaeetus leucocephalus*	D	E, FP	Use ocean shorelines, lake margins, and river courses for both nesting and wintering. Most nests are within 1 mile of water, in large trees with open branches. Roost communally in winter.	Known to occur in county.
Yellow-breasted chat *Icteria virens*	-	SSC	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines	Known to occur in county
Loggerhead shrike *Lanius ludovidianus*	_	SSC	Forages in grasslands and agricultural fields, and nests in scattered shrubs and trees.	Known to occur in county.
California black rail *Laterallus jamaicensis coturniculus*	_	T	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	Not likely to occur in county.
Yellow-billed magpie *Pica nuttalii*	_	SSC	Is a common and conspicuous bird of open oak woodlands, but also found in urban environments.	Known to occur.
Great gray owl *Strix nebulosa*	_	E	Permanent resident of the Sierra Nevada from Plumas County south to the Yosemite area. Occasionally occurs in northwestern California in the winter and the Warner mountains in the summer. Late successional coniferous forests bordering large meadows	Known to occur – suitable habitat is present and within range of species, known occurrence is historical circa 1979.
California spotted owl *Strix occidentalis occidentalis*	_	SSC	Resident of southern Cascade Range south along the west slope of the Sierra Nevada, along the mountains in the central Coast, and in the mountains of southern California. Breeds and roosts in forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies, multiple canopy layers, and downed woody debris. Nest sites in the Sierra Nevada are typically tree cavities or on broken-topped trees or snags.	Known to occur.
Mammals				
Pallid bat *Antrozous pallidus*	_	SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations. Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts.	Known to occur.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	_	SSC	Occurs from Mount Shasta east and south through the Sierra Nevada range. Populations scattered and local. Frequents open and intermediate- canopy coverage with a dense understory near water. Deep, friable soils are required for burrowing, along with a cool, moist microclimate.	Could occur – county within range of the species.

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Townsend's big-eared bat *Corynorhynus townsendii*	–	SSC	Throughout California from low desert to mid-elevation montane habitats. Desert, oak woodland, coastal redwood, and mixed coniferous- deciduous forest. Day roosts in cave- like spaces including mines, caves, tunnels, and dark spaces in buildings, such as attics. May night roost in more open areas such as under bridges.	Known to occur.
Western mastiff bat *Eumops perotis californicus*	–	SSC	Uncommon resident in southeastern San Joaquin Valley and Coastal Ranges from Monterey Co. southward through southern California, from the coast eastward to the Colorado Desert. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban.	Known to occur.
California wolverine *Gulo gulo*	C	T, FP	Historically found in Klamath and Cascade Ranges south through the Sierra Nevada to Tulare County. Current native population and distribution is unknown. Found in a variety of mountain habitats. In north coastal areas, most sightings have been between 1,600 and 4,800 feet. The species has been found between 4,300– 7,300 feet in the northern Sierra Nevada and between 6,400 and 10,800 in the Southern Sierra Nevada. Most common in open terrain above timberline and subalpine forests. There has been only one recent sighting of a wolverine in an area north of Truckee, which appears to be a migrant wolverine from Idaho.	Could occur – within the historical range of the species.
Western red bat *Lasiurus blossevillii*	–	SSC	Scattered throughout much of California at lower elevations. Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Could occur - suitable habitat is present but no reported occurrences in CNDDB.
Fisher – West Coast DPS *Pekania pennanti*	PT	CT, SSC	Inhabits conifer, mixed-conifer, and hardwood tree habitats that are interspersed with associated habitats and forest openings represented by herbaceous plant communities, riparian areas, and shrubfields. The fisher apparently no longer inhabit Marin, Sonoma, and most of Mendocino County, or generally between the Pit River in the northern Sierra Nevada/Cascades to the Merced River in the southern Sierra Nevada (CDFW 2010).	Not likely to occur – county is outside of the current known range of the species.
Ringtail Bassariscus astutus	–	FP	Little information on distribution and abundance. Apparently occurs throughout the state except for the southern Central Valley and the Modoc Plateau. Occurs primarily in riparian habitats but also known from most forest and shrub habitats from lower to mid elevations. Usually not found for than 0.6 mile from permanent water.	Known to occur – county is within the range of the species, this species is not tracked by the CNDDB.
American badger *Taxidea taxus*	–	SSC	Requires sufficient food, friable soils, and relatively open uncultivated ground; preferred habitat includes grasslands, savannas, and mountain meadows near timberline	Could occur – specially within large grassland tracks in lower elevations

Table 3.3-3 Special-Status Wildlife Known to or with Potential to Occur in the Project Area

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
San Joaquin kit fox Vulpes macrotis mutica	E	T	San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi mountains. San Joaquin kit foxes inhabit grasslands, scrublands and modified habitats such as those with oil exploration and extraction equipment and wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands. Oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities also provide habitat for kit foxes.	Not likely to occur – county is outside of the current known range of the species.
Sierra Nevada red fox – Sierra Nevada DPS *Vulpes vulpes necator*	FC	T	Occurs in the Cascade Range, in Siskiyou County, and in the Sierra Nevada from Lassen County south to Tulare County. Alpine dwarf- shrub, wet meadow, subalpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian, mixed conifer, and ponderosa pine. In the Sierra Nevada, most sightings have been above 7,000 feet.	Could occur – county is within the known range of the species.

Note: CNDDB = California Natural Diversity Database; USFWS = U.S. Fish and Wildlife Service

[1] Legal Status Definitions

Federal:

E Endangered (legally protected)
T Threatened (legally protected)
D Delisted

State:

E Endangered (legally protected)
T Threatened (legally protected)
C Candidate (legally protected)
D Delisted
FP Fully protected (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, was observed in the project area during reconnaissance surveys, or was reported by others.

Source: CNDDB 2016, USFWS 2016; data compiled by Ascent in 2017

CRITICAL HABITATS

Critical habitat for various federally-listed species has been designated in the project area. A summary of the designated critical habitat is presented in Table 3.3-4. Critical habitat is designated by USFWS or NMFS as a specific geographic area that contains features essential for the conservation of a federally-listed species. Federal agencies are required to consult with USFWS or NMFS to ensure their actions will not destroy or adversely modify critical habitat. Mapped boundaries of critical habitat are generally large. Projects will only require consultation if they affect areas that contain the primary constituent elements required by the species. The primary constituent elements are the physical and biological features of a landscape that a species needs to survive and reproduce. Developed areas typically do not include these elements. Evaluation of effects to critical habitat is only required for activities that involve a federal action, such as a permit, license, or funding.

Table 3.3-4 Acreages of Critical Habitat for Federally-Listed Species in the Project Area

Species	Federal Status	Total[1]
Amphibians		
California red-legged frog (*Rana draytonii*)	Threatened	2,764
California tiger salamander (*Ambystoma californiense*)	Threatened	3,605
Sierra Nevada yellow-legged frog (*Rana sierrae*)	Endangered	105
Fish		
Steelhead (Oncorhybchus (=Salmo) mykiss)	Threatened	13.7 miles
TOTAL[2]		**6,474**

Note: [1]Totals in acres or as otherwise noted.
[2]Total does not include linear miles.
Source: USFWS Critical Habitat Portal, 2016 Compiled by Ascent Environmental 2017

SENSITIVE NATURAL COMMUNITIES

The wildlands cover type within the project area includes land cover types that could support sensitive natural communities. Sensitive natural communities are those natural communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of land use changes or projects. Most types of wetlands and riparian communities are considered sensitive natural communities due to their limited distribution in the state. Natural communities provide important habitat for native species and some support special-status plant species or are defined by the dominance or presence of such plant species. Dominance or presence of a set of species is what is known as community's species composition. The vegetation compositions or groupings are called alliances, which are a category of vegetation classification that describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition, and reflects the effects of local climate, soil, water, disturbance, and other environmental factors. Plant associations compose vegetation alliances. Plant associations are often recognized by two or more diagnostic species that are often found in different vegetation layers, which circumscribe the most detailed similarities of species composition and climate, topography, substrate, hydrology, and disturbance. Sensitive plant communities or sensitive vegetation alliances that have been assigned a State Rank S1, S2, or S3 by CDFW are considered imperiled or rare. Of the 159 vegetation alliances that could occur within the project area (CDFW 2017, Appendix C), there are three plant communities that are listed as sensitive natural communities (CNDDB 2016). These three sensitive natural communities are riparian woodland, Ione chaparral, and big tree forest and are discussed below.

Riparian Woodland

Riparian woodland grows along streams, rivers, and other waterways. It is best developed along those waterways that have perennial water. Most riparian communities (i.e., mountain riparian) in California have been described by Holland (1986) as sensitive communities and have also been included in the Manual of California Vegetation as rare alliances or associations (Sawyer et al 2009). CDFW also considers most riparian plant communities rare enough to warrant monitoring. Riparian vegetation is also protected under Section 1602 of California Fish and Game Code and authorization from CDFW is required prior to altering or otherwise disturbing riparian communities.

Ione Chaparral

Ione chaparral is a unique plant community of the Sierra foothills found in a few isolated patches north and south of the town of Ione in Amador County. This geologic formation also occurs in the central portions of Butte and Yuba Counties, and the western portions of Nevada, Placer, El Dorado, and Calaveras Counties. It extends as far south as Madera County (Sawyer et al 2009). A number of plant species uniquely adapted to Ione Formation soils occur in this plant community, and are classified as special-status plants. Ione manzanita, a federally-listed threatened species (and CRPR 1B.2), is the dominant species of Ione chaparral,

where it occurs in dense stands. Three other special-status plant species are associated with Ione chaparral: Parry horkelia (CRPR 1B.2), Ione buckwheat (FE and SE; CRPR 1B.1), Irish Hill buckwheat (FE and SE; CRPR 1B.1), and Bisbee Peak rush-rose (CRPR 3.2).

Big Tree Forest

The big tree forest consists of large stands of giant sequoias that are present in isolated groves along the west slope of the Sierra Nevada. There is one occurrence of giant sequoia grove/big tree forest in Calaveras County: the North Calaveras Grove in the Calaveras Big Trees State Park. The giant sequoia is among the fastest growing of all trees and is the largest tree in volume. It attains heights averaging 76 to 84 meters and ages of over 2,000 years. Giant sequoias are fire adapted species with fire-resistant bark, and serotinous cones. They are managed by prescribed burns (Calaveras County 2013).

In addition to these known sensitive natural communities that occur in the project area, the manual of California vegetation (Sawyer et al. 2009) includes 143 Sensitive Vegetation Alliances that could occur within the USDA Ecological Sections of the Great Valley, Sierra Nevada Foothills, and Sierra Nevada between an elevation of approximately 150 feet above sea level to 8,170 feet above sea level (corresponding to the elevation range of the project area). These vegetation alliances are included in Appendix D.

WATERS OF THE UNITED STATES AND STATE

The project area contains numerous types of wetlands and other waters (i.e., non-wetlands) that are subject to state and/or federal regulation. Compliance with regulations for wetlands and other waters in the project area would be required for projects involving filling of or encroachment into these habitats. Wetlands and other waters descriptive information was provided previously in the discussion of land cover types. Applicable regulations and regulatory agencies are discussed under Section 3.3-1, "Regulatory Setting."

The USACE and the U.S. Environmental Protection Agency (EPA) define wetlands as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (40 Code Fed. Regs., Section 232.2). This definition is referred to as a three-parameter definition because positive indicators of all three wetland criteria (vegetation, soils, and hydrology) must be present. The most common wetland land cover types identified in the project area are seasonal wetlands (including vernal pools) and freshwater emergent wetlands. Areas identified as other waters typically lack positive indicators of one or more wetland criteria. Other waters that occur in the project area include streams, creeks, rivers, irrigation canals, reservoirs, and ponds.

WILDLIFE MOVEMENT CORRIDORS

The project area encompasses large areas of wildlands that provide habitat for both common and rare plants and animals. Corridors between habitat concentrations serve important ecological functions related to connectivity, such as species dispersal, genetic exchange, and resilience to habitat effects of climate change. Some of these areas were mapped as Essential Connectivity Areas (ECA) for the California Essential Habitat Connectivity Project, which was commissioned by the California Department of Transportation (Caltrans) and CDFW with the purpose of making transportation and land-use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al., 2010). The ECAs were not developed for the purposes of defining areas subject to specific regulations by CDFW or other agencies.

The ECAs are not regulatory delineations and are identified as lands likely important to wildlife movement between large, mostly natural areas at the statewide level. The ECAs form a functional network of wildlands that are important to the continued support of California's diverse natural communities. The ECAs were not developed for the needs of particular species, but were based primarily on the concept of ecological integrity, which considers the degree of land conversion, residential housing impacts, road impacts, and status of forest structure (for forested areas). In addition, consideration was given to the degree of

conservation protection and areas known to support high biological values, such as mapped critical habitat and hotspots of species endemism (Spencer et al., 2010). ECAs are placeholder polygons that can inform land-planning efforts, but that should eventually be replaced by more detailed linkage designs, developed at finer resolution at the regional and ultimately local scale based on the needs of particular species and ecological processes. Exhibit 3.3-3 shows where these ECAs occur within the project area. As seen in this figure, ECAs occur within most of the project area. Table 3.3-5 shows the acreage of the ECA, the acreage of the ECA that is within the project area.

Table 3.3-5 Essential Habitat Connectivity Areas within the Project Area

ECA Name	Total ECA Acreage	ECA Acreage within Calaveras County	% of ECA within Calaveras County
Cherokee Creek – Pine Ridge	53,160	53,160	100
Duck Creek North Fork – Coyote Creek	126,166	416	0.3
Calaveras Big Trees – Pine Ridge	35,542	32,422	91.2
Bear Mountains – Duck Creek	80,842	59,661	73.8
Pine Ridge – Lightning Mountain	200,589	60,878	30.3
Bear Mountains – Middle Fork Cosumnes River	131,920	53,143	40.3
Table Top Mountain – Gopher Ridge	256,555	16,353	6.4
Pine Ridge – Irish Hill	156,322	54,226	34.7

Source: Caltrans and CDFW 2014. Compiled by Ascent Environmental 2017.

Railroad Flat Deer Herd

The Railroad Flat Deer Herd is a well-studied migratory herd of predominately California mule deer that has a total range of 520 square miles of land in the central Sierras annually. The herd's annual migratory route takes thousands of animals from the high elevation pine and fir forests of their summer range in Alpine County to the winter range, spring and fall holding areas, and fawning areas in the open oak woodland and oak savanna of the lower foothills and higher elevation timberlands of central and eastern Calaveras County. Portions of these areas have been designated as Critical Winter Range Habitat by CDFW. There are at least 6,700 acres in Fish and Game Conservation Easements in Calaveras County that protect the winter range of the herd (Calaveras 2007). According to the Land and Resource Management Plan for the Stanislaus National Forest, as cited in the 1996 Calaveras County General Plan, 97 percent of the herd's summer range is located in the Stanislaus National Forest, with the balance on private property (Calaveras 1996). In comparison, nearly 80 percent of the critical winter range for the herd is on privately held land (Calaveras 2007). In 1996, the deer herd's wintering range is located in the central portion of the county near the towns of West Point, Rail Road Flat, and Sheep Ranch. The migration routes for this herd appear to be concentrated in USFS lands (Calaveras 1996).

A detailed study by CDFW in 1973, estimated the size of the herd at that time as being between 6,000 and 9,000, with the population trend in decline (as has been the case since at least the 1960s). The study found both the condition of the herd and of their range to be poor. Reasons given for the poor condition and downward population trends were: poor quality of summer range, overuse of available forage, plant succession and fire suppression, habitat deterioration, human encroachment, and drought (Browning et al. 1973 cited in USFS Stanislaus National Forest 2003). Today, these issues continue to be of concern. (Curtis 2001 cited in Bacca 2008).

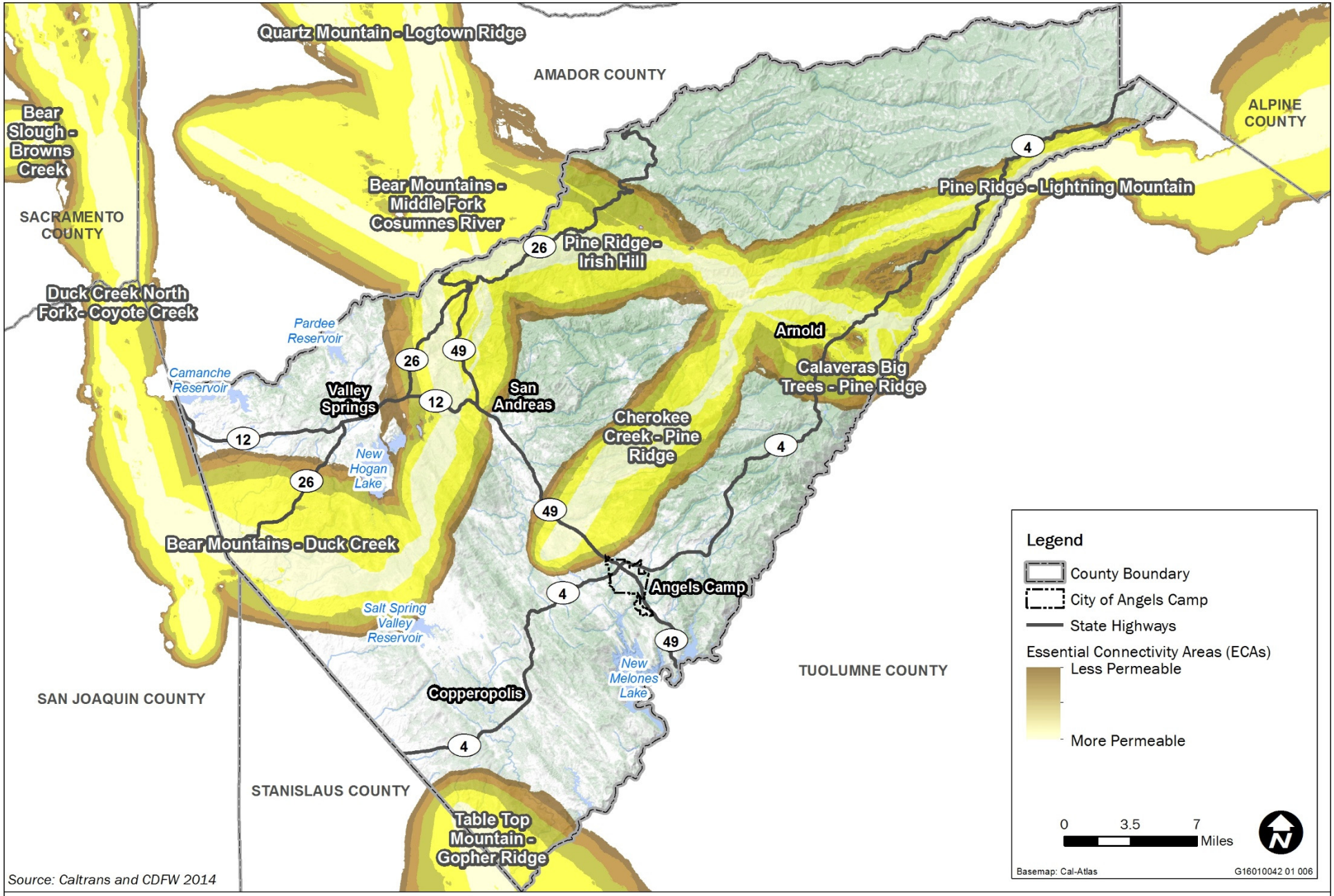


Exhibit 3.3-3

Essential Habitat Connectivity

3.3.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

This impacts analysis examines how implementation of the proposed project, including changes to land use that would convert, adversely affect habitat, or indirectly diminish biological resources. The impacts to biological resources are based on a combination of available land cover data and information regarding received and expected applications that would occur under the proposed project.

Unless otherwise stated, "existing conditions" in the project area refer to land use conditions in the baseline year of 2016, including the Butte Fire scar area. Due to the intensity of this fire, portions of the County's land cover were scorched (refer to Exhibit 3.3-4). Based on current data, approximately 30 percent of commercial cultivation applications submitted are within the 2015 Butte Fire area. Despite that the fire intensity destroyed most of the native vegetation in the area, some plant seed survived the fire, and some shrubs and trees are regenerating. Although the number and diversity of wildlife species in the scar area may have been reduced, some resilient or wildfire-adapted wildlife, such as the black-backed woodpecker (under regulatory review by USFWS), could also use the area.

Indoor commercial cannabis grows would be up to 5,000 square feet per grow, and the County is expecting up to 15 grows, so a total of 1.72 acres of habitat has the potential to be removed. Indoor commercial cannabis grows would be enclosed by permanent structures containing artificial lighting sources. It is possible that these grows would use existing structures or that new structures would be constructed. The areas where the applications for indoor grows would occur are within land currently zoned as Unclassified, Residential Agriculture, Rural Residential, General Agriculture, and Agricultural Preserve, Light Industrial, General Industrial, and Business Park. Issuance of permits could result in the removal of trees, vegetation clearing, and grading.

Outdoor commercial cannabis grows would be located in the open environment. Based on the current percentage (approximately 30 percent) of commercial cultivation applications submitted under the urgency ordinance for property within the 2015 Butte Fire area, a large percentage of commercial mixed light and outdoor use permits are expected to be applied for and granted in the community of Mountain Ranch on land that was scorched in the 2015 Butte Fire. Additional mixed light and outdoor permits are also expected to originate in Mokelumne Hill, Valley Springs, West Point, Murphys, and San Andreas. Cultivation sites would be located on land zoned for Unclassified, Residential Agriculture, Rural Agriculture, Rural Residential, General Forest, General Agriculture, and Agricultural Preserve. Issuance of permits for outdoor commercial grows could result in tree removal, vegetation clearing, and grading (i.e., terracing) to establish areas of cultivation. Up to 22,000 square feet of land would be converted to cultivation per parcel, and up to 750 grows are expected, therefore a total of up to 375 acres would be disturbed. In addition, large buildings (approximately 10,000 square feet) could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. Each outdoor and mixed light cultivation site would be surrounded by an 8-foot-tall fence to preclude public views of plants.

The biological resource data available for this program-level document are compiled from resource assessments that were conducted over multiple years with varying completion dates. However, this section uses the most comprehensive and recently available maps and data on biological resources for Calaveras County. The key sources of data and information used to identify existing biological resources in the project area are listed below:

- California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation; California Department of Fish and Wildlife, and Federal Highways Administration (Spencer et al., 2010);
- CALVEG for the North Sierra, South Sierra, and Central Valley ecological zones (USFS 2017);

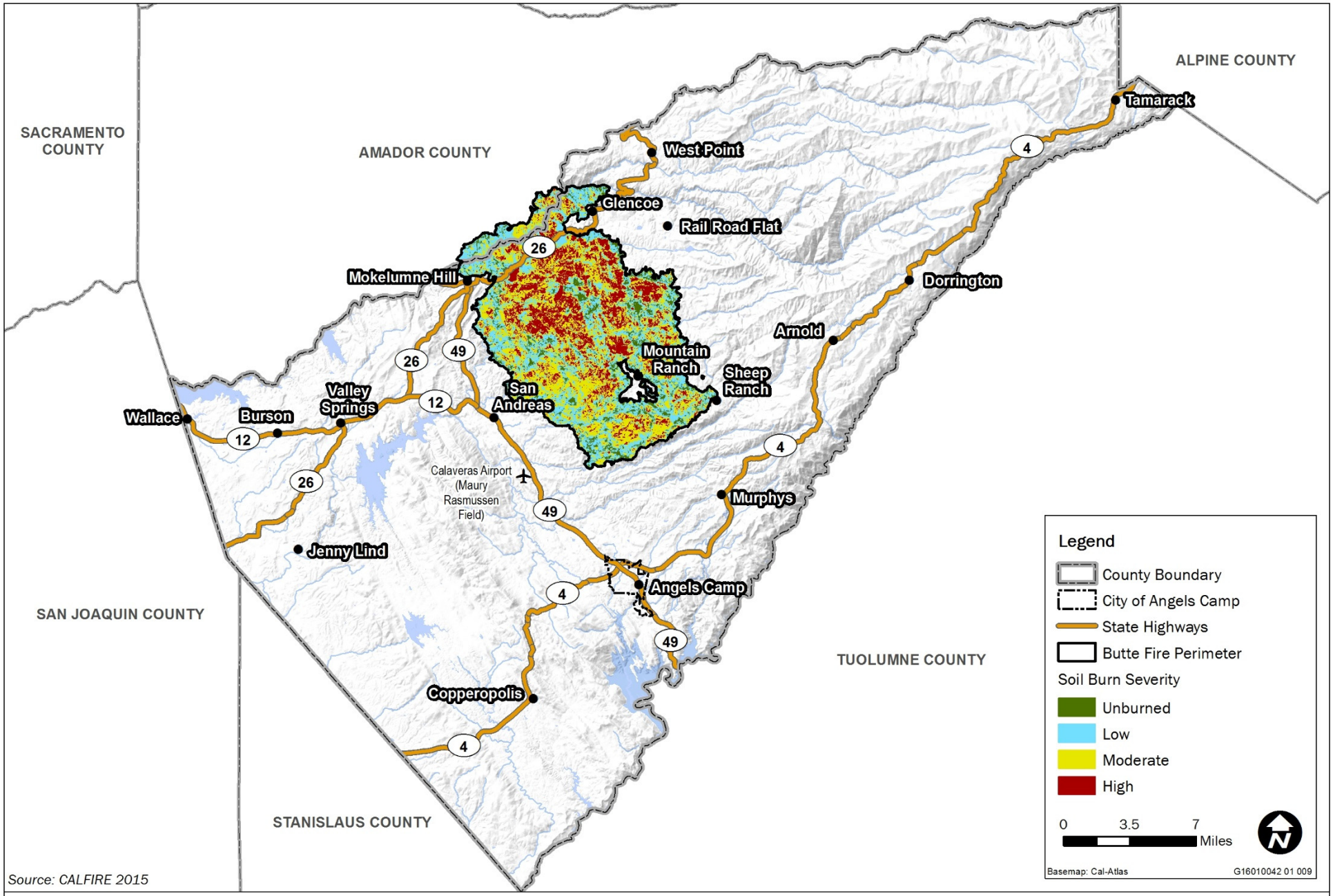


Exhibit 3.3-4

Butte Fire Soil Burn Severity

ASCENT ENVIRONMENTAL

- CNDDB query results for Calaveras County (CDFW 2017; see Appendix C);
- Environmental Conservation Online System (ECOS) Information for Planning and Conservation (IPAC) Trust Resources Report for Calaveras County. Available online at: http://ecos.fws.gov/ipac/. Updated January, 2017 (USFWS 2016) (see Appendix C)
- USFWS National Wetland Inventory Maps (USFWS 2016);
- Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org. updated January, 2017 (CNPS 2017) (see Appendix C);
- *Biological Resources Background Document Calaveras County General Plan Update*. Prepared by Monk and Associates, Inc., Walnut Creek, CA (Calaveras County 2013);
- *Calaveras County General Plan* (Calaveras County 1996).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on biological resources if it would:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- have a substantial adverse effect on federally protected waters of the United States, including wetlands, as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- 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; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

There are no adopted habitat conservation plans or natural community conservation plans that include the project area. Therefore, no conflict would occur and this issue is not discussed further.

Due to the fact that the Personal and Primary Caregiver Cultivation activities would at most support four to six individual plants within a given property, and would require minimal land clearing, these grows are expected to have less than significant or no impacts on biological resources and are not analyzed further in

this section. Additionally, as noted in Chapter 2, "Project Description," commercial cannabis manufacturing, testing, distributing, or transporting allowed under the ordinance would occur within buildings generally located in commercial and industrial areas. As part of this analysis, these facilities are anticipated to occupy existing buildings on parcels zoned for commercial or light industrial land uses within the County and would not result in the disturbance of previously undisturbed land or habitat. As a result, no significant impacts are anticipated and this issue is not discussed further.

IMPACT ANALYSIS

Impact 3.3-1: Impacts to special-status species.

Implementation of the proposed ordinance may result in grading of natural habitat and tree and vegetation removal, which could directly and indirectly affect individual special-status species and/or their habitat, thereby resulting in a **potentially significant** impact.

Within the County, 31 plants, 3 invertebrates, 1 fish species, 6 amphibians, and 20 bird species that have been given special-status designations are known to occur or have the potential to occur in the project area. The issuance of permits, for both indoor and outdoor commercial cannabis operations, as part of the proposed ordinance could result in the removal of trees, vegetation clearing, and grading, resulting in loss of habitat that is known to contain or has the potential to support special-status species. Effects on these habitats could result in removal of local special-status species populations, reduction of local population size, lower plant productivity, and/or disturbance during nesting/maternity season. Because the exact locations of commercial cannabis operations is unknown at this stage, it is not known which specific habitat would be affected, however, based on the zoning types identified in Chapter 2 "Project Description," land for which permits may be submitted to the County could support habitat components that support the aforementioned special-status species. Furthermore, the locations of special-status species, as well as the relative diversity of species within the County, is also unknown, except for the locations reported to the CNDDB and CNPS from previous surveys that have been conducted in the area. Cultivation operation, such as herbicide and pesticide application, could also result in effects to special-status species if present near the cannabis grows. Impacts would be considered **potentially significant**.

Mitigation Measure 3.3-1: Minimum Size of Commercial Cultivation Activities

The County shall amend the proposed ordinance in Sections 17.95.200 and 19.95.230 to require a minimum site size of 1,000 square feet.

Significance after Mitigation

By requiring any commercial cultivation activities within the County to be 1,000 sf or more, all applicants would be required to comply with Central Valley RWQCB Order R5-2015-0113, which stipulates that "any and all impacts to special-status species have been fully mitigated." To comply with this order, property owners, in addition to submitting an application to the County for coverage under the proposed ordinance, would have to apply to the Central Valley RWQCB for a Notice of Intent (NOI) for cannabis cultivation-related activities within the County. As part of this process, a biological site assessment (BSA) would be conducted by a qualified wildlife biologist for the project site. The BSA would evaluate whether any sensitive biological resources, such as wetlands, streams, or habitats for special-status species, occur on the property for which the application has been submitted. Should special status species be identified at or near the respective site that would be affected by development of the property for cannabis cultivation and related activities, Order R5-2015-0113 requires that potential impacts to those species be fully mitigated in order to obtain coverage and receive a NOI. This may include, but is not limited to, the relocation of individuals or the provision of replacement habitat for the species elsewhere within the County. Therefore, since impacts to special-status species are required to be fully mitigated through compliance with Order R5-2015-0113, implementation of the proposed ordinance would have a **less-than-significant** impact on special-status plant species with implementation of Mitigation Measure 3.3-1.

Impact 3.3-2: Modification and/or loss of streamside habitat and fill or other disturbance of waters of the United States and/or state.

Disturbance of natural land cover associated with development of commercial cannabis operations allowed under the proposed ordinance could result in the modification and/or loss of streamside habitat and fill or other disturbance of waters of the United States and/or state resulting in a **potentially significant** impact.

According to the USDA Forest Service vegetation map, there are approximately 87.1 acres of seasonal wetlands in the project area. The project area also supports three major rivers (Calaveras, Stanislaus, and Mokelumne), numerous other streams, six major reservoirs (New Melones, Camanche, New Hogan, Pardee, Salt Spring, and Tulloch), and many other small reservoirs, lakes, and ponds throughout the County.

Issuance of permits, for both indoor and outdoor commercial cannabis grows could result in the removal of trees, vegetation clearing, and grading. If these activities occur within proximity of creeks, streams, rivers, vernal pools, ponds, lakes, or reservoirs these activities could result in the encroachment, fill, accidental or intentional, of waters of the United States or waters of the state. Similar to the analysis above under Impact 3.3-1, the exact location of commercial cannabis operations allowed under the proposed ordinance is unknown at this time, and the presence or proximity to waters of the United States or waters of the state is also unknown. As a result, impacts to waters may occur, and implementation of the proposed ordinance would be considered **potentially significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

As noted above under Impact 3.3-1, and under section 3.3.1, Regulatory Setting, Central Valley RWQCB Order R5-2015—0113 requires compliance and demonstration of compliance with CWA Sections 401 and 404, as well as California Fish and Game Code 1602, which are protective of water quality and ensure no net loss of waters of the United States or waters of the state. Thus, through compliance with Mitigation Measure 3.3-1, applicants pursuing the development of commercial cannabis operations within the County would be required, where appropriate, to acquire permits with site-specific remediation for impacts to wetlands and riparian areas. Permit conditions may include, but are not limited to, restrictions on the months during which construction activities may occur, vehicle speed limits site-specific BMPs (e.g. exclusion fencing or the use of tightly woven fiber netting [no monofilament] for erosion control). In addition, Order R5-2015—0113, in and of itself, requires specific buffers between fish-bearing and non-fish-bearing waters and cannabis-related activities. Therefore, due to existing regulatory controls afforded by Order R5-2015—0113 and regulatory permitting by USACE and CDFW, implementation of the proposed project would have a **less-than-significant** impact on waters of the United States or waters of the state.

Impact 3.3-3: Degradation or removal of sensitive natural communities.

Implementation of the proposed project could result in disturbance or removal of natural land cover, through vegetation removal or grading which could result in the degradation or removal of sensitive natural communities. This would be considered a **significant** impact.

Three sensitive natural communities are known to occur within the project area; riparian woodland, Ione chaparral, and Big Tree Forest. The Big Tree Forest is protected within Calaveras Big Trees State Park and no activities related to the proposed ordinance would occur in the park area. Riparian woodland could occur within the riparian zone of the numerous creeks, streams, and rivers within the project area and may extend beyond the buffers established by the Central Valley RWQCB Order R5-2015—0113 and outside of areas requiring regulatory permitting for the project (see Impact 3.3-2). Additionally, Ione chaparral, which is generally restricted to a geologic formation that occurs in the central portions of Butte and Yuba Counties, the western portions of Nevada, Placer, El Dorado, and Calaveras Counties, may be located on property

within the County that seeks coverage under the proposed ordinance. Besides these known three sensitive natural communities, there are an additional 143 sensitive vegetation alliances that could occur within the USDA Ecological Sections of the Great Valley, Sierra Nevada Foothills, and Sierra Nevada that are within the County area (Appendix D). As mentioned, each vegetation alliance is defined by plant species composition and reflects the effects of local climate, soil, water, disturbance, and other environmental factors. As such, the location, and composition of sensitive vegetation alliances within the project area are unknown until field verified. Nevertheless, these sensitive vegetation alliances could occur in areas where the indoor or outdoor commercial cannabis operations would be developed.

Vegetation removal, including tree removal, and grading could result in the degradation and/or removal of sensitive vegetation alliance components or complete removal of the alliance in a specific area. As a result, this impact is considered **significant.**

Mitigation Measures

No feasible mitigation is available.

Although the BSA required by Central Valley RWQCB Order R5-2015-0113, with which compliance would be ensured through implementation of Mitigation Measure 3.3-1, would identify sensitive biological resources at each site, the order only requires that impacts to "special status" species by fully mitigated. Because it is unknown exactly where the vegetation alliances occur within the County and individual sites for commercial cannabis activities may include one or more of the aforementioned sensitive vegetation alliances, there is no current mechanism that the County can implement to prevent impacts to the sensitive vegetation alliances that may occur within the County as a result of implementation of the proposed ordinance. Therefore, this impact is considered **significant and unavoidable**.

Impact 3.3-4: Conflicts with any local policies protecting biological resources.

Implementation of the proposed project could result in disturbance of natural habitat, which could conflict with the policies of the Calaveras County General Plan. This would be a **significant** impact.

The Calaveras County General Plan (1996) includes policies to protect environmental resources by requiring review of proposed developments for potential impacts to wildlife and botanical resources. The proposed ordinance, partly through compliance with the Central Valley RWQCB Order R5-2015-0113, would be consistent with the policies of the Calaveras County General Plan by requiring individual sites to prepare a BSA that evaluates wildlife and botanical habitats, potential effects on streams, rivers, and lakes, and impacts to riparian areas. As part of the General Order required biological site assessment, all project sites would need to be reviewed consistent with Policy V-1A. General Plan Policies V-2A and V-3A require review of proposed development projects for potential effects on nearby and adjacent streams, rivers, lakes, and riparian areas. The Central Valley RWQCB Order R5-2015-0113 requires compliance with Section 401/404 of the federal Clean Water Act and Section 1602 SAA, thus complying with Policies V-2A and V-3A. However, any cannabis-related activities under 1,000 sf in disturbance area would not be required to comply with the Central Valley RWQCB Order, and potential inconsistencies with County General Plan policies for smaller cannabis-related activities could occur. As a result, impacts would be **significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

As noted above, Central Valley RWQCB Order R5-2015—0113 requires the preparation of a BSA for impacts to biological resources, including effects on nearby and adjacent streams, rivers, lakes, and riparian areas. Mitigation Measure 3.3-1 would require all cannabis-related activities to comply with the provisions of and obtain a NOI pursuant to the order. Therefore, due to regulatory controls afforded by Order R5-2015—0113, implementation of the proposed ordinance would have a **less-than-significant** impact with implementation of Mitigation Measure 3.3-1.

Impact 3.3-5: Disturbance or loss of wildlife migratory corridors.

Development of indoor or outdoor grows within or in proximity to natural environments would alter the vegetation that wildlife use as cover; potentially resulting in disturbance or loss of wildlife migratory corridors. This would be considered a **potentially significant** impact.

Development of indoor and outdoor grows would potentially result in the fragmentation of existing habitat within land zoned as unclassified, general agriculture, agricultural preserve, residential agriculture, rural residential, and general forest. Although these grows would be fenced, and the fences would be at a minimum 8-feet tall, this would not differ from existing privacy fences. Although the grows would create additional barriers to wildlife movement, there would still be available areas, around the grows, to allow for animal passage.

Development of these grows could result in impacts to vegetation from grading and vegetation clearing to accommodate the outdoor grows or for construction of the indoor grow facilities. These actions have the potential to impact the existing environment that wildlife use for daily movement between resting and feeding areas or between summer and winter ranges. For example, the Rail Road Flat herd's annual migratory route takes thousands of animals from the high elevation pine and fir forests of their summer range in Alpine County to the winter range, spring and fall holding areas, and fawning areas in the open oak woodland and oak savanna of the lower foothills and higher elevation timberlands of central and eastern Calaveras County. However, the migration routes for this herd appear to be concentrated in USFS lands (Calaveras 1996) and since no grows would occur within federal land, these migration routes would not be affected.

There are other wildlife corridors in the project area. Exhibit 3.3-3 shows the ECAs in the project area with degrees of permeability, that is the degree to which regional landscapes, encompassing a variety of natural, semi-natural, and developed land cover types, are conductive to wildlife movement and sustain ecological processes. For the most part the ECAs occur where there is little development, along riparian corridors, and ridges. Implementation of the proposed project could result in grow development within these migration routes or adjacent to habitat that provides migratory routes for wildlife. As a result, impacts would be **potentially significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

Although proposed grows could occur in these areas, the Central Valley RWQCB Order prohibits production lands or associated facilities to be located within 100 feet of any surface water, and the removal of trees, in areas outside timberland, within 150 feet of Class I Watercourses[1] (i.e., 1) a watercourse providing habitat for fish always or seasonally, and/or 2) providing a domestic water source) and 100 feet of Class II Watercourses (i.e., 1) a watercourse capable of supporting non-fish aquatic species, or 2) a watercourse within 1,000 feet of a watercourse that seasonally or always has fish present. Furthermore, the Central Valley RWQCB Order also classifies cultivation operations depending on the slopes of the site, amount of occupation and/or acreage disturbance, and distance from a wetland, Class I or II watercourse into Tier 1, Tier 2, and Tier 3 Cultivators. For Tier 2 and Tier 3 cultivators the Central Valley RWQCB requires additional requirements from Tier 2 and Tier 3 cultivators, such as preparing pre-winter BMP implementation inspections by November 1 of each year, conduct effectiveness monitoring after April 1 and before June 15, and submit an annual monitoring report to the executive officer by July 15 (Both Tier 2 and Tier 3), and Tier 3 cultivators also need to prepare and submit for approval a Site Management Plan. Because Tier 3 cultivation activities or associated facilities are located within 200 feet of a wetland, Class I or II watercourse they would likely have to obtain a Section 1602 streambed alteration agreement from CDFW if there is

[1] Watercourse means any well-defined channel with distinguishable bed and bank showing evidence of having contained flowing water indicated by deposit of rock, gravel, sand, or soil (SVRWQCB 2015)

encroachment into riparian habitat. These measures are to protect water quality, but also help protect the wildlife that use these watercourses, and encourage protection of wetlands, watercourses, and associated riparian areas and thus help minimize impacts to wildlife corridors. Therefore, by requiring compliance with the Central Valley RWQCB Order through Mitigation Measure 3.3-1, implementation of the proposed ordinance would have a **less-than-significant** impact on migratory corridors and no further mitigation is required.

Mitigation Measures

No mitigation is required.

This page intentionally left blank.

3.4 ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the proposed ordinance on known and unknown cultural resources and on unknown fossil deposits of paleontological importance. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include pre-historic resources, historic-era resources, and "tribal cultural resources" (the latter as defined by AB 52, Statutes of 2014, in Public Resources Code [PRC] Section 21074).

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). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges). Tribal cultural resources were added as a resource subject to review under CEQA, effective January 1, 2015 under AB 52. This is a new category of resources under CEQA and includes site features, places, cultural landscapes, sacred places or objects, which are of cultural value to a Tribe. Paleontological resources include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains that are more than 5,000 years old and occur mainly in Pleistocene or older sedimentary rock units.

3.4.1 Regulatory Setting

FEDERAL

National Historic Preservation Act

Among those statutes enacted by Congress that affect historic properties, the National Historic Preservation Act of 1966 (NHPA) is the most significant law that addresses historic preservation. One of the most important provisions of the NHPA is the establishment of the National Register of Historic Places (NRHP), the official designation of historical resources. Districts, sites, buildings, structures, and objects are eligible for listing in the Register. Nominations are listed if they are significant in American history, architecture, archeology, engineering, and culture. The NRHP is administered by the National Park Service. To be eligible, a property must be significant under criterion A through D (described below); and ordinarily be 50 years of age or more.

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or

B. Are associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

Once a heritage resource has been recorded and if it is determined to be significant, the potential impacts (or effects) of a project on a heritage property are assessed. Federal regulatory impact thresholds are contained in Section 106 of the NHPA and accompanying regulations (36 Code of Federal Regulations [CFR] Part 800). Section 106 requires that federal agencies consider the effects of their actions on significant archaeological properties prior to implementing a project or "undertaking." The criteria of effect are found in 36 CFR 800.0(a) and state that:

> An undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register.

The Advisory Council's regulations require that the federal agency apply the criteria of adverse effect to historic properties that will be affected by a proposed undertaking (36 CFR 800.9b). An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association, or the quality of data suitable for scientific analysis. These seven aspects of integrity are described as:

- Location. Integrity of location refers to whether a property remains where it was originally constructed or was relocated.
- Design. Integrity of design refers to whether a property has maintained its original configuration of elements and style that characterize its plan, massing, and structure. Changes made after original construction can acquire significance in their own right.
- Setting. Integrity of setting refers to the physical environment surrounding a property that informs the characterization of the place.
- Materials. Integrity of materials refers to the physical components of a property, their arrangement or pattern, and their authentic expression of a particular time period.
- Workmanship. Integrity of workmanship refers to whether the physical elements of a structure express the original craftsmanship, technology and aesthetic principles of a particular people, place or culture at a particular time period.
- Feeling. Integrity of feeling refers to the property's ability to convey the historical sense of a particular time period.
- Association. Integrity of association refers to the property's significance defined by a connection to a particular important event, person or design.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks "focus," it is considered not eligible for the NRHP. In further expanding upon the generalized National Register criteria, evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, flumes, etc.) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length; (2) presence of distinctive engineering features and associated properties; (3) structural integrity; and (4) setting. The highest probability for National Register eligibility exists within the intact, longer segments, where multiple criteria coincide.

STATE

California Register of Historical Resources

All properties listed in or formally determined eligible for listing in the NRHP are eligible for the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope and

with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

California Historical Landmarks (CHL), buildings, structures, sites, or places that have been determined to have statewide historical significance, are also automatically listed in the CRHR. California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR.

A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations (CCR) Title 15, Chapter 11.5, Section 4850. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

2. Is associated with the lives of persons important to local, California, or national history.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC, Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC, Section 5024.1).

2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural,

educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register of Historical Resources (Public Resources Code, Section 5024.1), including the following:

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

b) Is associated with the lives of persons important in our past;

c) 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; or

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

4. The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code, Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American's remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Public Resource Code, Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Assembly Bill 52

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September of 2014, establishes a new class of resources under CEQA: "tribal cultural resources" (TCRs). AB 52, as provided in 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 an NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration. AB 52 also requires revision to CEQA Appendix G, the environmental checklist. This revision would create a new category for TCRs. 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) It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

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

   (3) It 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) It has yielded, or may be likely to yield, information important in prehistory or history.

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (1996) contains the following policies regarding cultural resources that may be applicable to the proposed ordinance:

- **Policy V-4A:** Review proposed development projects to be located within areas identified as high and moderate potential archaeological sensitivity for potential impacts to archaeological resources.

  - **Implementation Measure V-4A-1:** In areas without prior archaeological study or subsurface disturbance, require that an "archaeological resource assessment" be conducted prior to grading or any surface disturbance located within high and moderate areas of archaeological sensitivity.

- **Implementation Measure V-4A-2:** Condition development projects to preserve or allow recovery of any significant on-site archaeological resources in the event archaeological resources in the event archaeological resources are encountered during development or construction, utilizing the guidelines as set forth in Public Resources Code Section 21083.2

- **Policy V-5A:** Encourage property owners to preserve and maintain structures of historic character.
  - **Implementation Measure V-5A-1:** Promote the use of the State of California Historic Building Code to protect historic sites in the County.
  - **Implementation Measure V-5A-2:** Encourage owners of eligible historic properties to apply for State and federal registration of these sites and to participate in tax incentive programs for historic restoration.
- **Policy V-5B:** Encourage coordination with federal, State, and local organizations, to preserve, restore, and enhance unique historic sites.
  - **Implementation Measure V-5B-1:** Identify, assist, and support interested persons or groups of the availability of federal, State, or local funding programs for historic preservation.
  - **Implementation Measure V-5B-2:** Consider, when requested by local groups, the formation of historic districts.

3.4.2 Environmental Setting

The primary source of information for this section is the Calaveras County General Plan Background Report (Calaveras County 2014).

PALEONTOLOGICAL SETTING

Significant nonrenewable vertebrate and invertebrate fossils and unique geologic units have been documented throughout California. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks (refer to geologic timescale in Table 3.4-1). Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield significant paleontological resources. Depending on location, the paleontological potential of subsurface materials generally increases with depth beneath the surface, as well as with proximity to known fossiliferous deposits.

Pleistocene or older (older than 11,000 years) continental sedimentary deposits are considered as having a high paleontological potential while Holocene-age deposits (less than 10,000 years old) are generally considered to have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms. Metamorphic and igneous rocks have a low paleontological potential, either because they formed beneath the surface of the earth (such as granite), or because they have been altered under high heat and pressures, chaotically mixed or severely fractured. Generally, the processes that form igneous and metamorphic rocks are too destructive to preserve identifiable fossil remains.

Calaveras County is located on the western slope of the Sierra Nevada Mountains, within the geologic region of California referred to as the Sierra Nevada geomorphic province. The Sierra Nevada geomorphic province is a tilted fault block almost 400 miles long and extends from the eastern slope to the western slope of the Sierra Nevada Mountains. The Sierra Nevada geomorphic province overlies metamorphic bedrock that contains gold-bearing veins in the northwest trending Mother Lode. The Mother Lode region in the Sierra Nevada extends from El Dorado County, passes through Calaveras County, and ends in Mariposa County.

Table 3.4-1 Divisions of Geologic Time

Era	Period	Time in Millions of Years Ago (approximately)	Epoch
Cenozoic	Quaternary	< 0.01	Holocene
		2.6	Pleistocene
	Tertiary	5.3	Pliocene
		23	Miocene
		34	Oligocene
		56	Eocene
		65	Paleocene
Mesozoic	Cretaceous	145	–
	Jurassic	200	–
	Triassic	251	–
Paleozoic	Permian	299	–
	Carboniferous	359	–
	Devonian	416	–
	Silurian	444	–
	Ordovician	488	–
	Cambrian	542	–
Precambrian		2,500	–

Source: U.S. Geological Survey 2010

The rocks in Calaveras County are divided into two major groups, which are as follows:

- Bedrock series – consisting of steeply dipping metamorphic rocks of Paleozoic and Mesozoic age, and intrusive rocks of Mesozoic age; and
- Superjacent series – the overlying nearly flat beds of sedimentary and volcanic rocks of Tertiary age.

The metamorphic rocks occupy broad belts trending north-northwestward in the central and western portions of the county and are by far the most abundant rocks in the county, covering slightly more than two-thirds of the total area. Metamorphic rocks in the county consist of the following: schist, slate, and limestone of the Calaveras formation (Carboniferous and Permian); schist, greenstone, and slate of the Amador group (Middle or Upper Jurassic); slate of the Mariposa formation (Upper Jurassic); and amphibolites and chloritic schist, greenstone, and phyllite of undetermined age. Granitic rocks of the Sierra Nevada Batholith, exposed primarily in the narrow eastern portion of the county, range in composition from granite to gabbro, granodiorite being the most abundant type. Smaller amounts of basic and ultrabasic intrusive rocks, largely altered to serpentine, are found in narrow, northwestward-trending lenses in the west-central portion of the county.

The Tertiary rocks in Calaveras County consist of the following: quartz sand, clay, and coal of the Ione Formation and auriferous quartzose gravel (Eocene); rhyolitic ash and tuff of the Valley Springs Formation (Miocene); and andesitic lahars and detritus of the Mehrten Formation (Mio-Pliocene). Small patches of basalt of Quaternary age are found in the eastern portion of the county. Sand and gravel lie in and adjacent to existing stream beds. Small glacial moraines are found in the eastern part of the county.

REGIONAL PREHISTORY

California archaeology can be described as a series of patterns—an essentially non-temporal, integrative cultural unit–the way of general life shared by people within a given geographic region. Until quite recently, archaeological researchers developed culture-histories for the Sierran foothill region based on the more studied areas of the western Great Basin and California Central Valley. A 2006 study, however, developed an entirely new chronology focusing on a synthesis of local data from more than 100 excavated sites in the watersheds of the Mokelumne, Calaveras, Stanislaus, and Tuolumne rivers. Based on spatial and stratigraphic analyses of more than 200 radiocarbon dates, more than 4,000 source-specific obsidian hydration readings, slightly more than 875 projectile points, and close to 600 shell beads, five major time periods are defined: Early Archaic (11,500-7000 Before the Present [BP], Middle Archaic (7,000 – 3,000 BP), Late Archaic Late Archaic (3,000-1,100 BP), Recent Prehistoric I (1,100-610 BP), and Recent Prehistoric II (610-100 BP).

Early Archaic (11,500-7000 BP)

Early Archaic deposits are quite rare in the Sierra Nevada foothills; two sites have been identified locally. They include abundant Wide-Stem and Large Stemmed Dart points, hundreds of handstones and millingstones, as well as a variety of cobblecore tools, large percussion-flaked “greenstone” bifaces, and comparatively high frequencies of obsidian from the Bodie Hills source.

Middle Archaic (7,000 – 3,000 BP)

Middle Archaic sites are primarily distinguished by Corner-notched Dart points, an occasional mortar and pestle, and the earliest house structures in association with large subterranean storage pits. Soapstone “frying pans” and other vessels first appear in the local record during the Middle Archaic, along with various stone pendants, incised slate, and stone beads. The presence of atlatl weights and spurs in these deposits confirms that the dart and atlatl were the primary hunting implements.

Late Archaic (3,000-1,100 BP)

Late Archaic sites are among the most common on the western slope of the Sierras. Late Archaic lifeways, technologies, and subsistence patterns were quite similar to those of the previous time period, with the primary difference being an increase in the use of obsidian between about 3000 and 1100 BP. Chert, only available in the foothills of the western Sierra below about 3,000 feet, is common at Late Archaic sites in the lower montane forest up to about 6,000 feet. However, flaked stone assemblages on the western slope found above 6,000 feet are composed almost entirely of obsidian, suggesting that groups who utilized upper elevations of the western Sierra arrived from the east side where obsidian was the primary toolstone.

Recent Prehistoric I (1,100-610 BP)

The beginning of the Prehistoric Period coincides with a region-wide interval of reduced precipitation known as the Medieval Climatic Anomaly. Among the most important changes in the archaeological record of the western slope at this time was the introduction of the bow and arrow, an innovation apparently borrowed from neighboring groups to the north or east. This shift in technology is clearly reflected by the dominance of small stemmed and corner-notched arrow points in Recent Prehistoric I sites.

Recent Prehistoric II (610-100 BP)

The common occurrence of bedrock mortars at Recent Prehistoric II sites suggests that they became an important milling technology by 610 BP. Bedrock milling fixtures are established across the landscape, near well-developed residential middens and as isolated features. It also appears there was greater settlement differentiation during the Recent Prehistoric II Period, with clear residential sites, often including house-depressions and other structural remains, but also special-use localities consisting simply of bedrock milling features. Many more specialized technologies are associated with the Recent Prehistoric II Period, including stone drills and the common occurrence of bone awls, suggesting that basketry and other composite implements may have taken on a new importance. The Desert Side-notched arrow point is first introduced

on the western slope of the Sierras at about 610 cal BP, clearly adopted from Great Basin people to the east. Circular stone shaft-straighteners are also common in these sites, consistent with the use of the bow and arrow. Imported shell beads from coastal California first appear in appreciable amounts in Recent Prehistoric II village sites, as do other rare items such as shell ornaments and bone whistles.

ETHNOGRAPHY

Ethnographically, the county is located within the territory of the Penutian-speaking Mi-Wuk (also spelled Miwok or Me-Wuk). The Mi-Wuk traditionally occupied a large portion of the central Sierra Nevada range, the adjacent foothills, and a portion of the adjacent Sacramento-San Joaquin River valley. Linguistic studies suggest the ancestral Mi-Wuk occupied the Sacramento-San Joaquin Delta area about 2,500 years ago, but did not arrive in the Sierra foothills and mountains until almost 800 years ago. The Mi-Wuk was a well-established society of hunters, fishermen, and plant-food gatherers whose territory stretched from the edge of the San Joaquin Valley to the high elevations of the Sierra Nevada. This wide topographic and vegetative range provided the native people with all manner of foods.

In Calaveras County, the old Mi-Wuk villages that are known to anthropologists were clustered along the Mokelumne, Calaveras, and Stanislaus River drainages. Traditional Mi-Wuk houses were made of thatching, tule matting, or slabs of bark over a conical framework of poles. Other important structure types were the sweat lodge and the dance house, both of which are still in use today. Remains of some of these large structures were found at archaeological sites in the central Sierra foothills.

The archaeological record also contains remnants of a rich material culture, including: flaked stone hunting and butchering tools; plant-processing implements; cooking, eating, and storage vessels; and beads and ornaments made of shell, animal bone, and stone. Like other northern and central California groups, the Mi-Wuk made (and still make) excellent baskets, but as far as is known they did not traditionally make or use pottery. Small lumps and objects of baked clay have been found at several sites in the valley and lower foothills, but no pots or dishes. The foothill groups did make vessels from soapstone, and many of these have been found in archaeological deposits.

REGIONAL HISTORY

Prior to the turn of the 19th century, most European involvement in California was centered on the Spanish missions that lined the coastal area between San Francisco and San Diego. Travel beyond the coast was typically limited to recovery efforts to retrieve runaway neophytes back to the missions. During the first half of the 19th century, non-native involvement in the area was dominated by fur trapping and military interests. After Mexico declared its independence in 1821, more land grants were distributed throughout California, drawing more permanent, non-native settlers into central California. There was also an increased presence of American and European fur trappers throughout California during this time. In 1826 Jedediah Strong Smith led a fur trapping company into California from Utah, and became the first American to enter the region that would come to be referred to as the Mother Lode. Barring these few, there was a very limited white presence in the area of Calaveras County until the discovery of gold in 1848.

Calaveras County encompasses roughly one quarter of California's southern mines, and is one of the eight counties encompassed by the Mother Lode. In 1848 the area was thoroughly explored by Californians entering the area in search of gold. Mexicans Don Antonio Coronel and Benito Perez of Los Angeles were some of the earliest prospectors to enter Calaveras County, arriving in the spring of 1848. By 1849 the gold country was inundated with thousands of prospective miners, and would continue to be so throughout the following decade. The prominence of mining accounted for the names and locations of many of the towns and communities that developed in Calaveras County. The Gold Rush drew people from across the globe to Calaveras County: Chile, Ireland, England, China, Australia, and Mexico to name a few. Race relations were tense during the Gold Rush, with violent disputes occurring between groups regularly.

In 1850, California attained statehood and Calaveras County was among the 27 original counties established by the government. Calaveras was originally proposed to be a huge county, stretching from the coastal mountains outside of the San Francisco Bay to the Nevada border. Its final size was considerably smaller, but still included portions of present day Amador, Alpine, and Mono counties. Pleasant Valley, a small mining camp near present day Jenny Lind, was designated by legislature as the first County Seat in January 1850. Almost immediately, the County Seat was moved to Double Springs. The County Seat was controversially moved to Jackson in 1851 when locals appropriated government records through subterfuge. Less than a year later, the State legislature moved the County Seat to Mokelumne Hill. In 1854 the citizens of Jackson seceded, forming Amador County from the area north of the Mokelumne River. Finally, in 1866 the County Seat was moved for the last time to its current location of San Andreas.

During its more than 150 years of existence, the economy of Calaveras County has been driven by three major industries: mining, lumber, and agriculture. Pan (or placer) mining dominated the efforts of miners during the first few years of the Gold Rush. Within a decade numerous new methods to increase efficiency in mining were introduced, changing the most prevalent demographic of the mining community from the individual miners to mining companies. By 1853 hydraulic mining, using high powered hoses to wash away mountains in search of gold, came into play in the gold fields. Drift mining, digging a tunnel to reach the gold pocket itself, was introduced in Calaveras County in 1855. Quartz mining was introduced in the 1860s and developed with the advent of deep rock mining in the late 1880s. During the 1910s many of the big mines were finally exhausted or forced to shut down due to the labor shortages of World War I. The needs of the war effort impacted what was mined, with gold mining being set aside in favor of necessary base metals like copper. While pre-war production experienced a brief revival following the end of the war, the predominance of Calaveras County's gold mining era ended.

Following the Gold Rush, settlers of Calaveras County turned to various other avenues of economic development. Agriculture flourished in many sections during the late nineteenth century, particularly in the western parts, around towns such as Milton. Early agricultural efforts focused predominantly on fruit, grains, and mixed-use subsistence farming. Locals turned to ranching when farming failed to produce the desired economic revival for the region. Through the 1960s, agricultural activity focused predominantly on livestock, but also included crops such as hay, fruit, and nuts. During the latter half of the twentieth century, commercial crops such as wine grapes and olives began to gain prominence along with the traditional livestock and timber interests.

Lumber has a long-standing history in Calaveras County reaching back prior to the Gold Rush. Communities in the eastern portion of the county, such as Arnold, Avery, and White Pines, have been involved in the logging industry since the 1850s. Sawmills were constructed to provide timber for the booming mining industry, and this need increased with the advent of drift mining in the late nineteenth century. Using first animal, then steam, and finally electric power to run saw mills, the region supplied timber to consumers throughout the region, including Sacramento and Nevada. The community of White Pines developed in the 1940s in response to the needs of the workers of the Blagen Mill. During the 1950s and 1960s the timber industry focused on the areas surrounding West Point and Wilseyville. Due to the closure of various mills, such as Blagen Mill in 1963, Calaveras County's percentage of the state's production diminished in the 1960s, and recreational interests began to develop in the area.

KNOWN CULTURAL RESOURCES IN CALAVERAS COUNTY

Archaeological Sites

Evidence from previous survey work and site investigations in the county indicates that the following prehistoric-archaeological site types may be encountered throughout unsurveyed portions of the county:

- surface scatters of lithic artifacts associated with or without associated midden accumulations, resulting from short-term occupation, and/or specialized economic activities, or long-term occupation;

- bedrock milling stations, including mortar holes and metate slicks, in areas where suitable bedrock outcrops are present;
- petroglyphs and/or pictographs;
- isolated finds of cultural origin, such as lithic flakes and projectile points;
- deeply buried sites dating to Archaic periods;
- ceremonial sites and site of cultural significance; and
- traditional resource gathering sites.

The New Melones Dam and Reservoir is the site of an especially significant prehistoric site. In the environmental work connected with construction of the New Melones Dam and Reservoir, archaeologists identified prehistoric occupation in the region dating back 10,000 years. The New Melones archaeological record includes evidence from the entire Holocene epoch, as well as approximately 700 archaeological sites within the county. The site contains information on diverse, prehistoric Native groups, as well as the Gold Rush and ranching eras of the nineteenth century.

Evidence from previous survey work and site investigations in the county indicates that the following historic-age archaeological site types may be encountered throughout portions of the county:

- historic artifact features and buried deposits of historic debris and artifacts;
- building foundations and associated deposits (homes, businesses, barns, mines, mills, etc.);
- mining remains (shafts, adits, waste rock, tailings);
- water related (ditches, dams, reservoirs, penstocks);
- transportation (roads, trails, railways); and
- ranching and agriculture (terracing, fences, corrals, water troughs).

Historic Sites

Many historic properties in the county are identified through historic building surveys and previous cultural resource studies. Table 3.4-2 shows those properties in the county which have been determined eligible for listing in the NRHP, CRHR, or as a CHL.

Table 3.4-2 Historical Resources in Calaveras County

	NRHP	CRHR	CHL	Point of Interest	City
Altaville (288)			X		Altaville
Altaville Grammar School (N795)	X	X			Altaville
Angels Camp (287)			X		Angels Camp
Angels Hotel (734)	X	X	X		Angels Camp
Avery Hotel-Halfway House (P602)				X	Avery
Birthplace of Archie Stevenot (769)			X		Angels Camp
Calaveras County Bank (N1366)	X	X			Angels Camp
Calaveras County Courthouse (N159)	X	X			San Andreas
Calaveritas (255)			X		San Andreas
California Caverns at Cave City (956)			X		San Andreas
Camanche (254)			X		Burson

Table 3.4-2 Historical Resources in Calaveras County

	NRHP	CRHR	CHL	Point of Interest	City
Campo Seco (257)			X		Campo Seco
Carson Hill (274)			X		Angels Camp
Chili Gulch (265)			X		Mokelumne Hill
Choy, Sam, Brick Store (N1309)	X	X			Angels Camp
Congregational Church (261)			X		Mokelumne Hill
Copperopolis (296)			X		Copperopolis
Copperopolis Armory (N1999)	X	X			Copperopolis
Copperopolis Congregational Church (N2000)	X	X			Copperopolis
Courthouse of Calaveras County and Leger Hotel (663)			X		Mokelumne Hill
Dorrington Hotel and Restaurant (P787)				X	Dorrington
Double Springs (264)			X		Valley Springs
Douglas Flat (272)			X		Douglas Flat
Douglas Flat School (N237)	X	X			Douglas Flat
El Dorado (282)			X		Mountain Ranch
Fourth Crossing (258)			X		San Andreas
Glencoe (Mosquito Gulch) (280)			X		Glencoe
Honigsberger Store (N1762)	X	X			Copperopolis
I.O.O.F. Hall, Mokelumne Hill (256)			X		Mokelumne
Jenny Lind (266)			X		Valley Springs
Jesus Maria (284)			X		Mokelumne Hill
Mercer Caverns (The New Calaveras Cave) (P662)				X	Murphys
Milton (262)			X		Milton
Mitchler Hotel (267)			X		Murphys
Mokelumne Hill (269)			X		Mokelumne Hill
Murphys (275)			X		Murphys
Murphys Grammar School (P44)	X	X		X	Murphys
Murphys Hotel (N139)	X	X			Murphys
O'byrne Ferry (281)			X		Copperopolis
Old Mining Camp of Brownsville (465)			X		Murphys
Paloma (295)			X		Mokelumne Hill
Peter L. Traver Building (466)			X		Murphys
Pioneer Cemetery (271)			X		San Andreas
Prince-Garibardi Building (735)			X		Altaville
Rail Road Flat (286)			X		Rail Road Flat
Red Brick Grammar School (499)			X		Altaville
Reed's Store (N1763)	X	X			Copperopolis
Robinson's Ferry (276)			X		Angels Camp

Table 3.4-2 Historical Resources in Calaveras County

	NRHP	CRHR	CHL	Point of Interest	City
San Andreas (252)			X		San Andreas
Sandy Gulch (253)			X		West Point
Stone Corral (263)			X		Valley Springs
Synder, John J., House (N1298)	X	X			San Andreas
Telegraph City Site, Napoleon and Quail Hill Mines (P1)				X	Copperopolis
Thorn House (N151)	X	X			San Andreas
Utica Mansion (N1290)	X	X			Angels Camp
Vallecito (273)			X		Vallecito
Vallecito Bell Monument (370)			X		Vallecito
Valley Springs (251)			X		Valley Springs
West Point (268)			X		West Point

Notes: NRHP = National Register of Historic Places; CRHR = California Register of Historical Resources; CHL = California Historical Landmarks
Source: Office of Historic Preservation 2016.

RECORDS SEARCHES

Paleontology Records Search

A search of the University of California Museum of Paleontology (UCMP) database was conducted on December 19, 2016. Records of paleontological finds maintained by the UCMP (2016) state that there are 31 localities at which fossil remains have been found in Calaveras County. These occur in the Mariposa, Ione, Valley Springs, and Mehrten geologic formations, primarily of the Pleistocene, Pliocene, Miocene, and Oligocene epochs.

Central California Information Center Records Search

Because of the programmatic nature of the Ordinance analysis, a historic records search was not conducted for the entire county. Future projects implemented under the Ordinance would be subject to subsequent project-level environmental review.

Native American Outreach and Consultation

Sacred Lands File Outreach

On January 19, 2017, a letter was sent to the NAHC to request a database search for sacred lands or other cultural properties of significance in the county. The response from the NAHC dated January 30, 2017, states the sacred lands file search did identify the presence of tribal cultural resources in the county and requested the County to notify four tribes regarding the project to solicit their input and knowledge of resources in the area. Notifications were sent to the listed tribes on February 6, 2017; as of the issuance of the Draft EIR, no responses from the tribes have been received.

Assembly Bill 52 Consultation

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 to the project. Based on a list of tribes who had expressed interest in notification regarding future projects within the county pursuant to AB 52, the County sent letters to the Calaveras Mi-Wuk tribe, the Ione Band of Miwok, and the Buena Vista Rancheria of Me-Wuk on December 1, 2016. No response was received within 30 days of the letter, as pursuant to PRC Section 21080.3.1.

3.4.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

The impact analysis considers the known cultural resource environmental setting in county, the potential for previously undocumented resources, including human remains, and physical effects (i.e., disturbance, material alteration, demolishment) to known and previously undocumented cultural and paleontological resources that could result from implementation of the proposed ordinance. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed ordinance would result in a potentially significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5;
- disturb any human remains, including those interred outside of dedicated cemeteries;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

All issues applicable to cultural resources listed under the significance criteria above are addressed in this chapter.

IMPACT ANALYSIS

Impact 3.4-1: Change in the significance of an historical resource.

Commercial cannabis operations associated with the proposed ordinance could occur on undeveloped lands and/or near historic resources, and would be required to comply with the Central Valley RWQCB Order R5-2015—0113, Waste Discharge Requirements General Order for Discharge of Waste Associated with Medicinal Cannabis Cultivation Activities which requires demonstration "that all potential impacts to cultural resources will be appropriately addressed and mitigated." However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 square feet (sf). Therefore, if areas of commercial cultivation are less than 1000 sf, the proposed ordinance could result in a **potentially significant** impact.

Historical (or architectural) resources include standing buildings (e.g., houses, barns, cabins) and intact structures (e.g., dams, bridges). Calaveras County contains a variety of historic resources, including federal and state recognized resources. Historic resources within the county generally include property types ranging from civic and commercial or industrial buildings, such as the Calaveras County Courthouse, Calaveras County Bank, Murphys Grammar School, the Honigsberger Store, to residential buildings in the county's many small towns. As of December 2016, approximately 15 objects, structure, buildings, and sites in the county have been listed in the NRHP and CRHR; 41 have been listed as California Landmarks; and five have

been listed as California Points of Historical Interest. These resources meet the definition of historic resource under Section 15064.5(a) of the CEQA Guidelines. The demolition, alteration, or disturbance of existing features, buildings, and structures could result in changes to or destruction of historic resources.

The proposed ordinance would allow for brush removal, grading, and irrigation to facilitate the cultivation of medical cannabis. Large buildings could be constructed for processing and manufacturing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. These activities would occur on undeveloped lands zoned for forest, rural residential, and agricultural uses and therefore would be unlikely to affect standing buildings or intact structures. In addition, the Central Valley Regional Water Quality Control Board (RWQCB) has issued an order which imposes regulatory requirements on existing and future commercial cannabis sites that are over 1000 sf; new cultivators would have to comply with the order prior to completion of a Notice of Intent (NOI) which is required to obtain a grading permit. RWQCB's Order R5-2015-0113, Item 23 vii states "that all potential impacts to cultural resources will be appropriately addressed and mitigated." To appropriately address historic resources impacts consistent with Order R5-2015-0113, an architectural survey and evaluation of structures greater than 45 years in age within the area of potential effect would need to be conducted to determine building's or structure's eligibility for recognition under federal and state historic preservation criteria. These surveys would also identify any previously known historical resources so that commercial cannabis operations could be redesigned to avoid impacts on known historic resources. Further, demonstration of appropriate mitigation to the RWQCB is required under Order R5-2015-0113. However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 sf. Therefore, if areas of commercial cultivation were less than 1000 sf, the proposed ordinance could result in a **potentially significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

Implementation of this mitigation measure would require all commercial grows be at least 1000 sf in order to fall under the purview of RWQCB Order R5-2015-0113. Therefore, the proposed ordinance would not result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 and would therefore result in a **less-than-significant** impact.

Impact 3.4-2: Disturb unique archaeological resources.

Commercial cannabis operations associated with the proposed ordinance could occur on properties that contain known or unknown archaeological resources and ground-disturbing activities could result in discovery or damage of as yet undiscovered archaeological resources as defined in CEQA Guidelines Section 15064.5. Future cannabis-related sites would be required to comply with RWQCB's Order R5-2015—0113 which states "that all potential impacts to cultural resources will be appropriately addressed and mitigated." However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 sf Therefore, if areas of commercial cultivation are less than 1000 sf, the proposed ordinance could result in a **potentially significant** impact to unique archaeological resources.

As discussed above in the "Known Cultural Resources in Calaveras County" portion of section 3.4.2, Environmental Setting, evidence from previous survey work indicates that the following archaeological site types may be encountered throughout unsurveyed portions of the county:

- surface scatters of lithic artifacts and projectile points;
- bedrock milling stations;
- petroglyphs and/or pictographs;
- deeply buried sites dating to Archaic periods;
- ceremonial sites and site of cultural significance;
- traditional resource gathering sites;
- historic artifact features and buried deposits of historic debris and artifacts;

- building foundations and associated deposits (homes, businesses, barns, mines, mills, etc);
- mining remains (shafts, adits, waste rock, tailings);
- water related (ditches, dams, reservoirs, penstocks);
- transportation (roads, trails, railways); and
- ranching and agriculture (terracing, fences, corrals, water troughs).

The proposed ordinance would allow for brush removal, grading, and irrigation to facilitate the cultivation of medical cannabis. Large buildings could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. These activities would require various degrees of ground disturbance. All cannabis-related activities for commercial grows of 1000 sf or more would have to comply with the Central Valley RWQCB order which imposes regulatory requirements on existing and future cannabis cultivation and processing sites; new cultivators would have to comply with the order prior to completion of a NOI which is required to obtain a grading permit. The Central Valley RWQCB's Order R5-2015—0113, Item 23 vii states "that all potential impacts to cultural resources be appropriately addressed and mitigated." To appropriately address archaeological resource impacts, an archaeological survey would be conducted for the area of impact. The survey would begin with a record search at Central California Information Center to determine whether the area has been previously surveyed and whether resources were identified. A qualified archaeologist would perform an intensive-level pedestrian survey to examine the area for historic-era or prehistoric archaeological resources, followed by a report summarizing the findings. The recommendations in the archaeological survey report would follow current accepted archaeological practices, in accordance with pertinent laws and regulations. Demonstration that, with the recommendations, impacts to cultural resources would be mitigated would be required as part of compliance with Central Valley RWQCB's Order R5-2015—0113. However, the RWQCB Order does not apply to areas of commercial cultivation that are less than 1000 sf. Therefore, if areas of commercial cultivation are less than 1000 sf, the proposed ordinance could result in a **potentially significant** impact to unique archaeological resources.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

Implementation of this mitigation measure would require all commercial grows be at least 1000 sf in order to fall under the purview of RWQCB Order R5-2015-0113. This would require activities allowed by the ordinance to avoid disturbance, disruption, or destruction of archaeological resources and would therefore result in a **less-than-significant** impact.

Impact 3.4-3: Accidental discovery of human remains.

Previously undiscovered human remains could be discovered when soils are disturbed during construction of cultivation and processing sites under the proposed ordinance. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would make this impact **less than significant**.

The location of grave sites and Native American remains can occur outside of dedicated cemeteries or burial sites. Ground-disturbing construction activities could uncover previously unknown human remains, which could be archaeologically or culturally significant. The proposed ordinance would allow for brush removal, grading, and irrigation to facilitate the cultivation of medical cannabis. Structures could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. These activities would result in limited, shallow levels of soil disturbance; it is unlikely that unknown human remains would be unearthed by earth-disturbing activities associated with the proposed ordinance because of the shallow soil disturbance required. Nevertheless, the potential exists for previously undiscovered human remains to be discovered when soils are disturbed.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the

treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097.

If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the project applicant shall notify the Calaveras County coroner and the NAHC immediately, according to Section 5097.98 of the State Public Resources Code 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 archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.94.

Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 3.4-4: Disturb a unique paleontological resource.

It is unlikely that paleontological resources would be disturbed because of the types of soil formations that underlay the county and the limited soil disturbance associated with the proposed ordinance. Therefore, this impact would be **less than significant**.

The proposed ordinance would allow for brush removal, grading, and irrigation to facilitate the cultivation of medical cannabis. Structures could be constructed for processing activities, as well as smaller sheds for storage of fuel, pesticides, and herbicide. These activities would result in limited, shallow levels of soil disturbance; paleontological potential of subsurface materials generally increases with depth beneath the surface.

Calaveras County is located within the Sierra Nevada geomorphic province which primarily overlies metamorphic bedrock in addition to nearly flat beds of sedimentary and volcanic rocks of Tertiary age. The metamorphic rocks occupy broad belts trending north-northwestward in the central and western portions of the county and are by far the most abundant rocks in the county, covering slightly more than two-thirds of the total area. Granitic rocks of the Sierra Nevada Batholith, exposed primarily in the narrow eastern portion of the county, range in composition from granite to gabbro, granodiorite being the most abundant type. The Tertiary rocks in Calaveras County consist of the following: quartz sand, clay, and coal and auriferous quartzose gravel, rhyolitic ash and tuff of the Valley Springs Formation, and andesitic lahars and detritus of the Mehrten Formation. Small patches of basalt of Quaternary age are found in the eastern portion of the county. Sand and gravel lie in and adjacent to existing stream beds. Small glacial moraines are found in the eastern part of the county. Metamorphic and igneous rocks (such as granite and volcanic rock) have a low paleontological potential, either because they formed beneath the surface of the earth, or because they have been altered under high heat and pressures, chaotically mixed or severely fractured. Generally, the processes that form igneous and metamorphic rocks are too destructive to preserve identifiable fossil remains. Therefore, the county area is considered to have a low paleontological sensitivity.

Because of the types of soil formations that underlay the county are not considered sensitive for paleontological resources and the proposed ordinance would result in limited soil disturbance, impacts on paleontological resources are considered **less than significant**.

Mitigation Measures

No mitigation measures are necessary.

Impact 3.4-5: Change in the significance of a tribal cultural resource

Consultation with the Calaveras Mi-Wuk tribe, the Ione Band of Miwok, and the Buena Vista Rancheria of Me-Wuk has resulted in no resources identified as TCRs as described under AB 52. Because no resources meet the criteria for a TCR under PRC Section 21074, this impact would **less than significant**.

As part of the 2013/2014 legislative session, AB 52 established a new class of resources under CEQA, TCRs, and 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. As detailed above, the County sent letters to the Calaveras Mi-Wuk tribe, the Ione Band of Miwok, and the Buena Vista Rancheria of Me-Wuk on December 1, 2016, in compliance with AB 52. No responses were received within the 30-day response period requesting consultation pursuant to AB 52.

In addition, the NAHC identified four tribes that might have input and knowledge of resources in the area. Notifications were sent to the listed tribes on February 6, 2017; as of the issuance of the Draft EIR, no responses from the tribes have been received.

Pursuant to PRC Section 21080.3.1 (b), tribes have 30 days from the receipt of the letter to request consultation; no response was received to the December 1, 2016 letters. Consequently, no tribal concerns or TCRs have been identified. Therefore, the proposed ordinance would have a **less-than-significant** impact to TCRs as defined in PRC Section 21074.

Mitigation Measures

No mitigation measures are necessary.

3.5 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting within the County, including runoff, storm drainage, and flood control. Regulations and policies affecting local hydrology and water quality are discussed, and impacts are identified that may result from implementation of the proposed ordinance. Mitigation measures are recommended to reduce potential impacts, where appropriate.

3.5.1 Regulatory Setting

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board (State Water Board) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives.

In California, implementation of TMDLs is achieved through water quality control plans, known as basin plans. Basin plans contain specific water quality standards, as well as a program of implementation for how those water quality standards may be achieved. A TMDL might be one component of that program. Basin plans, their contents, and the applicability of Section 303(d) are discussed in further detail in the section on state regulations, below.

EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. National Pollutant Discharge Elimination System (NPDES) permit limits for listed pollutants must be consistent with the waste load allocation prescribed by the TMDL. After implementation of a TMDL, it is anticipated that the environmental issues associated with the regulated pollutant that led to listing of a given waterbody on the Section 303(d) list would be remediated.

CWA Section 404

In accordance with Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the United States (US). Waters of the US and their lateral limits are defined in Title 33, Part 328.3(a) of the CFR to include navigable waters of the US, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Any activity resulting in the placement of dredged or fill material within waters of the US requires a permit from USACE. In accordance with Section 401 of the Clean Water Act, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the project will uphold water quality standards. Waters of the US and wetland protection requirements of the CWA administered by USACE are further discussed in Section 3.3, "Biological Resources."

CWA Section 401 and 402 National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the US. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. "Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

National Toxics Rule

In 1992, EPA issued the National Toxics Rule (NTR) (40 CFR 131.36) under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The NTR established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule (CTR) in May 2000. The CTR establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the NTR.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses of waters and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;
- where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and,
- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to states, communities and individuals. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas (SFHAs) are the areas identified as having a one percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain, if the development is expected to increase flood elevation by 1 foot or more.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary maximum contaminant levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to Department of Health Services (DHS). DHS is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

STATE

CALIFORNIA PORTER-COLOGNE ACT

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Board and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Clean Water Act. The applicable RWQCB for the proposed project is the Central Valley RWQCB. The State Water Board and the Central Valley RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by the State Water Board in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its Basin Plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Central Valley RWQCB

The applicable RWQCB for the proposed project is the Central Valley RWQCB. Through powers granted by the Porter-Cologne Act, they have adopted a Basin Plan for the Central Valley region that includes a comprehensive list of waterbodies within the region, as well as detailed language about the components of applicable Water Quality Objectives (WQOs). The Central Valley RWQCB also administers the adoption of waste discharge requirements (WDRs), manages groundwater quality, adopts projects within its boundaries under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit).

Basin Plan

The Central Valley RWQCB implements the Basin Plan for the Central Valley Region, which recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities throughout the Sacramento and San Joaquin River Basins, including Calaveras County. Through the Basin Plan, the Central Valley RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, non-contact and contact water recreation, groundwater recharge, fresh water replenishment, hydroelectric power generation, and preservation and enhancement of wildlife, fish, and other aquatic resources.

The Basin Plan was originally approved and adopted in 1975, and has subsequently been reviewed and amended several times. The Fourth Edition was revised and approved by the Central Valley RWQCB in 1998. The Fourth Edition was most recently revised in July 2016, and incorporates 28 amendments approved since the Third Edition was issued in 1994.

Cannabis Cultivation Waste Discharge Regulatory Program

The Central Valley RWQCB adopted General Order R5-2015-0113 on October 5, 2015, which regulates discharges of waste from medical cannabis cultivation activities to ensure those activities do not affect water resources. The General Order includes enforceable requirements for cannabis cultivators in the Central Valley Region whose cultivation activities occupy and/or disturb more than 1,000 square feet. Cannabis activities that disturb less than 1,000 feet do not generally cause more than de minimis impacts to water quality, and therefore are not covered by the General Order. Cannabis cultivators whose operations are not in compliance with local and/or county ordinances cannot obtain coverage under the General Order, but are nonetheless expected to abide by all Discharge Prohibitions and Discharge Specifications, and implement all Best Management Practices (BMPs) outlines in the General Order to avoid impacts to water resources.

The General Order includes a classification system that establishes different tiers for cultivations based on their potential to impact water quality. Tiers are defined by physical characteristics of the cannabis operation and the local environment. As the threat to water quality by an operation increases, so too do the requirements on the operator to protect water quality and comply with the General Order.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

The State Water Board adopted the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit) in August 1999. The state requires that projects disturbing more than one acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Construction Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

NPDES Storm Water Permit for Discharges from Small Municipal Separate Storm Sewer Systems

Calaveras County receives coverage for 180 square miles of county land under the NPDES statewide permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (MS4 Permit). The state identified certain community lands within the county as storm water dischargers, and on December 27, 2006, the Central Valley RWQCB formally notified the County that the communities of Arnold and Avery/Hathaway Pines, Murphys/ Douglas Flat, San Andreas, Valley Springs, and Copperopolis would require permit coverage for storm water discharges under the MS4 program. The MS4 Permit requires that districts covered by the permit develop and implement a program to prevent discharges of pollutants from construction sites and associated impacts on beneficial uses of receiving waters. The program includes development and adoption of an ordinance to establish authority to regulate and control pollutant discharges.

California Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments" DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Diversion Water Use

California Water Code Section 5101 requires each person or organization that uses diverted surface water or pumped groundwater from a known subterranean stream after December 31, 1965 to file with the State Water Board an initial Statement of Water Diversion and Use prior to July 1 of the following year. Supplemental Statements are required at three-year intervals following the filing of an Initial Statement if there is continued diversion of water.

The main purpose of the Statement Program is to create a central repository for records of diversions of water. This repository differs from the records of appropriated water rights that are registered, permitted, and licensed. A Statement is not a confirmed water right; it is only a statement of diversion and use.

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SB1168, SB 1319, and AB 1739) in 2014. The intent of the Acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). Local agencies had until January 1, 2017 to elect to become or form a groundwater sustainability agency. In the event a basin is not within the management area of a groundwater sustainability agency, the county within which the basin is located will be presumed to be the groundwater sustainability agency for the basin. However, the county may decline to serve in this capacity (Water Code Section 19724).

In exercising its authority under the SGMA, a groundwater sustainability agency must consider the interests of holders of overlying groundwater rights, among others, and may not make a binding determination of the water rights of any person or entity (Water Code Sections 10723.2, 10726.8). The SGMA also provides local agencies with additional tools and resources designed to ensure that the state's groundwater basins are sustainably managed.

The SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority (Water Code Sections 10720.7, 10722.4) All basins designated as high- or medium-priority basins must be managed by a groundwater sustainability agency under a groundwater sustainability plan that complies with Water Code section 10727 et seq. If required to be prepared, groundwater sustainability plans must be prepared by January 31, 2020 for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR, or by January 31, 2022 for all other high- and medium-priority basins. In lieu of preparation of a groundwater sustainability plan, a local agency may submit an alternative that complies with the SGMA no later than January 1, 2017 (Water Code Section 10733.6).

The Stockton East Irrigation District has notified DWR that it has elected to become a GSA pursuant to Water Code Section 10723.8, and intends to undertake sustainable groundwater management of the portion of the Eastern San Joaquin Groundwater subbasin that lies within the boundaries of Stockton East, including the portion of the groundwater basin that lies within Calaveras County and the Calaveras County Water District (CCWD) area.

California Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, the State Water Board adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

California Administrative Code

Title 22 of the California Administrative Code (Article 16, Section 64449) defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues.

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (1996) contains the following policies regarding hydrology and water quality that may be applicable to the project:

Land Use

- **Policy II-1A:** When public facilities and services, such as but not limited to water, waste disposal, roadways, and/or fire protection, are not available at required levels, permit a developer to build those facilities to specified standards, or to contribute proportional funds to build and service those facilities.
  - **Implementation Measure II-1A-1:** Work with all special districts and agencies to assess the availability and capacity of public facilities and services for future development and the need to improve those facilities and services to required levels. Condition new subdivision development to build or pay the proportional amount to build the appropriate facilities.
  - **Implementation Measure II-1A-2:** Calculate developer contributions toward public facilities and services to cover the costs of those facilities and services at the time of their construction.

Water Resources

- **Policy IV-9A:** Support the development of water projects in the County for domestic and irrigation purposes.
  - **Implementation Measure IV-9A-1:** Pursue available funding sources for the development of water projects in the County.
- **Policy IV-10A:** Encourage continued cooperation among water suppliers in meeting the water needs for the County as a whole.
  - **Implementation Measure IV-10A-1:** Achieve orderly expansion of water districts in the County through Local Agency Formation Commission (LAFCO) review.

Ecological Resource Areas

- **Policy V-2A:** Review proposed development projects for potential effects on nearby and adjacent streams, rivers and lakes.
  - **Implementation Measure V-2A-1:** Require appropriate grading and drainage plans for proposed development projects.
  - **Implementation Measure V-2A-2:** Require erosion control measures for all grading and earth moving activities which may contribute to significant sedimentation.
  - **Implementation Measure V-2A-3:** Develop a County grading ordinance.
  - **Implementation Measure V-2A-4:** Investigate utilizing the services of the Soil Conservation Service.
- **Policy V-3A:** Review proposed development projects for potential impacts to riparian areas.
  - **Implementation Measure V-3A-1:** Require that any 100-year flood plains be shown on all plot plans and subdivision maps for areas subject to inundation.
  - **Implementation Measure V-3A-2:** Amend the County Zoning and Subdivision Codes to protect riparian habitat.

Recreational Resources

- **Policy V-9A:** Balance water resources development with the preservation of streams and rivers in their natural state.
  - **Implementation Measure V-9A-1:** Take part in proceedings at the state and federal level which concern water resources development within the County.

Flood Hazards

- **Policy VII-4A:** Review building proposals for flood safety.
  - **Implementation Measure VII-4A-1:** Require that any 100-year flood plains be shown on all building plot plans.
  - **Implementation Measure VII-4A-2:** Require that all future buildings within slow surface drainage areas be placed above such areas or on properly designed foundation systems.
  - **Implementation Measure VII-4A-3:** Enforce the Uniform Building Code regarding flood protection.

Calaveras County Code

Chapter 8.20 – Well Construction and Destruction

The Calaveras County Code contains provisions to "regulate the construction, siting, reconstruction, modification, abandonment, and destruction of water wells, agricultural wells, cathodic protection wells, industrial wells, geothermal heat exchange wells, monitoring and observation wells, test wells, test holes and exploration holes in such a manner that the groundwater of the county will not be contaminated or polluted and that the water obtained from wells will be suitable for beneficial uses and will not jeopardize the health, safety or welfare of the people of Calaveras County.

Chapter 15.05 Grading and Drainage Ordinance

The Calaveras County Code contains a grading and drainage ordinance that is intended to fulfill the requirements of the Storm Water Management Plan (described below), and applicable building codes. Section 15.05.050 provides that "Public works shall prepare a Calaveras County Grading, Drainage, and Erosion Control Manual that includes guidelines, procedures, and design standards" (described below). This ordinance would apply to development under the proposed project.

Calaveras County Storm Water Management Plan

The State Water Board requires all regulated jurisdictions to prepare a Storm Water Management Plan as a condition of coverage under the California statewide General Permit for Storm Water Discharges from Small MS4s (MS4 Permit). The objective of the Calaveras Plan is to maintain high water quality in receiving waters thereby preserving environmental integrity and ecological resources. The Plan provides a framework for development and implementation of various water management activities necessary to control and limit the discharge of pollutants into local storm drainage systems.

Calaveras County Grading, Drainage and Erosion Control Plan

The Calaveras County Grading, Drainage and Erosion Control Plan (Grading Plan) identifies specific procedures, standards, and requirements for ground-disturbing development projects in unincorporated areas of Calaveras County based on the level of activity associated with that project. The Grading Plan details permit procedures and application requirements; specifications for grading plans; design standards; and the requirement for construction quality assurance, and technical studies and reports.

Calaveras County Groundwater Management Program

The purpose of the Calaveras County Groundwater Management Plan is to provide management direction for the continued beneficial use and stewardship of the portion of the Eastern San Joaquin groundwater subbasin that lies within Calaveras County. CCWD has developed the Groundwater Management Plan to meet the requirements of SB 1938. Groundwater is a major source of domestic water supply, and is used locally by water purveyors and individuals to meet agricultural water needs (CCWD 2007). CCWD manages groundwater supplies in conjunction with surface water supplies to the benefit of the county (CCWD 2007).

3.5.2 Environmental Setting

SURFACE WATER HYDROLOGY

Calaveras County has three primary river systems, the Mokelumne, Calaveras, and Stanislaus Rivers (Exhibit 3.5-1). These three river systems carry runoff down the western slope of the Sierra Nevada range to California's Central Valley. All three rivers are dammed on their main branch in one or more locations, and have extensive water supply and control infrastructure that provides irrigation for agriculture in the Central Valley, and municipal water for users both within and outside of the County.

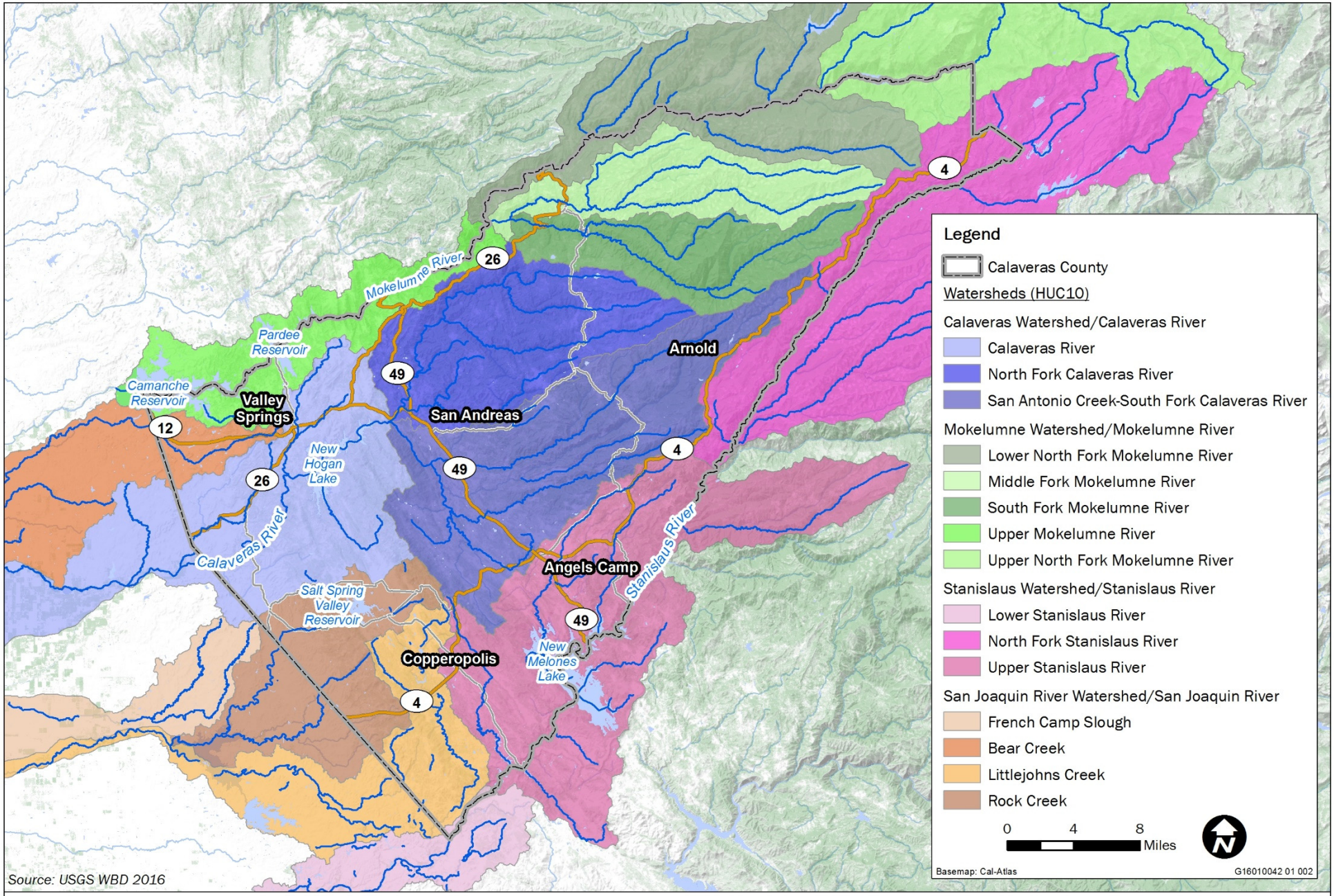


Exhibit 3.5-1

Surface Hydrology

Mokelumne River

The Mokelumne River forms the northern border of Calaveras County, which it shares with neighboring Amador County. It is formed by the confluence of three forks that all originate high in the Sierra Nevada mountains; its headwaters originate on the North Fork in Alpine County at an elevation of approximately 10,400 feet above mean sea level (amsl), where they are primarily fed by snowmelt. The Middle and South Forks originate at approximately 6,800 and 6,380 feet amsl, respectively, and both flow in a westerly direction to join the North Fork approximately 28 miles downstream of their headwaters. Below this point forms the Mokelumne River proper, which flows into the Pardee Reservoir below Mokelumne Hill. The three forks of the Mokelumne River above the Pardee Dam drain an area of approximately 630 square miles (known as the Upper Mokelumne River Watershed), and an annual average of 753,000 af of water per year in Calaveras County (MAC 2013). The Lower Mokelumne River Watershed in Calaveras County comprises that portion of the Mokelumne River that flows the three miles from the dam at the Pardee Reservoir to the head of the Camanche Reservoir (both described below).

Calaveras River

Like the Mokelumne River, the Calaveras River originates in the Sierra Nevada mountains. It flows along two forks, the North Fork and South Fork, southwest toward Stockton. The river is fed principally by rainwater, and to a lesser extent by snowmelt. The watershed encompasses approximately 470 square miles and feeds the New Hogan Reservoir.

The 470-square mile Calaveras River watershed contains lands located in both Calaveras and San Joaquin Counties, but most of the watershed lies in Calaveras County. The Calaveras River is tributary to the San Joaquin River. Like the Mokelumne River, the Calaveras River watershed may be divided into the Upper Calaveras and Lower Calaveras River Watersheds, and demarcated just west of the New Hogan Reservoir. The Upper watershed above the New Hogan dam is 363 square miles and has an annual average runoff of approximately 166,000 acre-feet (af).

Below the New Hogan Reservoir is the Lower Calaveras River – Mormon Slough area. The watershed for this stretch of the river drains approximately 115,000 acres and receives up to 90,000 af of surface water supply from the Calaveras River (Calaveras County 2007).

Stanislaus River

The Stanislaus River drains a narrow basin of approximately 980 square miles above the foothills on the western slope of the Sierra Nevada range, forming the southern boundary of Calaveras County. The elevation of the river ranges from 10,000 feet amsl at the headwaters to 15 feet amsl at the mouth. Like the Mokelumne River, the Stanislaus, too, has a North, Middle, and South fork. These three tributaries join to become the Stanislaus River proper just above New Melones Lake, approximately three miles north of Parrots Ferry. The North Fork is entirely within Calaveras County, and the Middle and South Forks are in Tuolumne County (MAC 2013).

WATER SUPPLY SYSTEMS

Calaveras County is home to water supply infrastructure that provides significant water management and water resources for parts of the state of California. This section provides a summary of the major reservoir systems, and includes usage and storage capacity for each. In addition to those reservoirs summarized below, there are numerous other, smaller, older reservoir systems designed for flood control and irrigation purposes.

Pardee Reservoir

The Pardee Reservoir, which was completed and came into operation in 1929, is owned and operated by the East Bay Municipal Utility District (EMBUD). It receives water from the Mokelumne River and provides municipal and industrial water to the East Bay area, flood control, and hydroelectric power generation (Calaveras County 2007). The reservoir is fed by the Mokelumne River above Camanche Reservoir, and has

a maximum capacity of 197,950 af (EMBUD 2017). Water in the Pardee Reservoir is an important source of domestic drinking water, and therefore recreational activities that could compromise water quality are restricted on the Pardee Reservoir relative to other reservoirs in Calaveras County (MAC 2013).

Camanche Reservoir

Ten miles downstream of the Pardee Reservoir is the Camanche Reservoir; like the Pardee, the Camanche is owned and operated by EMBUD. It was originally constructed and came into operation in 1963 as a source of agricultural and municipal water supply. Additional recreational and power uses were added in 1983. The maximum capacity of the reservoir is 417,120 af (Calaveras County 2007; EMBUD 2017).

New Hogan Reservoir

The New Hogan Reservoir is owned and operated by the U.S. Army Corps of Engineers (USACE) and was completed in 1964 for purposes of flood control and water supply. The North and South Forks of the Calaveras River conjoin immediately upstream of the reservoir, and provide its water supply. Total water supply is approximately 317,000 af (DWR 2010), which supplies irrigation water to the Stockton East Water District and CCWD (Calaveras County 2007; MAC 2013).

Tulloch Reservoir

The Tulloch Reservoir was developed as part of the Tri-Dam Project in the 1950s by the Oakdale and South San Joaquin Irrigation Districts, and continues to be managed by the Tri-Dam project to supply domestic and irrigation water. Electricity is also generated as a part of the Tri-Dam project under a license issued by the Federal Energy Regulation Commission (FERC) (Tri-Dam 2017). The reservoir is located at Copperopolis on the lower Stanislaus River below New Melones Reservoir. Total capacity of the reservoir is approximately 67,000 af (Calaveras County 2007).

New Melones Reservoir

The New Melones Reservoir, completed and operational in 1979, is owned and operated by the U.S. Bureau of Reclamation. It is the largest reservoir in the county, and one of the largest in the state, with a drainage area of approximately 900 square miles, and a maximum capacity of 2,400,000 af retained by the 625-foot New Melones Dam on the Stanislaus River (DWR 2010). It provides irrigation water, flood control, and hydroelectric power generation (Calaveras County 2007).

Salt Springs Reservoir

Salt Springs Reservoir straddles the Amador – Calaveras county line approximately 30 miles east-northeast of the community of Jackson in the Eldorado National Forest. It was developed as a part of a hydroelectric generation project by Pacific Gas and Electric (PG&E). Construction of the dam was completed in 1931. The total capacity of the reservoir is 141,900 af (Calaveras County 2007).

SURFACE WATER QUALITY

The quality of water in surface waterbodies such as streams, rivers, and lakes is determined by a variety of natural and anthropogenic conditions. Topography, biology, type of land use, and level of development are all examples of factors that can influence the water quality conditions. Changes in any of the variables that influence water quality, such as land disturbance or clearing of vegetation, can alter the condition of a river or lake in myriad ways. The condition of surface water in Calaveras County is protected through the Central Valley RWQCB basin plan and the establishment of TMDLs for surface water bodies in the county that have been affected by natural or human-made changes.

The State Water Board complies with Section 303(d) of the Clean Water Act through preparation of a list of impaired waterbodies in the State of California. The initial list of impaired waterbodies for California was approved by the U.S. Environmental Protection Agency (EPA) in 2003, and it is updated on a quadrennial basis. TMDLs are established for parameters for the waterbodies described below. As discussed, TMDLs are addressed through the development and implementation of mitigating actions specified in the basin plan.

The Lower Stanislaus River in Calaveras County is on the current Section 303(d) list for chloropyrifos, diazinon, group A pesticides (chloradane, toxaphene, heptachlor, and endosulfan, among others), mercury, temperature, and unknown toxicity. Chloropyrifos, diazanon and group A pesticides are byproducts of agricultural activities and therefore are likely to have resulted from agriculture on lands drained by the Stanislaus River. Four of the large reservoirs located within Calaveras County are on the Section 303(d) list for mercury: New Hogan, Pardee, Tulloch, and New Melones. Mercury is a byproduct of placer mining operations, and likely results from the continued erosion of mercury-bearing tailings deposits from historical mining operations. Camanche Reservoir is listed for copper and zinc. Bear Creek is listed for diazinon, E. Coli., low dissolved oxygen, and copper. Littlejohns Creek, from north of Copperopolis to the San Joaquin Delta Lands is listed for E. Coli. and unknown toxicity (CVRWQCB 2012).

The Upper Mokelumne Watershed Authority (UMWA) found that the Upper Mokelumne River contained problematic concentrations of the following parameters: turbidity, alkalinity, aluminum, nitrate, and pathogens. High turbidity and low alkalinity are natural characteristics of the watershed, but other elevated contaminants could be, at least in part, the result of anthropogenic activity. Characteristics in some parts of the Upper Mokelumne River watershed lend to elevated concentrations of parameters of concern, namely, low attenuation capacity in riparian areas and elevated soil clay content (MAC 2013).

GROUNDWATER RESOURCES

Groundwater resources are recharged through direct percolation from precipitation (rainfall or snowmelt), infiltration from streamflow, and subsurface inflow. Deep percolation of precipitation is the portion of precipitation that falls on the watershed, infiltrates through the root zone, and recharges underlying groundwater. Deep percolation of precipitation can contribute a significant portion of inflow to a basin, and it is influenced by precipitation volume and intensity versus infiltration capacity, soil type, topography, evapotranspiration, hydrogeology, and impervious areas. Deep percolation in Calaveras County is likely to occur during and for some time following precipitation events, and occurs during an extended period during spring freshet, when snow slowly melts and eventually exceeds the capacity of the ground to accept infiltration, leading to significant runoff. Subsurface groundwater recharge also occurs from streams and rivers to surrounding fractured bedrock when groundwater levels are lower than river surface elevations.

Groundwater resources in Calaveras County can be characterized as one of two distinct types: 1) traditional, alluvial-hosted groundwater resources, and 2) fractured, bedrock-hosted groundwater resources. Most of the county is underlain by Sierra Nevada bedrock, which plays host to the latter type of groundwater resources. By contrast, a small portion of western Calaveras County (7.5% of the total county land) is underlain by the Eastern San Joaquin groundwater subbasin, which comprises westward-thickening alluvial host sediments and traditional groundwater resources.

The geology of Calaveras County is largely defined by the folded and faulted igneous and metamorphic basement rocks of the Sierra Nevada batholith. The hydrogeologic conditions in this part of county are typical of granitic, mountainous terrain, where groundwater is controlled by the weathering and structure of the bedrock. The occurrence and flow of groundwater is significantly different in fractured bedrock than in the unconsolidated sediments (e.g. sand and gravel) of traditional aquifer systems. Fracture sets and joints within the resistant metamorphic and igneous bedrock rarely contain sufficient groundwater for agriculture or domestic water supplies (CCWD 2007). From a regulatory standpoint, it is difficult to delineate bedrock source areas as groundwater basins or regulate them within surface and groundwater management districts. Groundwater resources in these areas are intermittent and unpredictable, and therefore are not amenable to traditional management. Due to the unpredictable nature of the jointing sets and location of fractures, a large difference in well yields can be observed between wells that are close together.

In the eastern portion of the county, surface sediments lie in a thin layer immediately above Sierra Nevadan basement rock. Generally, sedimentary and alluvial sequences thicken westward, with a sequence beginning with the unconformable Ione formation overlain by a sequence of sedimentary deposits that culminate in the

unconsolidated alluvial sediments of the Central Valley. These sediments host the well-defined, regulated groundwater resources of the western portion of the county.

The Eastern San Joaquin groundwater subbasin is a part of the San Joaquin Valley groundwater basin (Exhibit 3.5-2), and is managed under the CCWD Groundwater Management Plan. The Eastern San Joaquin sub-basin extends from the western corner of Calaveras County to west of the cities of Stockton and Lodi. Use of water from the Eastern San Joaquin sub-basin for irrigation and municipal purposes has led to continual decline of available groundwater within the aquifer over the last 45 years and has resulting in the subbasin listing on DWR's list of critically overdrafted basins (DWR 2016). Overdraft of the aquifer has led to subsidence in areas in and around Stockton and Lodi.

Officially-delineated groundwater basins have not been identified elsewhere in the county. Wells drilled into the alluvial sediments of the Eastern San Joaquin groundwater sub-basin, and other alluvial sediments are more reliable in terms of yield than those in Sierra Nevadan basement rocks; however, as demands are placed on the aquifer, it is becoming less reliable over time.

Well records for the county show that since 2006, work was carried out on 1,410 wells. Of this number, 727 have information identifying the type of work carried out, which shows that only approximately 2% of wells over this period were visited for deepening (or other repair) activities. Over the past three years, approximately four wells per year have been deepened (Calaveras County 2017).

GROUNDWATER QUALITY

Groundwater is used by local water purveyors and individuals to meet agricultural and residential demands, primarily, and has seen severe overdraft in recent decades. Based on available data for groundwater basins within the County, water from the Eastern San Joaquin subbasin is impaired because of severe overdraft. Contemporary with declining water levels is a saline front which has migrated from west to east. Samples taken from wells in the basin yielded results that indicated generally good water quality with some areas exhibiting poor water quality with elevated levels of salts and metals (such as boron) (CCWD 2007).

STORM WATER DRAINAGE

Storm water conveyance in the unincorporated county is comprised chiefly of overland sheet flow generated diffusely throughout the county and channeled into natural waterways or unlined ditches. Culverts are placed at road crossings and near other developments that encroach on drainage to capture storm water. There are few discrete storm water conveyance channels of any size in the county that provide capture to significant quantities of exclusively storm water. Drainage ditches and culverts direct storm water to swales, creeks, and streams, which eventually flow into one of the three primary river systems: the Mokelumne, Calaveras, and Stanislaus Rivers. These three rivers are the final receiving environment for all storm water generated in the county (Calaveras County 2007).

FLOOD CONDITIONS

Calaveras County consists of three physiographic flood areas within the eastern Sierra Nevada range: 1) the western portion of the county, located on the eastern edge of the Central San Joaquin Valley, 2) the central portion of the county, located in the gently rolling hills of the Sierra Nevada foothills, and 3) the eastern portion of the county located in the moderate to steep terrain of the Sierra Nevada mountains. Portions of the county could be exposed to various types of flooding events, including those related to dam failure, riverine flooding, and flash and urban floods from intense storm events.

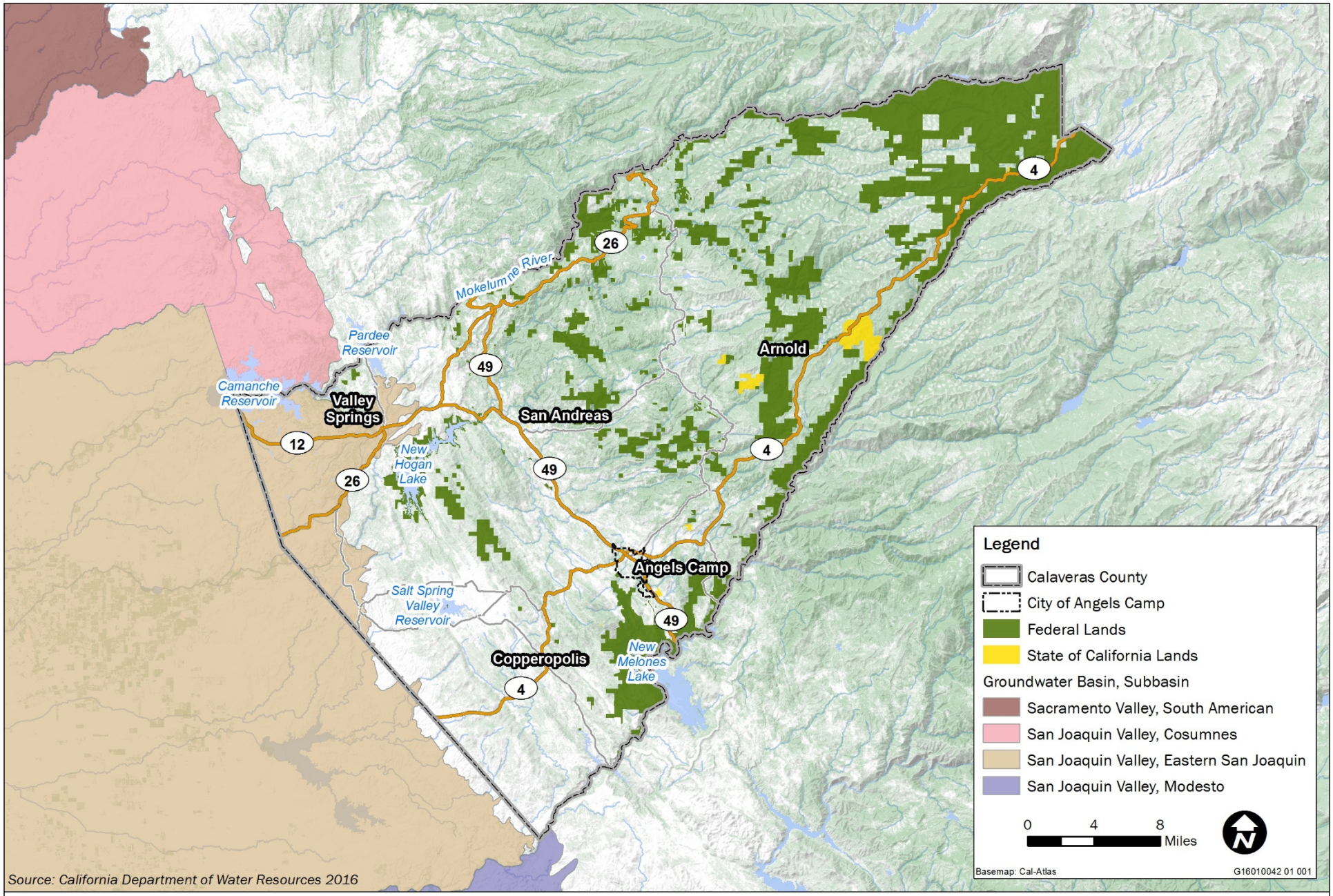


Exhibit 3.5-2

Groundwater Basins

100-Year Floodplain

The areas of Calaveras County that are subject to 100-year flood inundation are located proximate to the three major river systems and their tributary streams. There are also widespread areas identified within SFHAs proximate to the New Melones, Salt Springs, and New Hogan Reservoirs, as well as significant portions of the lake frontage of the Tulloch, Pardee, and Camanche Reservoirs within Calaveras County identified within SFHAs. The 100-year floodplain extends further from river banks in the lowland regions in the western portion of the county near the reservoir ingress and egress areas and where the county extends into the Central San Joaquin Valley, than it does in the eastern portion of the county, where terrain is steeper (FEMA 2017).

3.5.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

The evaluation of potential hydrologic and water quality impacts was based on a review of existing information from previously completed documents that address water and wastewater resources within the project vicinity, including the Calaveras County Local Hazard Mitigation Plan (LHMP), the Calaveras County General Plan, the Calaveras County Storm Water Management Plan, the CCWD Groundwater Management Plan, and the Integrated Regional Water Management Plan Update. The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this chapter. Additional analysis, including a review of water well applications within the County and available data regarding cannabis cultivation water usage, was conducted in order to characterize the potential demand for potable water supplies within the County resulting from implementation of the proposed ordinance. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local ordinances and regulations pertaining to hydrology and water quality.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements;
- 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;
- 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 erosion or siltation on- or off-site;
- 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 flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- 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;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows;

- 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 a dam; or
- result in substantial risk of inundation by seiche, tsunami, or mudflow.

ISSUES NOT DISCUSSED FURTHER

As noted in Chapter 1, "Introduction," the proposed ordinance would require a residence to be present on any property seeking a permit or on an adjacent property under common ownership. While the majority of existing properties with cannabis cultivation on-site have existing residential structures associated with them, it is possible that property owners may construct a residence onsite in order to allow for cannabis cultivation pursuant to the proposed ordinance. New construction would be required to obtain a building permit from the County, and be located either outside of the floodplain or elevate the home above the 100-year base flood elevation, which would reduce impacts associated with potential flooding hazards. As a result, implementation of the proposed ordinance would not result in potential flooding hazards on new housing, and impacts would not be significant. Thus, this issue is not discussed further.

Development of structures under the ordinance may include accessory structures for on-site cultivation and processing of cannabis. Within the County, areas subject to 100-year flood hazards are typically located immediately adjacent to existing waterways. Due to setback requirements established in the RWQCB Order R5-2015-0113, structures would not occur immediately adjacent to such waterways. As a result, the potential for project related structures to impede or redirect flood flows is considered minimal. Thus, this issue is not discussed further.

There are 42 dams located across Calaveras County, and each of these dams have been designed and are maintained to prevent dam failure (Calaveras County 2010). Failure or overtopping of one or more of these dams could result in severe flooding within certain areas of the County including potential loss of life. However, this occurrence, the response to which is addressed in the Calaveras County Local Hazard Mitigation Plan (LRHMP) and Calaveras County General Plan Safety Element, is not considered a likely or substantial risk given the low risk of large seismic events in the area, and therefore is considered unlikely to occur. Thus, this issue is not discussed further.

Because of the distance between the County and the nearest major open waterbody that could experience a seiche or tsunami, potential risks associated with inundation by seiche or tsunami are not anticipated. In addition, development of cultivation sites would generally not occur but may occur in areas with 20% slopes or greater, however, County General Plan Safety Element S-4E requires development on 20% or greater slopes to design improvements such that the risk of a mudslide would not occur. Therefore, these issues are not addressed further in this EIR.

IMPACT ANALYSIS

Impact 3.5-1: Construction water quality impacts.

Development of new cannabis cultivation or commercial cannabis sites would require ground-disturbing activities that could result in erosion and sedimentation, leading to degradation of water quality. Potential water quality impacts may occur during construction and would be considered **significant**.

The proposed ordinance is principally directed at ensuring compliance with current regulations at existing and future cannabis cultivation and processing sites, and providing a compliance framework of new regulations aimed at protecting the environmental well-being of county resources and the health and safety of county residents. Compliance is expected to encompass approximately 750 outdoor growing operations, a small percentage of which would be nursery facilities, 15 indoor grow operations, 250 personal/caregiver sites, and several warehousing and distribution facilities situated in urban areas.

While the proposed ordinance is intended to bring unregulated, illegal cannabis cultivation operations into compliance with existing regulations, implementation would also result in the conversion of some undeveloped land (including, for example, land zoned for general agriculture, rural residential, and general forest) to outdoor or indoor cannabis grow operations or cannabis processing facilities.

Outdoor, Indoor, Nursery, and Mixed Light Operations

Unregulated marijuana operations are disruptive to the natural functioning of surface water ecosystems. Cannabis is a water- and nutrient-intensive crop, the cultivation of which is associated with clearing of vegetation, surface water diversion, and agrochemical pollution (Carah et. al. 2015). Ground disturbance and clearing resulting from cannabis cultivation leads to a decrease in soil stability, and an increase in erosion. The result of this is increased inputs of sediment and soil into waterways, which degrades water quality.

Development of cannabis cultivation sites under the proposed ordinance would involve preparation of level surfaces such as roads and terraces, and in many cases the construction of water detention features for water storage. Site preparation and construction of these features would require activities such as grading, placement of fill, and excavation. These types of land disturbance activities frequently lead to accelerated erosion and sedimentation which can cause poor water quality from high turbidity, total suspended solids, and total dissolved solids in local waterways.

Channel morphology, substrate composition, gradient, and type of riparian vegetation, among other factors, influence the velocity and flow of surface water, and therefore the ability of a river or stream to move sediment. When the volume and pattern of surface water discharge are altered from their natural character, increases or decreases in the force of moving water will result, translating to increases or decreases in the rate of erosion. During the winter months, Calaveras County experiences heavy rain and at high elevations, snowfall. Snowmelt in the spring leads to large freshet stream flow volumes in the rivers and streams of the county. Topography in much of the unincorporated county is rugged and steep, with slopes in the upper Sierra Nevada mountains frequently exceeding angles of 35 degrees. This confluence of physiographic conditions enhances the risk of runoff erosion associated with growing site preparation and construction, especially during storm and high flow events. Poorly constructed roads are prone to accelerated wear and erosion that can lead to catastrophic failure. Road failure, especially at culverts or other types of watercourse crossings, can degrade water quality and destroy riparian habitats. Terraces or water detention basins that do not consider local topography and soil conditions might also be subject to failures that degrade local waterways. These effects on a drainage, if left unchecked, could be detrimental to aquatic life and the natural functioning of local ecosystems.

The Central Valley RWQCB requires compliance with the General Permit for disturbances over one acre. Construction site erosion control methods and other best management practices (BMPs) would be included in the development of a Storm Water Pollution Prevention Plan (SWPPP), per the requirements of the General Permit. Implementation of BMPs during construction would safeguard against violation of the General Permit and associated water quality impacts.

In addition to the requirements of the General Permit, the Central Valley RWQCB Order R5-2015-0113 provides enforceable WDRs for all cannabis cultivators in the county whose operations exceed 1,000 square feet. Under Order R5-2015-0113, Discharge Prohibitions and Discharge Specifications are detailed to protect streams and watercourses from pollution leading to water quality degradation. The Discharge Specifications in the order include following applicable BMPs contained in the General Order BMP Manual. The BMP Manual details specific requirements that cultivators must follow for grading, excavation, and road construction to prevent erosion and sedimentation.

In addition to the above threats to water quality from runoff and erosion, cannabis cultivation, like any other agricultural activity, involves the use of soil amendments, fertilizers, pesticides, and other agrochemicals to protect and enhance plant growth. These chemicals can enter waterways and cause excess nutrification or toxicity and have negative effects on aquatic species. To protect from the environmental and health effects

of illegal or improper chemical use, Order R5-2015-0113 contains a list of BMPs for the use of soil amendments, pesticides, fertilizers, and chemicals. In addition, cultivators may only use pesticides with active ingredients listed by the California Department of Pesticide Regulation (DPR) as not illegal to use on marijuana (DPR 2017). However, compliance with Order R5-2015-0113 is only required for cannabis-related activities that disturb in excess of 1,000 sf. As a result, any cannabis-related activities within the County would not be required to comply with the orders specific requirements related to erosion, sedimentation, and chemical use.

Commercial Operations

Development carried out under the proposed ordinance would also include construction of new commercial facilities for the storage, distribution, transport, and dispensing of cannabis. Construction activities would include clearing, grading, and excavation for new or expanded facilities. Excavations might relate to the construction of foundations, roads and driveways, and utility trenches. These developments would be restricted to appropriately-zoned urban areas. Industrial pollutants related to the construction of facilities could become exposed to storm water drainage and in turn enter or contaminate local surface water or groundwater.

In compliance with the MS4 permit requirements, Calaveras County has developed a Storm Water Management Plan that addresses these areas, and goes further – by implementing storm water quality control measures in unincorporated areas of the county outside of the MS4 Permit boundary. The countywide approach attempts to maximize the effectiveness of the storm water control program and control all sources of storm water pollution throughout the county that could lead to surface water quality degradation. In accordance with the requirements of the MS4 Permit, Calaveras County has also developed and implemented a Construction Site Storm Water Runoff Control Program, which is intended to prevent discharges of pollutants and impacts on beneficial use of receiving waters. The County ordinance requires control of storm water discharges, that limit erosion and sedimentation, provides soil stabilization measures, controls on dewatering activities, source control measures, pollution prevention measures, and prohibits certain discharges.

In addition to storm water programs that target potential point and non-point surface water contamination, contractors working on a site must maintain a current Spill Prevention and Countermeasure Control (SPCC) Plan with contingency measures to contain and remediate hydrocarbon spills that may occur during construction activities. Commercial operators are also required to comply with the General Permit when construction of their facility requires coverage by exceeding one acre of disturbance.

However, as noted above, any cannabis-related activities under 1,000 sf in disturbance area would not be required to comply with the Central Valley RWQCB Order R5-2015-0113 and its specific requirements pertinent to the control and minimization of erosion, sedimentation, and chemical transport. As a result, impacts would be **significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

Mitigation Measure 3.3-1 would require all cannabis-related activities in the County to comply with the conditions of Central Valley RWQCB Order R5-2015—0113. Coupled with the County's existing program of storm water pollution prevention and remediation, cannabis-related activities within the County would be required to implement BMPs, subject to regular inspections by local and state regulators, thus limiting the amount of pollution entering receiving waterways. For many unregulated, illegal cannabis cultivation facilities, implementation of these programs during upgrades would in fact provide both a short- and long-term benefit to receiving surface water and groundwater resources. Consequently, with implementation of Mitigation Measure 3.3-1, impacts to surface and groundwater quality from construction activities at cannabis operations within the county would be **less than significant**.

Impact 3.5-2: Operational water quality impacts.

Existing and new cannabis cultivation and commercial cannabis facilities have the potential to modify surface drainage and flows in such a manner that increased sedimentation and erosion could take place, leading to water quality degradation. The long-term operational use of unregulated pesticides, fertilizers, and other chemicals can also have a negative effect on water quality and ultimately affect the health and sustainability of organisms that rely on high quality waters. As a result, potential impacts would be **significant**.

The proposed ordinance is expected to encompass approximately 750 outdoor growing operations, a small percentage of which would be nursery facilities, 15 indoor grow operations, 250 personal/caregiver sites, and several warehousing and distribution facilities situated in urban areas. Facilities that are already operational would be included in these expected numbers, and would be regulated per existing and new regulations.

Outdoor, Indoor, Nursery, and Mixed Light Operations

Cannabis cultivation operations that commenced without coverage under the General Permit, without a grading permit, or without Calaveras County Grading, Drainage, and Erosion Control Manual compliance are at risk of affecting or continuing to affect water quality within the county. Site elements at existing cannabis cultivation sites, such as grading, erosion prevention features, runoff control, and chemical control may not currently comply with existing regulations and are therefore expected to have similar water quality effects as those described in Impact 3.5-1.

Current cannabis cultivation sites may also employ the use of illegal pesticides, fungicides, and fertilizers. DPR has provided an approved list of regulated chemicals that may be used to control pests and promote plant growth (DPR 2016). Compliance with Central Valley RWQCB Order R5-2015-0113 would include adherence to DPR guidance regarding proper usage of approved chemicals at permitted facilities. However, compliance with Order R5-2015-0113 is only required for cannabis-related activities that disturb in excess of 1,000 sf. As a result, any cannabis-related activities within the County would not be required to comply with the orders specific requirements related to chemical use.

Commercial Operations

Industrial or agrochemical contaminants could become exposed to storm water runoff or make direct contact with surface waters if they are not properly managed or contained, and could ultimately contaminate surface and groundwater resources. Comingling of surface water and chemical contaminants can occur where contaminants are stored proximal to watercourses. Among the primary sources of contaminated runoff are roads, landscaping, industrial coverage, accidental spills, and illegal dumping. Runoff from roads or parking lots often contains oil, grease, and heavy metals from automotive leaks and spills. Storage, use, and disposal of building maintenance chemicals such as paints or solvents would be done in compliance with local, state, and federal laws regulating the use of such chemicals, and in accordance with manufacturers' label instructions. The proposed ordinance would ensure compliance with regulations relating to long-term, operational storm water control and onsite containment, including those listed in Central Valley RWQCB Order R5-2015-0113 and the BMP Manual that are relevant to commercial cannabis sites.

Compliance with laws and regulations controlling onsite pollutants would ensure that the threat of pollution from improperly constructed sites would not result in water quality degradation. However, as noted above, any cannabis-related activities under 1,000 sf in disturbance area would not be required to comply with the Central Valley RWQCB Order R5-2015-0113 and its specific requirements pertinent to the control and minimization of erosion, sedimentation, and chemical transport. As a result, impacts would be **significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation

Mitigation Measure 3.3-1 would require all cannabis-related activities in the County to comply with the conditions of Central Valley RWQCB Order R5-2015—0113. Coupled with the County's existing program of storm water pollution prevention and remediation, cannabis-related activities within the County would be required to implement BMPs and be subject to regular inspections by local and state regulators, thus limiting the amount of pollution entering receiving waterways. Consequently, with implementation of Mitigation Measure 3.3-1, impacts to surface and groundwater quality during operation of cannabis-related activities within the county would be **less than significant**.

Impact 3.5-3: Groundwater supply impacts.

Cannabis is a water-intensive crop, the cultivation of which has the potential to consume vast amounts of water from local sources, and exceed groundwater supply and recharge. Transition to groundwater supply sources could exceed the capacity of local groundwater aquifers to provide adequate supply. This could result in the long-term drawdown of groundwater resources and would be a **significant** impact.

In fractured bedrock environments, it is possible for drawdown at a well in one location to affect groundwater elevations in other – even distant – wells. Conversely, it is possible for wells that are near to each other to have no respective effect. The effect of wells in fractured bedrock on groundwater elevations is dependent on the connectivity of fracture and joint sets in the bedrock. No mapping of subsurface features, including fracture locations, orientations, or depths has been completed on a county-wide scale; nor would this exercise be a practical one.

Officially-delineated groundwater basins have not been identified in most parts of the county. Wells drilled into the alluvial sediments of the county are more reliable in terms of yield than those in Sierra Nevadan basement rocks; however, as demands are placed on the aquifer, it is becoming less reliable over time. In the northwest portion of the county, bedrock is overlain by the alluvium of the San Joaquin Valley. This alluvium is also more reliable in terms of yield than the basement rocks below. Most groundwater resources for the county are sourced from the eastward-thinning alluvium atop granitic and metamorphic bedrock.

While water use estimates for cannabis plants vary considerably, and there is no well-established estimate in the scientific literature on water consumption for cannabis cultivation, it is estimated that operation of mixed light and outdoor cultivation operations could require up to approximately 390,000 gallons of water per half acre per year, including water used for the application of pesticides, fungicides, and fertilizers (Wright, pers. comm., 2016). Published literature estimates that cannabis plants consume as much as six gallons of water per plant per day during the growing season, which occurs from as early as April through to November, and peaks from June through October (Carah et. al. 2015). Annual water usage estimates for indoor cultivation are considerably higher, because of the ability for producers to harvest multiple times per year. Producers can harvest as many as between four and six times per year (BOTEC 2017). Local data indicates that a 92-day cultivation/harvest cycle (or approximately 3 harvests per year) for 5,000 sf of canopy would consume up to approximately 137,200 gallons per harvest, equaling approximately 411,600 gallons per year. As noted in Chapter 2, "Project Description," this water demand does not include potential reduction in water demand from capturing humidity and reuse of captured water for irrigation.

Cannabis operations would be required to obtain and disclose a legal water supply source under the proposed ordinance. The county is anticipating that most operations will permit a groundwater source, potentially leading to an increase in groundwater consumption, and a decrease in surface water consumption, as operations move away from illegal diversion and consumption of surface water resources. Cannabis operations are water-intensive and increased use of groundwater resources could contribute to continued, permanent drawdown of the Eastern San Joaquin groundwater sub-basin. Increased groundwater consumption could also have detrimental effects on groundwater resources in bedrock regions, where little is known about the connectivity of groundwater supplies in proximal areas. Consequently, the impacts to groundwater supplies in the county would be **potentially significant**.

Mitigation Measure 3.5-3: Groundwater monitoring requirements.

The county shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, and 19.95.240:

> Applicants with a permitted well water supply source shall prepare and implement a well-monitoring program. The program shall, at a minimum, include short-duration pumping tests to assess production capacity and water levels. Monitoring shall be carried out at the water supply source well and any nearby wells that could be affected by consumption of water at the source well, as determined by a qualified well driller, hydrologist, or hydrogeologist approved by the county. The first test shall be used to determine connectivity of the source supply well to other nearby wells. These tests shall be completed monthly during the months of August, September, and October and preceded by a minimum of eight (8) hours of non-operation to maintain a static depth to water measurement. Results of testing shall be provided to the County Planning Department and Department of Environmental Health Department for review and approval. If continuous decline of water levels is observed for a period of three (3) consecutive years in the source water supply well, an alternative water source shall be procured until well water levels have recovered to within ten (10) percent of pre-drawdown levels.

Significance after Mitigation

The proposed ordinance's operational impacts on groundwater supply and recharge would be reduced to a **less-than-significant** level through implementation of the supply well monitoring and mitigation detailed in Mitigation Measure 3.5-3.

Impact 3.5-4: Surface drainage impacts on onsite and offsite flooding.

The construction of new cannabis facilities, including commercial structures or lined water detention basins, could alter local drainage characteristics of individual sites and influence onsite or offsite flooding. Compliance with regulations relating to grading and drainage would limit these effects, however only cannabis-related activities in excess of 1,000 sf of disturbance would be required to comply with both local ordinances and the Central Valley RWQCB order. As a result, impacts would be **potentially significant**.

In areas where new construction for cannabis facilities would take place, the peak flow and volume of storm water runoff generated from such areas would be affected by development through conversion of vegetated or otherwise pervious surfaces to impervious surfaces (e.g. roads, roofs, driveways, walkways) and by the development of drainage systems that might more effectively connect these impervious surfaces to streams or other water bodies. The travel time of runoff originally travelling as overland sheet flow could be reduced when routed into constructed conveyance systems directly from impervious surfaces. Compaction from increased pedestrian traffic or cannabis processing activities such as drying, curing, grading or trimming grow areas could also reduce the local permeability of natural surfaces. Overall, an increase in impervious surfaces could increase the rate and volume of runoff and eliminate some natural storage and infiltration capacity along drainage paths. Consequently, sites could be subject to onsite ponding, or onsite or offsite flooding.

The majority of new and existing operations would be expected to comply with the Calaveras County grading and drainage ordinance and the General Order. The configuration of individually proposed new projects would be designed to address onsite ponding and discharges to offsite waterways. However, as noted above, any cannabis-related activities under 1,000 sf in disturbance area would not be required to comply with the Central Valley RWQCB Order R5-2015-0113 and its specific requirements pertinent to the control and minimization of erosion, sedimentation, and chemical transport. As a result, impacts would be **significant**.

Mitigation Measures

Implement Mitigation Measure 3.3-1.

Significance after Mitigation
Mitigation Measure 3.3-1 would require all cannabis-related activities in the County to comply with the conditions of Central Valley RWQCB Order R5-2015—0113. The impact of increased runoff volume associated with new or expanded facilities would then be addressed through compliance with both the Calaveras County grading and drainage ordinance and the General Order, and would result in a **less-than-significant** impact to onsite and offsite flooding.

Impact 3.5-5: Surface drainage impacts on riparian environments.

While the majority of water supplies used by uses permitted under the ordinance are anticipated to be groundwater, some surface water supplies from nearby streams and rivers could be used, which could have impacts on the level and availability of surface water supplies downstream. However, the proposed ordinance requires demonstration of available surface water rights and demonstration that projected needs are within allowable diversion limitations as determined by SWRCB Division of Water Rights. Through compliance with applicable regulations, impacts would be **less than significant**.

It is likely that some existing cannabis operations illegally divert and consume water from small tributary drainages either within or outside of operation property boundaries. Surface water diversion has proved to be a major concern in other parts of the state, notably in Humboldt and Mendocino Counties (Bauer et. al:8). During the summer low-flow period, which coincides with the outdoor growing season for cannabis plants, water consumption from small tributary and ephemeral streams as a result of unpermitted and illegal grows has been found to outstrip what is naturally provided by stream flow (Bauer et. al. 2015:17).

Under the proposed ordinance, continued operation of and operation of potential new facilities would involve planting and growing cannabis plants in a similar manner to a traditional agricultural facility. In order to be considered for permitting under the ordinance, Section 17.95.200 of the proposed ordinance requires applicants to demonstrate surface water diversion rights, as approved by the SWRCB, Division of Water Rights, as well as projected water usage and irrigation plans for any proposed commercial cannabis operations.

As a result, implementation of the proposed ordinance would likely result in a decrease in the use of surface water and an increase in the use of groundwater for permitted cannabis operations. Operations that illegally divert surface water would be required to establish a legal water supply source, which in most cases would be a groundwater supply well. Individual operations may obtain permits for surface water sources, but it is expected that most operations would use groundwater as their water source. The migration from surface water to groundwater supply would reduce the effects of overdrawing from local streams and waterways, and restore ecosystem health by allowing drainages to return to their natural flow characteristics.

Impacts on riparian environments resulting from modification of surface drainage features would be **less than significant** with implementation of the proposed ordinance.

Mitigation Measures

No mitigation is required.

3.6 LAND USE AND PLANNING

This section evaluates the project relative to existing plans and policies, with a focus on consistency with policies adopted for the purpose of reducing environmental impacts.

3.6.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to land use apply to the project.

STATE

State Planning and Zoning Laws

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including at a minimum land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area.

The State Zoning Law (California Government Code, Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan.

Local general plan policies and zoning ordinances, as they relate to the proposed project, are summarized below.

LOCAL

Calaveras County General Plan

In addition to resource specific policies identified in other sections (3.1 through 3.5 and 3.7 through 3.9) of this EIR, the *Calaveras County General Plan* (1996) contains the following land use and planning policies that may be applicable to the project:

<u>Natural Resource Lands</u>

- **Policy II-3A:** Restrict density in Natural Resource Lands to ensure future use and conservation and use of the resources.

<u>Community Development Lands</u>

- **Policy II-4A:** Maintain and reinforce Community Plan areas as the sites which may permit high density single family residential, multiple family residential, commercial, light industrial, and community activities, in addition to Special and Specific Plans Areas, Mixed Use/Master Project Areas, and Community Centers.

- **Policy II-5A:** Maintain and reinforce Special Plan areas as sites with unique resource or development issues, but which can include high density single family residential, multiple family residential, commercial, light industrial, and community activities, in addition to Community and Specific Plans Areas, Mixed Use/Master Project Areas, and Community Centers.

- **Policy II-6A:** Maintain and reinforce Specific Plan areas as the sites which may permit high density single family residential, multiple family residential, commercial, light industrial, and community activities, in addition to Community and Special Plans Areas, Mixed Use/Master Project Areas, and Community Centers.
- **Policy II-9A:** Maintain and reinforce Community Centers as the sites which may permit high density single family residential, multiple family residential, commercial, light industrial, and community activities, in addition to Community, Special and Specific Plans Areas, and Mixed Use/Master Project Areas.
- **Policy II-10A:** Encourage clustering in the siting of new multiple family residential, commercial, and industrial land uses in Community Centers.
- **Policy II-19A:** Require conditional use permits for all Rural Home Industries, and consider permit applications on a case-by-case basis, using established criteria.
- **Policy II-19B:** In the review of applications for Rural Home Industries, the existence of another Rural Home Industry in the general vicinity is not to be considered precedent on which to approve new applications.
- **Policy II-21A:** Review proposed businesses in the home for subservience to residential use and compatibility with neighboring uses.
- **Policy II-22A:** Recognize as legally existing the uses, parcels and zoning which do not conform to current standards but which were legally established under the regulations in effect at the time they were first commenced or created.

Specific Plans

The County has two specific plans: Oak Canyon Ranch (2004) and Saddle Creek (1994). Both have unique land use designations, goals, policies, and implementation programs intended to implement the General Plan and provide detailed guidance on the long-term development of these two areas.

Calaveras County Code

Policies set forth with the General Plan and the Specific Plans are implemented through enforcement of the County's Zoning Ordinance (Title 17 of the County Code). The Zoning Ordinance prescribes the allowable uses within specified zoning districts and imposes standards on those uses.

Airport Land Use Compatibility Plan

The Calaveras County Airport Land Use Compatibility Plan (ALUCP) was adopted June 2, 2010 by the Calaveras County Airport Land Use Commission (ALUC). State law requires that the County, due to its authority over land uses within the ALUC's planning area, modify the general plan and any affected specific plans to be consistent with the ALUCP. Policies LU 2.2 and 2.3 and Program LU-2A in the 2016 General Plan Land Use Element ensure that consistency. The 2016 General Plan Noise Element further recognizes the noise standards in the ALUCP.

Calaveras County's one public use airport, Maury Rasmussen Field, is located approximately four miles south of San Andreas and 5 miles north of the City of Angels.

3.6.2 Environmental Setting

Calaveras County is one of the more rural counties in California with a population of 45,668 in a land area of 1,020 square miles (663,478 acres). This is roughly 0.07 persons per acre or almost 15 acres for every person in the county. The county's population is expected to grow to 54,912 by 2035, based on California

Department of Finance estimates and projections in 2015, an increase of approximately 9,000 people (Calaveras County 2016:LU-2).

The county consists of a number of small, historic communities established primarily during the Gold Rush period of early California history, separated by large landholdings of agricultural land (primarily used for grazing) and timberland, interspersed with rural residential homes on larger acreage lots of five to twenty acres or more. There are several active and inactive mines in the county along with the recreational resources of several reservoirs, Stanislaus National Forest lands, and Calaveras Big Trees State Park. Approximately 21 percent of the land in the county is publicly owned (Calaveras County 2016:LU-2).

Calaveras County's communities lie primarily along the historic routes of Highways 49 and 12. These include Mokelumne Hill, San Andreas, Valley Springs, and the incorporated city of Angels Camp. State Route 4 is the only trans-Sierra route in the County and along it lie the communities of Copperopolis, Murphys, and Arnold. Other smaller communities include Wallace and Burson in the western end of the county; West Point, Wilseyville, and Mountain Ranch in the north-central part; and Avery and Dorrington on Highway 4 (Calaveras County 2016:LU-2).

There are approximately 519,000 acres of vacant, privately held land in the unincorporated part of Calaveras County (Calaveras County 2016:LU-3).

3.6.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

Evaluation of potential land use impacts is based on a review of documents pertaining to the project area, including the *Calaveras County General Plan* (1996), the *Calaveras County Planning Commission Recommended Draft General Plan* (2016), and the Calaveras County Code (Zoning Ordinance). In determining the level of significance, this analysis assumes that the project would comply with relevant state and local ordinances and regulations, as well as the General Plan policies presented above.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on aesthetic resources if it would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

ISSUES NOT DISCUSSED FURTHER

There are no approved habitat conservation plans or natural community conservation plans that apply to lands in Calaveras County. Therefore, no impacts would occur and this issue is not evaluated further in this EIR.

IMPACT ANALYSIS

Impact 3.6-1: Potential for physical division of an established community.

The cultivation, manufacture, testing, distribution, transportation, and storage of medical cannabis within Calaveras County could create land use conflicts, including potential physical division of established communities, if not regulated properly. The proposed ordinance contains permitting requirements that would reduce conditions that create public nuisances by enacting restrictions on the location, type, and size of marijuana cultivation sites and commercial activities involving medical marijuana in Calaveras County, as well as other permitting requirements such as adequate screening, security, and other protective measures. Because the project would include the above permitting requirements, land use conflicts, including potential division of established communities, would not occur. Therefore, this impact would be **less than significant**.

A primary purpose of the proposed ordinance is to make explicit the location, type, and size of marijuana cultivation sites; the location, type, and size of commercial activities involving medical marijuana; and the use of adequate screening, security, and other protective measures to more effectively control the adverse environmental impacts associated with medical marijuana cultivation and commercial activities in Calaveras County. This would be accomplished through amendments to the Calaveras County Code (specifically, the addition of Chapter 17.95, "Medical Cannabis Cultivation and Commerce").

The proposed ordinance includes requirements for applicants to obtain zoning clearance certificates, administrative use permits, or conditional use permits from the Planning Department for all commercial cannabis activities. The types of zoning clearance certificates or permits that may be issued by the Planning Department are listed in Tables 2-2 (outdoor cultivation), 2-3 (indoor cultivation), and 2-4 (manufacturing, testing, distribution, and transport) in Chapter 2, "Project Description." All existing and proposed commercial cannabis activities would be required to obtain the above certificates and/or permits to achieve full compliance with the proposed ordinance.

The proposed ordinance includes regulations specifying buffers from sensitive land uses (e.g., schools) to reduce potential land use conflicts and other public nuisances. For example, outdoor, mixed light, and nursery commercial cannabis cultivation activities must be located at least 1,000 feet from any parcel containing sensitive uses and be set-back 30 feet from any property line. The same would apply to indoor commercial cannabis cultivation sites. Personal cultivation sites and primary caregiver cultivation sites must be located at least 30 feet from the property line. Further, the proposed ordinance specifies the total allowable canopy area for each parcel, whether or not a primary residence must be located on the parcel, and whether any new buildings/structures (including sheds and fences) associated with the commercial cannabis activities would be allowable. Additional details regarding land use restrictions are included in Chapter 2, "Project Description."

Because the cultivation, manufacture, testing, distribution, transportation, and storage of medical cannabis within Calaveras County would be subject to County review and approval, and the proposed ordinance includes regulations specifying buffers from sensitive land uses (e.g., schools) to reduce potential land use conflicts and other public nuisances, land use conflicts, including potential physical division of established communities, would not occur. Further, the development of commercial cannabis cultivation sites is anticipated to be located within more rural areas and would not require the removal of residences or alteration of existing land uses such that a physical division of an established community might occur. Therefore, this impact would be **less than significant**. Of note, cannabis-related operations within the County under the proposed ordinance may result in disruptions within existing portions of the County, as a result of increased odors and traffic. These issues are evaluated in Sections 3.2 and 3.9, respectively. In addition, Chapter 6, "Alternatives" evaluates an alternative that would further restrict zoning/land use designations within which cannabis-related operations would be allowed.

Mitigation Measures

No mitigation is required.

Impact 3.6-2: Conflict with relevant plans, policies, and zoning adopted for the purpose of avoiding or mitigating an environmental effect.

The *Calaveras County General Plan* (1996) contains policies that protect natural resource lands, direct growth on community development lands, and promote land use compatibility. The proposed ordinance would amend the Calaveras County Code (specifically, Chapter 17.95, "Medical Cannabis Cultivation and Commerce," would be added), and would be consistent with General Plan policies and principles. Further, the proposed ordinance contains permitting requirements, providing a mechanism for the County to ensure compliance with relevant plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, this impact would be **less than significant**.

The proposed ordinance contains measures that would establish land use regulations for the cultivation, manufacture, testing, distribution, and storage of medical marijuana within the County. Land uses within the County are regulated by the *Calaveras County General Plan* (1996 and 2016) and the Calaveras County Code (Zoning Ordinance) to ensure uses are compatible with existing development.

The proposed ordinance includes requirements for applicants to obtain zoning clearance certificates, administrative use permits, or conditional use permits from the Planning Department for all commercial cannabis activities. The types of zoning clearance certificates or permits that may be issued by the Planning Department are listed in Tables 2-2 (outdoor cultivation), 2-3 (indoor cultivation), and 2-4 (manufacturing, testing, distribution, and transport) in Chapter 2, "Project Description." Because the applicants would be required to obtain necessary permits, the County would have a mechanism for control of land use changes.

Commercial cannabis activities could occur on a variety of land uses. Outdoor cultivation sites could be located on land zoned for forest, rural residential, and agricultural uses (see Table 2-2). Indoor cultivation sites could be located on land zoned for forest, rural residential, agricultural, and industrial uses (see Table 2-3). Personal and primary caregiver cultivation sites could be located on land zoned for forest, rural residential, agricultural uses (see Tables 2-2 and 2-3). Commercial cannabis manufacturing, testing, distribution, and transport would be located on land zoned for commercial and industrial uses (see Table 2-4).

The Zoning Ordinance is the regulatory device for implementing development in a manner that is consistent with the General Plan and is also more specific than the General Plan in terms of allowed uses. The proposed ordinance, which includes amendment of the County Code to include Chapter 17.95, "Medical Cannabis Cultivation and Commerce," in the Zoning Ordinance, is intended to implement and be consistent with existing General Plan policies and principles. The proposed ordinance does not include any changes to the General Plan policies or land use designations. Because the proposed ordinance would be consistent with existing General Plan policies and principles, the project would comply with relevant plans and policies adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

This page intentionally left blank.

3.7 NOISE

This section includes a description of acoustic fundamentals, existing ambient noise conditions in Calaveras County, and an analysis of potential short- and long-term noise impacts associated with activities that would likely result from implementation of the proposed ordinance.

3.7.1 Concepts Related to Evaluation of Noise

ACOUSTIC FUNDAMENTALS

Acoustics is the scientific study that evaluates perception and properties of sound waves. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise. The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to characterize environmental noise, and applicable to this analysis, are defined below (Caltrans 2013:2-48).

- Day-Night Noise Level (L_{dn}): The 24-hour L_{eq} with a 10-decibel (dB) penalty applied during the noise-sensitive hours from 10 p.m. to 7 a.m., which are typically reserved for sleeping.
- Equivalent Noise Level (L_{eq}): The average noise level during a specified time period; that is, the equivalent steady-state noise level in a stated period of time that would contain the same acoustic energy as the time-varying noise level during the same period (i.e., average noise level). The L_{eq}, or average noise level over a given period of time, is the foundation of composite noise descriptors such as L_{dn}, which effectively indicate community response to ambient noise levels.
- Decibel (dB): fundamental unit of sound used to measure the general degree loudness
- A-Weighted Decibel: A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. All sound levels discussed in this section are A-weighted decibels unless otherwise noted.

SOUND PROPERTIES

Decibel Scale

Sound levels are measured using the decibel scale, developed to relate to the range of human hearing. The decibel scale is logarithmic; it does not follow normal algebraic methods and cannot be directly summed. For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a noise level of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound by 3 dB) (Caltrans 2013:2-11). Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source. A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy.

A-Weighted Decibels

The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting scales were developed, identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason the A-weighted sound levels are used to predict community response to noise from the environment, including noise from transportation and stationary sources, and are expressed as A-weighted decibels. Again, all sound levels discussed in this section are A-weighted decibels unless otherwise noted.

To provide some context to noise levels described above and throughout this section, common sources of environmental noise and associated noise levels are presented in Table 3.7-1.

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Table 3.7-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet	100	
Gas lawnmower at 3 feet	90	
Diesel truck moving at 50 mph at 50 feet	80	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	60	
Quiet urban daytime	50	Large business office, Dishwasher in next room
Quiet urban nighttime	40	Theater, Large conference room (background)
Quiet suburban nighttime	30	Library, Bedroom at night, Concert hall (background)
Quiet rural nighttime	20	Broadcast/Recording Studio
	10	
Threshold of Human Hearing	0	Threshold of Human Hearing

Notes: dB = decibels; mph = miles per hour

Source: Caltrans 2013:2-20

Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased at large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier.

Effects of Noise on Humans

Excessive and chronic (long-term) exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavior and physiology. The non-auditory behavioral effects of noise on humans are primarily subjective effects such as annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning. The non-auditory physiological health effects of noise on humans have been the subject of considerable research into possible correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research implies that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

Negative effects of noise exposure include physical damage to the human auditory system, interference with daily activities, sleep disturbance, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may be permanent. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal (for example) may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, and level of the noise and the exposure time (Caltrans 2013:2-59 to 2-60).

Human Response to Changes in Noise Levels

As discussed above, the doubling of sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000–8,000 hertz) range. In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable (Caltrans 2013:2-18). Thus, a doubling of a reference sound energy is barely perceptible to the human ear (Caltrans 2013:8-9).

3.7.2 Regulatory Setting

FEDERAL

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated federal agencies where relevant.

STATE

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Though not adopted by law, the *State of California General Plan Guidelines 2003*, published by the California Governor's Office of Planning and Research (2003), provide guidance for the compatibility of different types of land uses within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance.

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (1996) contains the following policies regarding noise that may be applicable to the project:

- **Policy VI-1A:** Protect existing noise sensitive uses from new non-residential sources of excessive noise.
  - **Implementation Measure VI-1A-1:** Consider the potential noise impacts of non-residential land use proposals on adjacent residential and other noise-sensitive land uses to the following noise levels as measured at the property line of the noise-sensitive land use:
    - 60 L_{dn} at single family residential land uses,
    - 65 L_{dn} at multi-family residential land uses, and
    - 70 L_{dn} at schools and hospitals
  - **Implementation Measure VI-1A-2:** Site-specific noise analyses should be performed where major noise sources are proposed to be located near noise-sensitive land uses.
  - **Implementation Measure VI-1A-3:** Use setbacks, landscaping, earth berms and other effective measures to provide buffers and barriers between noise generators and surrounding areas.

Calaveras County Code

Noise standards are also included in the Calaveras County Code.

9.02.030, Sound Level Limitations

No person shall cause, allow, or permit the operation of any sound source on property or any public space or public right-of-way in such a manner as to create a sound level that exceeds the levels listed in Table 3.7-2. If all provisions of Subsection 9.02.060D are complied with, this section shall not apply to construction equipment used in connection with construction operations.

Table 3.7-2 Exterior Noise Standards

Land Use Type[1]	Sound Level (dB) [2]	
	Daytime (7:00 a.m. to 10:00 p.m.)[3]	Nighttime (10:00 p.m. to 7:00 a.m.)
Residential	60	50
Commercial	70	60
Industrial	75	65

Notes: dB = decibel

[1] Land uses, as defined in Title 17 of the Calaveras County Code.

[2] Each of the sound level standards specified in this table shall be reduced by 5dB for pure tone noises. However, in no case shall the exterior noise level standard be lower than the ambient sound level plus 5 dB.

[3] Subsection 9.02.050E provides an extension to midnight on Friday and Saturday for the events listed in the provision including a gathering for social or entertainment purposes at a private residence.

Source: Calaveras County Noise Ordinance 2016

9.02.060D - Exemptions

Sound from construction activity is exempt from the ordinance, provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between 7 a.m. and 6 p.m., unless otherwise subject to conditions in a valid discretionary land use permit that addresses construction noise associated with the project.

3.7.3 Environmental Setting

PREDOMINANT NOISE SOURCES

Vehicles traveling on State Routes 4, 12, 26, and 49 are the predominant noise source along those transportation corridors (J.C. Brennan & Associates 2013:14-16). Notable stationary sources of noise in the county include the aggregate production facilities operated by Foothill Materials, Calaveras Materials, both of which operate heavy machinery outdoors and load heavy trucks with processed aggregate; and Rock Creek Solid Waste Facility, Red Hill Transfer Station, and Avery Transfer Station, which are also the destination of many heavy truck trips (J.C. Brennan & Associates 2013:7-9). Noise levels along county roads that provide access to the more sparsely populated areas of the county are generally low because these roads do not carry high volumes of traffic.

EXISTING NOISE-SENSITIVE LAND USES

Noise-sensitive land uses generally include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because this is where people sleep. Parks, schools, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship, and other similar places where low interior noise levels are of

great importance, are also considered noise-sensitive. Within Calaveras County, all of the aforementioned types of noise-sensitive land uses are present.

3.7.4 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

The environmental analysis in this EIR is general in nature and does not evaluate noise impacts of specific cannabis grow sites or processing facilities. Instead, the analysis focuses on the worst-case noise-related impact that could occur from grow sites that would meet the requirements of the proposed ordinance. Thus, attention is given to the limitations and restrictions imposed by the proposed ordinance regarding the types, location, and intensity of noise-generating activity.

Impacts were determined based on methods and reference noise levels from the Federal Transit Administration's Guide on Transit Noise and Vibration Impact Assessment (FTA 2006:12-6) and the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model User's Guide (FHWA 2006). Reference levels are noise levels for specific equipment or activity types that are well documented and use of them is common practice in the field of acoustics.

Due to the countywide scope of this EIR and because the exact locations of new grow sites and processing facilities are not known at time, modeling of roadway-specific noise levels to assess potential long-term (operation-related) noise impacts from potential project-generated increases in traffic would not yield meaningful results and is not considered feasible. To determine impacts, likely scenarios that could potentially increase traffic generated by individual grow sites and processing facilities under the proposed ordinance were evaluated. The traffic noise analysis focusses on whether vehicle trips associated with the operational of grow sites in the county could potentially result in a noticeable increase in roadside noise levels (i.e., 3 dB or greater).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed ordinance would result in a potentially significant noise impact if it would:

- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- expose people residing or working in the project area to excessive noise levels;
- expose persons to or generate excessive ground vibration or noise levels;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; and/or
- for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

ISSUES NOT DISCUSSED FURTHER

Implementation of the proposed ordinance would not result in the development of new residential land uses or other types of noise-sensitive receptors. Cannabis grow sites would be located on lots that are already developed and processing facilities would only be located on parcels zoned for commercial or industrial uses. Also, the proposed ordinance would not result in the development of new residential land uses near

private air strips, and there are no major commercial or military airports in Calaveras County, or airports that are regularly used by large aircraft. The Calaveras County Airport near San Andreas is a general aviation airport that does not support any scheduled air services.

Adoption of the proposed ordinance would result in some qualified patients or their caregivers starting cultivation of cannabis on grow areas up to 100 square feet per patient for personal medical use. The proposed ordinance would allow a personal/caregiver grow site up to 200 square feet if it is for more than one patient. Personal/caregiver grow sites would be located on land zoned for forest, rural residential, agricultural uses and the cultivation site would be required to be located 30 feet from the property line. Establishment of these personal/caregiver grow sites is not expected to involve the use of heavy, noise-generating off-road equipment for construction or operation but instead involve the same types of hand tools and simple power tools, if any, that are used in home food gardens. Also, the establishment and operation personal/caregiver grow sites would only result in a nominal number of vehicle trips and, therefore, would not impact traffic noise levels along local roadways.

Construction of new cannabis grow sites and processing facilities would not involve the types of activities that can generate levels of ground vibration that is noticeable to nearby receptors, such as pile driving or blasting. In addition, adoption of the proposed ordinance would not result in the location of new vibration-sensitive receptors to existing sources of vibration. Therefore, construction associated with development of new cannabis grow sites and processing facilities would not result in the exposure of any sensitive receptors or structures to excessive vibration levels. This issue is also not discussed further in the EIR.

IMPACT ANALYSIS

Impact 3.7-1: Short-term, construction-related noise.

Construction of new outdoor and indoor grow sites would involve the use of heavy off-road equipment that would increase noise levels at nearby land uses. All construction-generated noise would be temporary and exempt from noise standards in the County's Noise Ordinance because it would only occur during the daytime hours. Therefore, this impact would be **less than significant**.

Adoption of the proposed ordinance is expected to result in the development of new grow sites for commercial production on parcels greater than or equal to 2 acres in size that are zoned as Residential Agriculture, Rural Residential, or Unclassified. The proposed ordinance would require that the cultivation site, or a contiguous parcel under common ownership, to contain a lawful permanent dwelling. The cultivation area of grow sites would not be permitted to exceed 22,000 square feet. In addition to the cultivation area, a small building or shed may be constructed to store equipment and fertilizer and/or for the processing and packaging of harvested cannabis. The initial development of these grow sites and ancillary facilities may require earthwork and use of heavy equipment, which has the potential to result in a temporary increase in noise levels in the vicinity of each new grow site. Generally, the intensity of construction activity would be similar to a residential renovation or building addition project. Establishment of outdoor and indoor commercial cannabis grow sites may involve the use of off-road construction equipment for grubbing and removal of existing vegetation, breaking ground, initial plowing, terracing, and/or grading to establish a gravel pad or foundation, and lifting supplies and building materials. It is anticipated that one piece of heavy off-road equipment would be used at once (e.g., loader, grader, scraper, dozer, backhoe, bobcat, or something with a comparable engine size and power rating). A single unit of these equipment generates a reference noise level of 85 dB at a distance of 50 feet (FTA 2006:12-6). At a distance of 30 feet, which is how far inside the property line the proposed ordinance would require the grow site to be located, the noise level produced by the construction equipment would be approximately 91 dB. The proposed ordinance would also require that each grow site be set back at least 1,000 feet from sensitive land uses, such as schools, libraries, and parks. At this distance the noise level generated by the construction equipment would attenuate to approximately 51 dB through distance alone. Additional noise

reduction would be provided by any intervening topography, dense stands of trees, or manmade structures located between the grow site and offsite receptors.

It is anticipated that construction activity would last approximately four weeks at each grow site, and the use of heavy off-road equipment at a single new grow site would occur for approximately two weeks. Pursuant to Section 9.02.060D of the County Code, all noise-generating construction activity would be limited to the daytime hours between 7 a.m. and 6 p.m., unless otherwise subject to conditions in a valid discretionary land use permit issued by the County. Construction noise generated during these exempt daytime hours are not subject to the exterior noise standards established in Section 9.02.030 of the County Code (as shown in Table 3.7-1).

Because construction would be temporary in nature, because the 1,000-foot setback requirement in the proposed ordinance would prevent sensitive land uses from being exposed to excessive noise levels, and because construction-generated noise would not exceed applicable sound level standards established in the County Code, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-2: Long-term non-transportation operational noise.

The growing, harvesting, and processing of cannabis would generate certain noise levels as a result of the use of specialized, mechanized equipment, as determined necessary for individual sites. However, the use of mechanized equipment would be temporary and periodic in nature and adjacent land uses would not be exposed to noise levels that exceed noise standards in the County's Noise Ordinance. In addition, the 1,000-foot setback requirement in the proposed ordinance would prevent sensitive uses, as defined by the proposed ordinance, from being exposed to excessive noise levels during each harvest. Therefore, this impact would be **less than significant**.

Noise levels associated with the operation of a cannabis grow site would be highest during the harvest phase. Grow sites would perform their harvest sometime between September and November. The harvest phase for each grow site would last up to three weeks, requiring up to 15 workers during that time. Outdoor harvesting activity would not occur during noise-sensitive nighttime hours.

Given that the planting area would not exceed 22,000 square feet at the largest outdoor grow sites, the use of large tractors is not anticipated but an off-road utility vehicle (e.g., Gator™) may be used to move equipment or move harvested cannabis from the planting area to the on-site processing buildings. Well pumps used for irrigation may also generate noise but these are not new sources because the wells are already used under existing conditions to supply water for residential use.

The loudest power equipment used during harvest would be motorized trimmers, if determined necessary at a particular grow, for trimming leaves from cannabis plants. It is noted that generally trimming activity is conducted by hand. A mechanized trimmer generates a reference noise level of 81 dB at a distance of 3 feet (Berger, Neitzel, and Kladden 2015:34). This noise level is similar to the noise level generated by landscape maintenance equipment typically used at residential land uses. At a distance of 30 feet, which is how far inside the property line the proposed ordinance would require the grow site to be located, the noise level produced by trimming activity would be approximately 55 dB. Thus, although the Urgency Ordinance included a greater setback requirement of 75 feet and Mitigation Measure 3.2-4c increases the setback requirement within the proposed ordinance to 75 feet, harvesting activities at a distance of 30 feet from nearby property lines would not exceed the daytime noise level standards of the County's Noise Ordinance (Table 3.7-1). The proposed ordinance would also require that each grow site be set back at least 1,000 feet from sensitive land uses, such as schools, libraries, and parks. At this distance the noise level generated by the trimmer would attenuate to inaudible levels through distance alone. Additional noise reduction would be provided by

any intervening topography, dense stands of trees, or manmade structures located between the grow site and offsite receptors.

Because harvesting activity would be temporary and periodic in nature, because adjacent land uses would not be exposed to noise levels that exceed noise standards in the County's Noise Ordinance, because the 1,000-foot setback requirement in the proposed ordinance would prevent sensitive land uses from being exposed to excessive noise levels, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-3: Long-term traffic noise levels.

The approval of new commercial grow sites in the county could result in increased traffic volumes on associated roadways and highways in the county, particularly during harvest season when the need for workers is highest. However, increased traffic volumes are unlikely to result in a noticeable increase in traffic noise (i.e., 3 dB or greater). Therefore, this impact would be **less than significant**.

Outside of the harvest season most of the cultivation work at each grow site will be performed by people living on the site. During harvest season (i.e., September through October), however, additional workers will be needed at each grow site as noted in Chapter 2, "Project Description". As explained in Section 3.7, "Transportation and Circulation", workers typically carpool with a minimum of two workers per vehicle and each vehicle makes two commute trips per day. This amounts to up to eight worker trips per peak hour period per grow site during the harvest period. Because most workers help with the harvest at one grow site and then move on to work at another grow site, it is assumed that no more than half the anticipated number of grow sites (i.e., 375 grow sites) would be generating worker trips during the same time. Nonetheless, these additional trips could result in an increase in traffic noise levels along affected roadways in the county.

Generally, a doubling of a noise source is required to result in an increase of 3 decibels, which is perceived as barely noticeable by humans (Caltrans 2013:2-11). Thus, regarding traffic noise specifically, a noticeable increase in traffic noise could occur with a doubling in the volume of traffic on a roadway. Grow sites would generally be dispersed throughout the county and no single grow site would result in a doubling of traffic volumes on local roadways. If it so happened that a cluster of grow sites were established in the same area and simultaneously engaged in harvest operations, it is likely that such a cluster would be located in one of the more densely developed areas where existing traffic volumes are relatively high compared to less-traveled roads that provide access to the most remote, least developed areas of the county. Roadways that would be used to access these clusters generally already carry relatively high traffic volumes and, thus, would unlikely experience a doubling of traffic volumes due to trips generated by new grow sites. Moreover, the operation of an individual grow site would not generate trips by heavy haul trucks that produce more roadside noise than passenger vehicles and light duty trucks that are typically used for worker commute trips. For these reasons, it would not be anticipated that roadways that provide access to grow sites would experience a doubling of traffic volumes and generate noticeable increases in traffic noise (i.e., 3 dB or greater) in the county or expose noise-sensitive receptors to excessive traffic noise levels that exceed County noise standards. As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

This page intentionally left blank.

3.8 POPULATION AND HOUSING

This section documents the existing population and housing conditions in Calaveras County and assesses changes to those conditions that could result from implementation of the proposed ordinance. This section also characterizes the population, employment, and housing changes that could trigger adverse physical effects in the city or the region.

3.8.1 Regulatory Background

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No federal plans, policies, regulations, or laws related to population, employment, and housing are applicable to the project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Regional Housing Needs Plan

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation and is based on a Regional Housing Needs Plan typically developed by councils of government. The California Department of Housing and Community Development Division of Housing Policy prepared the Calaveras County 2014-2019 Regional Housing Needs Plan. The latest housing allocation for the County covers the 2014-2019 period and consists of 1,079 units (120 extremely low, 121 very low, 175 low, 192 moderate, and 471 above moderate income) (HCD 2012). The County is not required to make development occur; however, the County must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed. The County adopted a housing element to its General Plan within this time period in May 2015. Per the County's housing element, the County has already met the RHNA for above moderate units but additional units for lower and moderate incomes would be necessary to fulfill the RHNA (Calaveras County 2015).

LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Calaveras County General Plan

The following goals and policies in the Land Use Element are relevant to the analysis of population and housing effects.

Single Family Residential Areas

- **Policy II-13A.** Determine appropriate densities and parcel sizes based on land capability, level of service of County access roads, availability of potable water, sewage disposal methods, slope characteristics, public facilities and services, and public safety considerations.

3.8.2 Existing Conditions

POPULATION

In 2016, the County's population was estimated to be 45,207, more than double of what it was in 1980. The majority of this growth rate occurred between 1980 and 2000. In the last 16 years, the rate of growth has decreased and has been virtually flat (with incremental decreases) since 2010, as shown in Table 3.8-1.

Table 3.8-1 Population Growth

Year	County Population*	Annual % Growth Over that Period
1970	13,585	–
1980	20,710	1 – 8%
1990	31,550	3 – 6%
2000	40,465	0 – 2%
2010	45,602	0%
2011	45,557	0%
2012	45,495	0%
2013	45,412	0%
2014	45,357	0%
2015	45,282	0%
2016	45,207	0%

Notes:
* - Includes Angels Camp
Source: California Department of Finance (DOF) n.d., 2007a, 2012a, 2016a.

Housing

Housing units are typically defined as a house, an apartment, a mobile home or trailer, a group of rooms, or a single room that is occupied and intended as separate living quarter. Table 3.8-2 summarizes the growth of the County's housing stock from 1990 to 2015. The number of housing units has increased from 19,153 in 1990 to 27,752 in 2016. However, the number of units decreased by 547 units between 2015 and 2016, due primarily to the Butte Fire. Prior to that, annual increases in housing stock increased by less than 150 units annually between 2010 and 2015. Overall the persons per household ratio has remained steady; vacancy rates are relatively high (~32%) compared to other locations within the State, although many units are likely associated with secondary/vacation residences which tend to have high reported vacancy rates because they are not primary residences.

Table 3.8-2 Housing Trends*

	Housing Units	Occupied	Vacancy Rate	Persons per Household
1990	19,153	12,649	34.0%	2.50
2000	22,868	16,383	28.4%	2.44
2010	27,898	18,897	32.3%	2.39
2011	28,018	18,942	32.4%	2.38
2012	28,128	18,978	32.5%	2.37
2013	28,204	18,972	32.7%	2.37
2014	28,246	18,988	32.8%	2.36
2015	28,299	19,012	32.8%	2.36
2016	27,752	18,906	31.9%	2.37

Notes:
* - Includes Angels Camp
Source: DOF 2007b, 2012b, 2016b.

EMPLOYMENT

The State of California, Employment Development Department (EDD) compiles current and historical employment data for California, counties and metropolitan areas. Table 3.8-3 proves data related to employment sectors in Calaveras County from 1990 through 2016 (EDD 2017). As shown, the majority of workers in the county are employed by government agencies, followed by trade, transportation, and utilities. From 1990 to 2016, employment opportunities increased by 4,000 jobs.

Table 3.8-3 Employment by Industry in Calaveras County 1990 - 2014

Industry Sector	1990	1995	2000	2005	2010	2015	2016
Farm	100	40	30	90	60	90	90
Mining, Logging, and Construction	1,030	590	1,010	1,300	570	700	760
Manufacturing	250	360	400	400	320	330	330
Service Providing	3,800	5,940	6,700	7,220	6,960	7,750	8,000
Trade, Transportation and Utilities	1,240	1,170	1,350	1,570	1,250	1,550	1,710
Information	130	100	140	100	110	110	110
Financial Activities	290	350	310	300	260	210	220
Professional & Business Services	300	290	560	610	350	490	580
Educational & Health Services	440	560	600	820	910	1,080	1,110
Leisure & Hospitality	770	900	1,040	980	1,200	1,360	1,320
Other Services	170	220	380	350	340	380	380
Government	470	2,350	2,330	2,490	2,550	2,580	2,590
Total, All Industries	5,180	6,920	8,140	9,010	7,910	8,860	9,180

Source: EDD 2017

3.8.3 Environmental Impacts and Mitigation Measures

ANALYSIS METHODOLOGY

This examination of population, employment, and housing conditions is based on information obtained from review of the plans for the project; review of available population, employment, and housing projections from the City of Sacramento, SACOG, the U.S. Census Bureau, and other sources; and review of applicable elements and policies from the Calaveras County General Plan.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant if it would do any of the following:

- induce substantial population growth in an area, either directly (by proposed new homes and businesses) or indirectly (for example, through the extension of roads, other infrastructure, or provision of additional employment);
- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts; or

- displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

ISSUES OR POTENTIAL IMPACTS NOT DISCUSSED FURTHER

Construction of uses allowed under the proposed ordinance would involve limited land disturbance per site and would not require substantial numbers of construction workers. Further, based on the 2016 unemployment rate within the County of 5.6 percent (EDD 2017), up to 1,200 workers, not including the 760 employed workers categorized by EDD as "Mining, Logging, and Construction" identified within the County, could be available to assist in the construction of cannabis cultivation and processing facilities. This existing number of residents who are in the construction labor force (labor force is defined as all of those people who are employed or are looking for employment), coupled with those of other areas within commute distance (e.g., Amador, San Joaquin, Stanislaus, and Tuolumne counties), would be expected to be sufficient to meet the demand for construction workers that could be generated by the project. Because construction workers serving the project can be expected to come from the local labor force in Calaveras County and surrounding areas, no substantial population growth or demand for new housing in the region as a result of these jobs would result. Therefore, the project would not generate the need for substantial additional housing in the city during construction, and this issue is not analyzed further in this DEIR.

The project would allow for the cultivation and processing of medical cannabis within the County's jurisdiction and within appropriately zoned/designated properties within the County. In and of itself, it would not result in the physical displacement of people or housing. Therefore, it would not necessitate construction of replacement housing elsewhere, and this issue is not analyzed further in this DEIR.

ENVIRONMENTAL IMPACTS

Impact 3.8-1: Increased employment opportunities and housing demand from operation.

Implementation of the proposed ordinance would allow for the operation of new cannabis-related uses within the County that would potentially increase temporary/periodic employment opportunities within the County. However, the project would not generate substantial new employment that would induce substantial population growth such that there would be a substantial demand for new housing that could not be met by existing supply in the County and surrounding areas or by planned housing development due to the temporary nature of the employment demand and similar employee bases in the region. This impact is **less than significant**.

It is anticipated that approximately 5,600 employees could be hired over time for seasonal/part-time employment with implementation of the proposed ordinance. This information is based on the reasonably foreseeable compliance responses identified in Chapter 2, "Project Description." This would represent a marked increase in employment opportunities beyond what is presented above in Table 3.8-3 and noted by EDD and could result in additional housing demand within the County. Although the County has approximately 8,800 vacant residential units (see Table 3.8-2), many of these units are second/vacation homes that would not be expected to be available for new employees/residents to the County. Further, rental housing within the County is currently considered to be in short supply, due in part to the 2015 Butte Fire (Calaveras Enterprise 2016).

However, as noted above, Calaveras County is partially an agricultural community and is located proximate to larger, more agricultural communities, including San Joaquin County, which has an estimated agricultural workforce of 16,600 and an approximately 8.1 percent 2016 unemployment rate (EDD 2017).[1] Other agrarian communities (Amador and Stanislaus Counties) have similar farm-related employee bases. As a

[1] Although cannabis cultivation and processing is not considered an agricultural operation under the Urgency Ordinance or the proposed ordinance, operational characteristics are similar to farm/agricultural operations in the area.

result and due to the seasonal/periodic nature of employment demand for agricultural and cannabis-related operations, many of the employment opportunities that may result from implementation of the proposed ordinance are anticipated to be absorbed by the existing seasonal/part-time employees located both in the County and neighboring jurisdictions. As a result, the potential employment opportunities that could result from implementation of the proposed ordinance are not anticipated to result in a substantial demand for new housing or induce substantial population growth within the County.

Further, with implementation of the Urgency Ordinance, the County has received numerous reports of employees residing on grow sites illegally without proper housing (many live in mobile homes, trailers, tents or other temporary housing types), domestic water and sewage systems, or disposal facilities. With implementation of the proposed ordinance, the County would have more enforcement funding and could better control seasonal housing (e.g., pursuant to 17.04.120). Seasonal housing is a separate discretionary action subject to CEQA. Enforcement of existing County Code provisions would be handled via inspections of permitted facilities under the proposed ordinance by either Code Compliance or the Sheriff's Department as outlined in the proposed ordinance.

Therefore, implementation of the proposed ordinance would result in additional employment opportunities in the County, which are anticipated to be largely met by the existing, large regional labor force without resulting in substantial in-migration from outside the region. As a result, substantial increases in demand for housing as a result of substantial population growth are not anticipated. It is possible that as new housing is proposed within the County, some residential units could be occupied by employees of cannabis-related uses but the degree to which such employees may relocate to newly constructed and available units within Calaveras County compared to remaining at their current location is considered speculative, given the temporary/periodic nature of employment associated with the project, Project-related population growth would not stimulate any new development, the construction of which could result in significant environmental impacts, and the population growth would be absorbed in growth projections of regional and local communities (Amador, Stanislaus, Tuolumne, and San Joaquin counties). Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

This page intentionally left blank.

3.9 TRANSPORTATION AND CIRCULATION

This section describes the applicable federal, state, and local regulations and policies related to transportation and circulation; discusses the existing roadway network and transportation facilities in the county; describes existing transportation and circulation conditions within the county; and analyzes the potential near- and long-term impacts from project activities on transportation and circulation.

3.9.1 Regulatory Setting

FEDERAL

There are no federal laws or regulations addressing transportation and circulation that are relevant to the project.

STATE

California Department of Transportation Concept Reports

The California Department of Transportation (Caltrans) is responsible for the planning, design, construction, operation, and maintenance of all state-owned roadways, including those in Calaveras County. State Routes (SR) 4, 12, 26, and 49 are located in Calaveras County, and are within Caltrans' jurisdiction.

Transportation Concept Reports (TCRs) have been completed by Caltrans for the state highway system serving Calaveras County. TCRs are Caltrans long range planning documents that are completed for each state highway route, and that identify existing route conditions and future needs. Each TCR includes a route summary, segment summaries, existing and forecasted travel data, route maps, and a list of planned, programmed, and needed projects for each highway over the next 20 years. TCR's identify how a highway will be developed and managed so that it delivers a targeted level of service (LOS) that is feasible to attain over a twenty-year planning horizon. TCRs for the State highways in Calaveras County are listed below.

- State Route 4 Transportation Concept Report (Caltrans 2014)
  - State Route 4 Corridor System Management Plan (Caltrans 2008)
- State Route 12 Transportation Concept Report (Caltrans 2012)
- State Route 26 Transportation Concept Report (Caltrans 2003)
- State Route 49 Transportation Concept Report (Caltrans 2013)

Concept LOS represents the minimum acceptable service conditions over the next 20 years. The TCRs for State Routes 4, 12, and 49 in Calaveras County indicate that Concept LOS C will be maintained for these routes. The SR 26 TCR sets the minimum acceptable service conditions at Concept LOS D.

California Department of Transportation Statewide Transportation Improvement Program

The California Statewide Transportation Improvement Program (STIP) is a multiyear, statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes, and metropolitan plans. The STIP is prepared by Caltrans in cooperation with the Metropolitan Planning Organizations and Regional Transportation Planning Agencies. The STIP contains all capital and non-capital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and Title 23 of the U.S. Code.

California Department of Transportation Interregional Transportation Improvement Program

Caltrans' five-year Interregional Transportation Improvement Program (ITIP) is prepared pursuant to Government Code 14526, Streets and Highways Code Section 164, and the California Transportation Commission's STIP Guidelines. Regional agencies work with Caltrans to identify projects that will address improvements to the interregional transportation system and improve the movement of people, vehicles, and goods between regions.

REGIONAL

2012 Calaveras County Regional Transportation Plan Final Report

The Calaveras Council of Governments (CCOG) is required by California law to adopt and submit an approved Regional Transportation Plan (RTP) to the California Transportation Commission every five years. The 2012 RTP guides transportation investments in Calaveras County over the next 25 years. The RTP includes policies and guidelines for use of federal, state, and local funding. Development of updates to the RTP is a cooperative effort between the CCOG, County of Calaveras, City of Angels Camp, Caltrans, and the public.

The 2012 RTP demonstrates close ties to the Regional Transportation Improvement Program (RTIP), ITIP, the Overall Work Program, Calaveras County General Plan and the City of Angels Camp General Plan, the Federal Transportation Improvement Program (FTIP), the California Transportation Plan and Interregional Blueprint, and the California Strategic Highway Safety Plan, and the California Wildlife Plan (CCOG 2012).

The 2012 RTP is the blueprint for a regional transportation system that further enhances mobility, promotes multi-modal solutions, and preserves the rural character of the region. The plan outlines projects for transit, rail and bus service, highways, county roads, local streets, bicycling, and walking to provide an integrated, multimodal transportation system.

2016 Regional Transportation Improvement Program

The RTIP is a 5-year program of major transportation projects. The RTIP is a program designed to implement the region's overall strategy for providing mobility and improving the transportation system as a whole. The RTIP incrementally implements the 2012 RTP, which is the long-range transportation plan for Calaveras County. Additionally, it covers multiple fiscal years and is amended frequently to reflect near term priorities and expenditures.

LOCAL

Calaveras County General Plan

The *Calaveras County General Plan* (Calaveras County 1996) contains the following policies regarding transportation and circulation that may be applicable to the project:

Goal III-2: Create and maintain a road system to serve the County's needs.

- **Policy III-2A:** Require that access to new development and to newly created parcels meet County standards under any applicable Community Plan, Specific Plan, Special Plan, or Mixed Use/Master Project area, and the County Road Ordinance, Chapter 12.02 of County Code.
  - **Implementation Measure III-2A-1:** Continue to enforce the standards of the County Road Ordinance, Chapter 12.02 of County Code.
- **Policy III-2C:** Require that private roads be constructed to standards adequate to meet the needs of the parcels they serve.

- **Implementation Measure III-2C-1**: Utilize road standards from the County Road Ordinance (Chapter 12.02 of County Code) for new residential, commercial, multiple family residential, recreation-oriented commercial, and industrial development.

Goal III-4: Provide and maintain a state highway system with capacity to serve projected state highway traffic at acceptable levels of service.

- **Policy III-4A:** Utilize Caltrans' concept levels of service as guidelines for establishing acceptable levels of service on State highways and to determine improvements to be required of new development.
  - **Implementation Measure III-4A-1:** As appropriate, require traffic analysis for new development that may result in the degradation of a state highway below the concept level of service or that may otherwise have a significant impact on the state highway serving the development. Traffic analysis includes identification of all state highway impacts of the project and potential mitigation measures to avoid degradation of levels of service.
- **Policy III-4B:** Consult with Caltrans for recommendations whether new development necessitates general improvements and/or project specific improvements to maintain the existing service level on any affected state highway.
  - **Implementation Measure III-4B-1:** At the time of permit approval, require developers to fund or construct project specific improvements necessary to maintain the existing level of service on State highways impacted by their development projects.
  - **Implementation Measure III-4B-2:** Address potential impacts of state highway safety deficiencies as part of project approval.
  - **Implementation Measure III-4B-3:** At the time of permit approval, require mitigation for new development impacting state highway segments currently below the concept level of service. Means of mitigation include, but are not limited to dedication of land for right-of-way, construction of general improvements, and proportionate contribution to funding general improvements.

Goal III-6: Maintain and improve existing levels of service of county roads.

- **Policy III-6A:** Coordinate road improvement requirements between the County, Local Transportation Commission, and development.
  - **Implementation Measure III-6A-1:** Enforce the design standards of the Road Ordinance, Chapter 12.02 of County Code.
  - **Implementation Measure III-6A-2:** Include measures to maintain or improve LOS on county roads in connection with subdivision approvals, and commercial, multi-family residential, and industrial design and building permits.
- **Policy III-7B:** Review proposed development projects to determine whether they warrant project-specific improvements to county roads to maintain level of service at the subject property.
  - **Implementation Measure III-7B-1:** Require project-specific improvements, including but not limited to, left turn pockets, escape lanes, acceleration/deceleration lanes, improved encroachments, and traffic control devices, the costs of which are to be borne by the project proponent and which may exceed beyond the project's frontage in order to facilitate the necessary improvement.
- **Policy III-7C:** Ensure monies are collected to upgrade county roads to the standards of their respective functional service classifications.

- **Implementation Measure III-7C-1:** Require developers seeking discretionary approval of a project or construction of new multifamily residential, commercial, or industrial development on parcels served by regional county roads at level of service A, B or C to contribute as needed to the road improvement mitigation fund for both the road region and the road serving the subject property.

- **Implementation Measure III-7C-2:** When a project is proposed to be located in a road region which includes county roads at level of service D, E or F on which traffic generated by the project will logically travel, allow the developer the following road improvement options:

  - Defer project consideration until the county road is upgraded to level of service A, B or C;

  - Construct at developer expense all onsite and offsite improvements necessary to upgrade all county roads impacted by the project to service level A, B or C;

  - Form an improvement district with other property owners in the area to share the cost of upgrading impacted county roads to service level A, B or C.

City of Angels Camp General Plan

The *Angels Camp General Plan* (Angels Camp 2009) contains the following policies regarding transportation and circulation that may be applicable to the project:

- **Policy 3.A.1:** Maintain acceptable levels of service on local, collector, and arterial roadways.

  - **Implementation Program 3-A-e:** Adopt LOS standards for the City roadway system. The following LOS shall be required for new development or expansions of existing developments for roadways serving such developments, intersections affected by such developments and roadways located within the boundaries of such developments.

    - Local Roads: LOS C on local roads within one-half mile of collectors and arterials. Minimum peak-hour LOS for intersections of local roads with other local roads and collectors shall be LOS C. Intersections of local roads with arterial roads shall operate at a minimum LOS D.

    - Collector Roads: LOS C on collector roadways; the minimum peak-hour LOS standard for intersections of collectors with arterials shall be LOS D.

  - **Implementation Program 3-A-e:** Support State LOS standards for State transportation facilities. Support, when reasonable, the state's goal of maintaining LOS C along Interregional Road System (IRRS) routes in rural areas along both mainline IRRS routes and at intersections with IRRS routes. SR 4 and SR 49 are included in the rural IRRS system. Caltrans may consider LOS D on SR 4 and SR 49 through Angels Camp. The minimum LOS standard for the State Highway System shall be no lower than LOS E.

Calaveras County Code

The *Calaveras County Code* contains the following policy regarding transportation and circulation that may be applicable to the project:

8.10.300 - Items requiring review

The following items shall be submitted to the board and to the Tuolumne/Calaveras Ranger Unit of the California Department of Forestry and Fire Protection, as well as the local fire jurisdiction, for review:

A. Land use applications for: accessory dwellings, administrative use permits, community plan amendments, conditional use permits, development review committee, environmental impact reports, general plan amendments, mining use permits and reclamation plans, planned development units, tentative parcel maps, tentative subdivision tract maps, variances, and zoning amendments.

3.9.2 Environmental Setting

ROADWAY NETWORK

Existing Roadway Network

The circulation network within Calaveras County (County) is made up of a network of State highways, County roadways, and city maintained roadways as shown in Exhibit 3.9-1. The roadway system in the County totals approximately 1,059 miles and stop signs are typically used to control side street approaches to arterials and collectors. The four State highways of SR's 4, 12, 26, and 49 are located within the County and are operated and maintained by Caltrans. The State highways serve as arterials within the county, carrying the highest volumes of traffic.

State Routes/Minor Arterials

SR 4 is an east-west route beginning in Contra Costa County and terminating at SR 89 in Alpine County. The route is functionally classified as a Rural Minor Arterial in Calaveras County. The portion of SR 4 that runs through Calaveras County has been addressed through a Corridor System Management Plan as part of the bond funding for the Angels Camp Bypass and is on the IRRS.

SR 12 serves four communities in Calaveras County including Wallace, Burson, Valley Springs, and San Andreas. The route is integral in the movement of goods and services throughout Calaveras County. SR 12 is a Class III bicycle route, however, narrow or no shoulders and non-standard lane widths inhibit bicycle use.

SR 26 is functionally classified as a Minor Arterial for the entire route within Calaveras County. The route is not part of the IRRS, National Highway System, or Scenic Highway system. The route provides access to New Hogan Reservoir, Rancho Calaveras and La Contenta Residential developments near Valley Springs, as well as the communities of Mokelumne Hill and West Point.

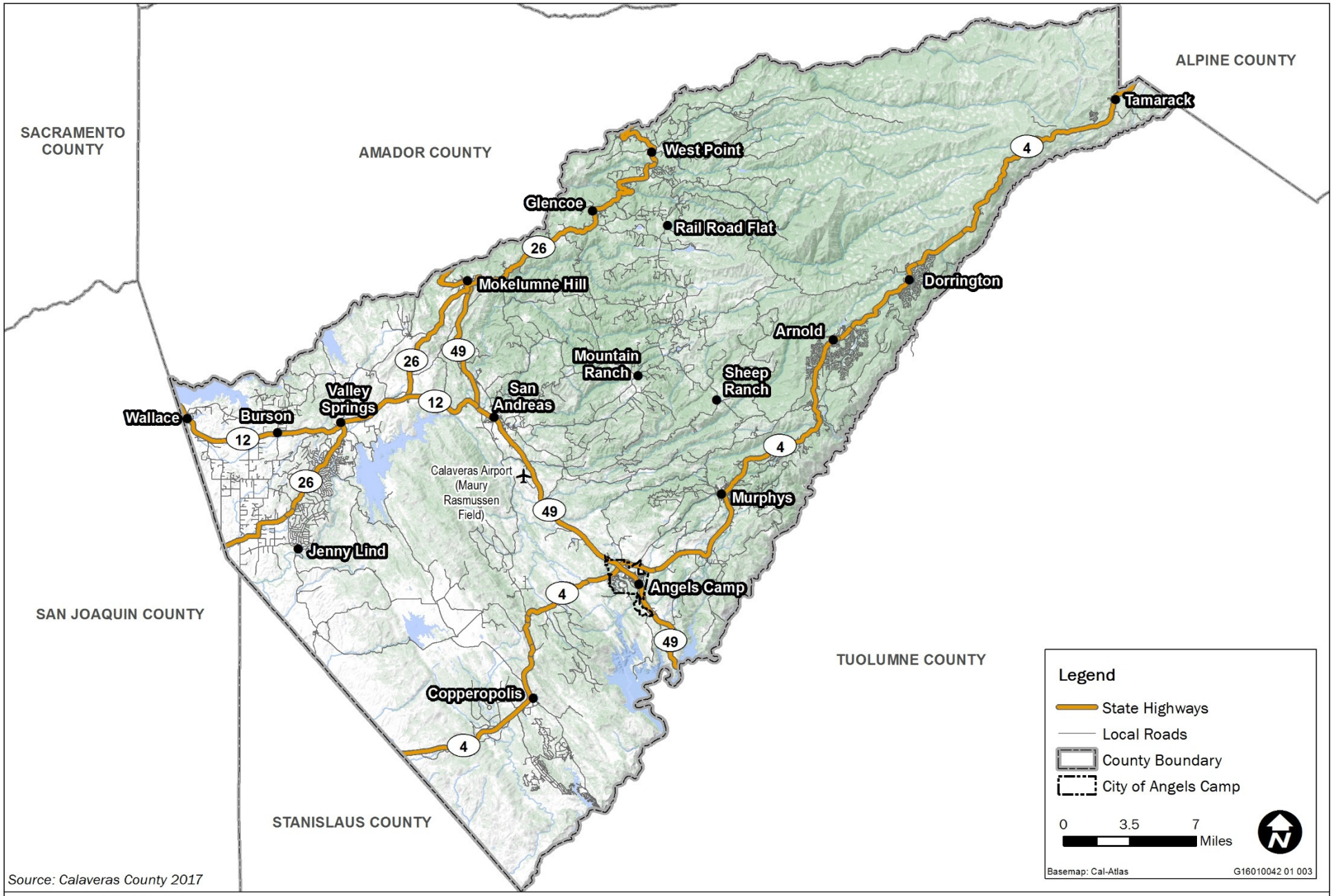
SR 49 is an interregional connector in Calaveras County. Major issues identified along the corridor include safety, mobility, and capacity. The mobility challenges identified in the TCR are reflective of issues identified in the RTP. The lowest traffic volumes along this State highway occur between SR 12 and SR 26 while the highest volumes occur between Mountain Ranch Road and SR 12.

County and Local Roads

The County maintains an extensive roadway system within the unincorporated area, of which the principal connection is via a rural road system of State highways and county roads, almost exclusively made up of two-lane roads. The existing County circulation system is separated into the hierarchical classification system of minor arterials, major collectors, minor collectors, and local roadways. The functional classification of the County roadway system is listed below.

- **Minor Arterials:** Minor Arterials are roads which have the primary function of serving through traffic movements and connecting communities and traffic destination centers, such as recreational facilities and resources.

- **Major Collectors:** Major collectors are roads which move traffic from one community to the next. Major collectors serve through traffic movements to and from minor arterials, into and out of communities.



Source: Calaveras County 2017

Exhibit 3.9-1

Existing Circulation System

ASCENT ENVIRONMENTAL

- **Minor Collectors:** Minor collectors move traffic from traffic generators (such as residential areas) to major collectors or arterials. Minor collectors are generally located within residential areas where they connect a number of local roads to a major collector.

- **Local Roads:** The primary function of local roads is to provide access to individual properties, delivering this traffic in a relatively short distance compared to collectors or arterial roadways.

The incorporated City of Angels Camp maintains the street network within its respective jurisdictional area. The roadway network within Angels Camp is generally separated into the functional roadway classifications of arterials, collectors, and local roads. In general, arterial streets carry the highest volume of traffic, collector streets generally connect residential neighborhoods to arterials, and local streets carry low volumes of traffic and comprise the bulk of a city's roadway network.

Existing Roadway Traffic Volumes

The 2012 Calaveras County Regional Transportation Plan Final Report (CCOG 2012) analyzed roadway segments of State highways and County and City roadways for existing conditions. All existing deficiencies (LOS D or greater) occur along State highway facilities. Table 3.9-1 provides a summary of the PM peak-hour, peak-direction LOS and volumes on State highway facilities for existing conditions.

Table 3.9-1 Existing Conditions for State Highways within Calaveras County

Highway	Segment	Roadway Classification	Peak Direction	
			Peak Hour Volume	LOS
SR 4	Stanislaus Co. Line to O'Brynes Ferry Rd	Major Two-Lane Highway	349	C
SR 4	Pool Station Road to Angel Oaks Drive	Three-Lane Arterial	516	C
SR 4	Angel Oakes Drive to Foundry Lane	Three-Lane Arterial	303	C
SR 4	SR 49 to Allen Ln	Major Two-Lane Highway	385	**D**
SR 4	Allen Ln to Broadview Ln (Murphys)	Major Two-Lane Highway	822	**E**
SR 4	Broadview Ln to Lakemont Dr (Murphys to Arnold)	Major Two-Lane Highway	505	**D**
SR 4	Lakemont Dr to Henry Dr (Arnold)	Major Two-Lane Highway	520	**D**
SR 4	Henry Dr to Sierra Pkwy (Arnold to Dorrington)	Major Two-Lane Highway	421	**D**
SR 4	Skyline Dr to Alpine Co. Line (Dorrington to County Line)	Major Two-Lane Highway	181	C
SR 12	San Joaquin Co. Line to Burson Rd	Major Two-Lane Highway	326	C
SR 12	Burson Rd to SR 26	Major Two-Lane Highway	524	**D**
SR 12	SR 26 to SR 49	Major Two-Lane Highway	584	**D**
SR 26	San Joaquin Co. Line to Silver Rapids Rd	Major Two-Lane Highway	409	D
SR 26	Silver Rapids Rd to SR 12	Major Two-Lane Highway	657	D
SR 26	SR 12 to SR 49	Major Two-Lane Highway	91	C
SR 26	SR 49 to Ridge Rd	Major Two-Lane Highway	74	C
SR 26	Ridge Rd to Winton Rd	Major Two-Lane Highway	151	C
SR 26	Winton Rd to Amador Co. Line	Major Two-Lane Highway	125	C
SR 49	Amador Co. Line to SR 12	Major Two-Lane Highway	243	C
SR 49	SR 12 to Mountain Ranch Rd (San Andreas)	Three-Lane Arterial	522	C
SR 49	Mountain Ranch Rd to 4th Crossing Rd	Major Two-Lane Highway	354	**D**
SR 49	4th Crossing Rd to Brunner Hill Rd	Major Two-Lane Highway	382	**D**
SR 49	Copello Drive to Dogtown Rd	Three-Lane Arterial	358	C
SR 49	Dogtown Rd to SR 4 (W)	Three-Lane Arterial	570	C

Table 3.9-1 Existing Conditions for State Highways within Calaveras County

Highway	Segment	Roadway Classification	Peak Direction	
			Peak Hour Volume	LOS
SR 49	SR 4 (W) to Murphys Grade Rd	Three-Lane Arterial	664	**D**
SR 49	Murphys Grade Rd to Stanislaus Avenue	Three-Lane Arterial	487	C
SR 49	Stanislaus Avenue to Mark Twain Rd	Three-Lane Arterial	787	**D**
SR 49	Mark Twain Rd to Bret Harte Rd	Three-Lane Arterial	666	**D**

Source: CCOG 2012.

Notes: Roadway segment LOS operating at unacceptable levels shown in bold font. Per Caltrans and as stated above, SRs 4, 12, and 49 should operate at LOS C or better and SR 26 should operate at LOS D or better.

Cumulative Conditions

The 2012 Calaveras County Regional Transportation Plan Final Report (CCOG 2012) analyzed roadway segments of State highways and County and City roadways for the cumulative scenario (2035). Table 3.9-2 provides a summary of the PM peak-hour, peak-direction LOS and volumes on State highway facilities operating at unacceptable LOS in the cumulative condition.

Table 3.9-2 Cumulative Conditions for State Highways within Calaveras County

Highway	Segment	Roadway Classification	Peak Direction	
			Peak Hour Volume	LOS
SR 4	Stanislaus Co. Line to O'Brynes Ferry Rd	Major Two-Lane Highway	720	**D**
SR 4	Pool Station Road to Angel Oaks Drive	Three-Lane Arterial	660	**D**
SR 4	SR 49 to Allen Ln	Major Two-Lane Highway	670	**D**
SR 4	Allen Ln to Broadview Ln (Murphys)	Major Two-Lane Highway	1280	**E**
SR 4	Broadview Ln to Lakemont Dr (Murphys to Arnold)	Major Two-Lane Highway	840	**E**
SR 4	Lakemont Dr to Henry Dr (Arnold)	Major Two-Lane Highway	670	**D**
SR 4	Henry Dr to Sierra Pkwy (Arnold to Dorrington)	Major Two-Lane Highway	510	**D**
SR 12	San Joaquin Co. Line to Burson Rd	Major Two-Lane Highway	580	**D**
SR 12	Burson Rd to SR 26	Major Two-Lane Highway	690	**D**
SR 12	SR 26 to SR 49	Major Two-Lane Highway	800	**E**
SR 26	San Joaquin Co. Line to Silver Rapids Rd	Major Two-Lane Highway	409	**D**
SR 26	Silver Rapids Rd to SR 12	Major Two-Lane Highway	860	**E**
SR 49	Amador Co. Line to SR 12	Major Two-Lane Highway	490	**D**
SR 49	Mountain Ranch Rd to 4th Crossing Rd	Major Two-Lane Highway	720	**D**
SR 49	4th Crossing Rd to Brunner Hill Rd	Major Two-Lane Highway	720	**D**
SR 49	Dogtown Rd to SR 4 (W)	Three-Lane Arterial	750	**C**
SR 49	SR 4 (W) to Murphys Grade Rd	Three-Lane Arterial	680	**D**
SR 49	Stanislaus Avenue to Mark Twain Rd	Three-Lane Arterial	870	**D**
SR 49	Mark Twain Rd to Bret Harte Rd	Three-Lane Arterial	690	**D**
SR 49	Bret Harte Rd to Vallecito Rd	Three-Lane Arterial	690	**D**
SR 49	Vallecito Rd. to Tuolumne Co. Line	Major Two-Lane Highway	610	**D**

Source: CCOG 2012.

Notes: Roadway segment LOS operating at unacceptable levels shown in bold font. Per Caltrans and as stated above, SRs 4, 12, and 49 should operate at LOS C or better and SR 26 should operate at LOS D or better.

Planned Transportation Improvements

The Circulation Element in the General Plans for each of the jurisdictions in the project area (Calaveras County and the City of Angels Camp) provide lists of roadway improvements anticipated to be needed in each jurisdiction. However, the current Calaveras County general plan was last updated in 1996 and the County has initiated an update to the general plan. The adopted RTP, a cooperative effort between the CCOG, County of Calaveras, City of Angels Camp, Caltrans, and residents of Calaveras, will guide transportation investments in Calaveras County over the next 25 years (2010 – 2035). Additionally, the RTP is consistent with the RTIP and the ITIP, and includes involvement and outreach to the general public as well as the Native Tribal Governments within the County (CCOG 2012). This documents identifies a range of improvements to address existing and future transportation deficiencies including: intersection improvements; improvements that better balance roadway use between motorized vehicles, transit, bicycles, and pedestrians; and safety improvements. Some local roadway improvement plans for the City of Angels Camp also include widening and realignment, road rehabilitation and reconstruction, intersection improvements and bridge reconstruction.

EXISTING BIKE AND PEDESTRIAN FACILITIES

Physical characteristics of Calaveras County including the steep topography and rural nature of the County creates a challenging environment for providing bike and pedestrian facilities. Excluding backcountry trails on public lands, the network of facilities for non-motorized travel in Calaveras County is limited. Designated bicycle facilities consist of approximately 2.5 miles of separated (Class I) bikeway, 0.4 miles of striped Class II bicycle lanes, and just less than 3 miles of signed (Class III) bicycle routes. Sidewalks are largely limited to the core areas within the City of Angels Camp and the other unincorporated communities within Calaveras County. Bicycle and pedestrian facilities within Calaveras County are discontinuous and the long distances between destinations and a lack of shoulders and formal pedestrian facilities have limited opportunities for non-motorized travel.

Bicycle and Pedestrian facilities have been the focus of planning and development in the County in past years. The Calaveras County Pedestrian Master Plan and the Calaveras County Bicycle Master Plan were completed in 2007 and include goals, policies, and implementation measures that specifically address bicycle and pedestrian travel within the overall County transportation system. However, the County has not formally adopted either of these plans. Other bicycle and pedestrian related plans prepared for areas within Calaveras County include the following:

- Murphys Circulation, Pedestrian, Bicycling, and Parking Study;
- Arnold Rural Livable Community-Based Mobility Plan; and
- San Andreas Rural Livable Mobility Plan.

EXISTING TRANSIT SERVICE

Calaveras Transit is a County operated agency which provides service transit service within Calaveras County and to a number of surrounding cities and counties. Local service is provided between all major Calaveras County communities and regional service is provided to Columbia College in Tuolumne County, Jackson in Amador County, and Delta College in Stockton. Service to Sacramento and Lake Tahoe is available connecting service offered by the Amador Regional Transit System at the transfer point in the community of Mokelumne Hill.

Plans related to transit in Calaveras County, include:

- Calaveras County Short Range Transit Plan Update, and
- Calaveras County 2014 Coordinated Public Transit-Human Services Transportation Plan.

Additionally, extensive changes in the bus routes geared towards providing a more effective and efficient transit system are in the process of being developed and presented to the public. The proposed changes include more

frequent service between Valley Springs and Angels Camp, improved connections between feeder routes and the main routes, service to new areas upon request, and some segments and days being eliminated.

The Foothill Rideshare program provides vanpool and carpool opportunities throughout the Counties of Calaveras, Amador, and Tuolumne, and between nearby employment centers. Calaveras County currently has one 40 space park-and-ride facility located at the Black Bart Playhouse in Murphys near SR 4, and Caltrans has identified a new facility on SR 49 near SR 26 in Mokelumne Hill as a good location for future study.

3.9.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

The evaluation of potential impacts related to transportation is based on a review of existing transportation facilities and conditions, anticipated future facilities, and transportation-related plans and policies pertaining to project described above. Due to the countywide scope of the project and because the exact locations of new cultivation sites and processing facilities are not known at this time, the analysis does not evaluate specific intersections or local roadways, but addresses general expectations of traffic generation along the State highways and associated environmental effects of the project. Further, quantitative estimates of impacts to State highways are considered to serve as a proxy for impacts to local roadways for which volume data is not available.

To determine impacts, likely scenarios that could potentially generate traffic by individual grow sites and processing facilities under the proposed ordinance were evaluated. Traffic operations for the State highways, which serve as the arterials within the county carrying a high percentage of the total traffic and connecting communities and traffic destination centers, were evaluated by considering peak-hour LOS. State highway segments corresponding to those analyzed in the 2012 RTP, and which the proposed project is anticipated to add traffic to, were analyzed.

LOS Thresholds

LOS is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Letters designate each LOS from A to F, with LOS A representing the best operating conditions and LOS F the worst. Tables 3.9-3 and 3.9-4 summarize the LOS descriptions for the roadway types analyzed for this project.

Table 3.9-3 Two-Lane Conventional Highways

LOS	Demand/Capacity Ratio	Traffic Description
A	<0.34	Free flow, light
B	<0.45	Free flow to stable flow, moderate
C	0.46-0.65	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.66-0.85	Approaches unstable flow, heavy volumes, very limited freedom to maneuver
E	0.86-1.00	Extremely unstable flow, maneuverability and psychological comfort extremely poor
F	>100	Forced delay measured in average flow travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: Highway Capacity Manual 2010

Table 3.9-4 Two and Four Lane Freeways/Expressways Level of Service Description

LOS	Demand/Capacity Ratio	Traffic Description
A	<0.34	Free flow
B	0.35-0.52	Free to stable flow, light to moderate volumes
C	0.53-0.69	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.70-0.92	Approaches unstable flow, heavy volumes, very limited freedom to maneuver
E	0.93-1.00	Extremely unstable flow, maneuverability and psychological comfort extremely poor
F0	101-1.25	Forced flow, heavy congestion, long queues from behind breakdown points, stop and go
F1	1.26-1.35	Very heavy congestion, very long queues
F2	1.36-1.45	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods
F3	>1.46	Gridlock

Source: Highway Capacity Manual 2010

Analysis of the Calaveras County roadway segments for this project was conducted using volume thresholds consistent with those developed for the 2012 Calaveras County Regional Transportation Plan Final Report. Table 3.9-5 below presents these volume thresholds.

Table 3.9-5 Traffic Volume Thresholds

Roadway Type	Number of Lanes	LOS C	LOS D	LOS E
Minor Two-Lane Highway	2	280	655	1330
Major Two-Lane Highway	2	350	765	1440
Three-Lane Arterial	3	640	1000	1330

Source: Highway Capacity Manual 2010

The traffic volume thresholds were developed to account for the unique nature of the circulation network serving Calaveras County which is characterized by a dispersed population spread across numerous rural parcels and small rural communities, and connected by a network of winding two-lane State highways and county roads over steep grades.

Assumptions and Analysis Techniques

There are an undetermined number of unpermitted cannabis grow operations within Calaveras County generating vehicular trips to the County roadway network. However, the number and scale of these unpermitted operations are unknown at this time and therefore cannot be quantified. Thus, for the purposes of this analysis it is assumed that the project will generate new vehicular trips at each assumed permitted operation.

It is assumed that the activities associated with centralized commercial cannabis manufacturing, testing, and distribution facilities would be performed at individual indoor/outdoor grows if not consolidated. The operations of these facilities are not expected to result in impacts more severe than those impacts associated with the establishment of indoor and outdoor grows, which they would be replacing. Additionally, personal and primary caregiver cultivation is assumed to all be performed on-site by the resident of the property which would not generate additional daily trips. Therefore, for the purpose of this analysis new trips are assumed to only be generated by the outdoor, mixed-light, and commercial nursery and indoor commercial grow operations.

Although employees may carpool to grow sites, it is estimated that each full-time employee would generate 1 trip per day during the harvest period. The cultivation/harvest period would occur over the 3-month (92-day) period of September through November, with individual site harvests spanning approximately 4-weeks.

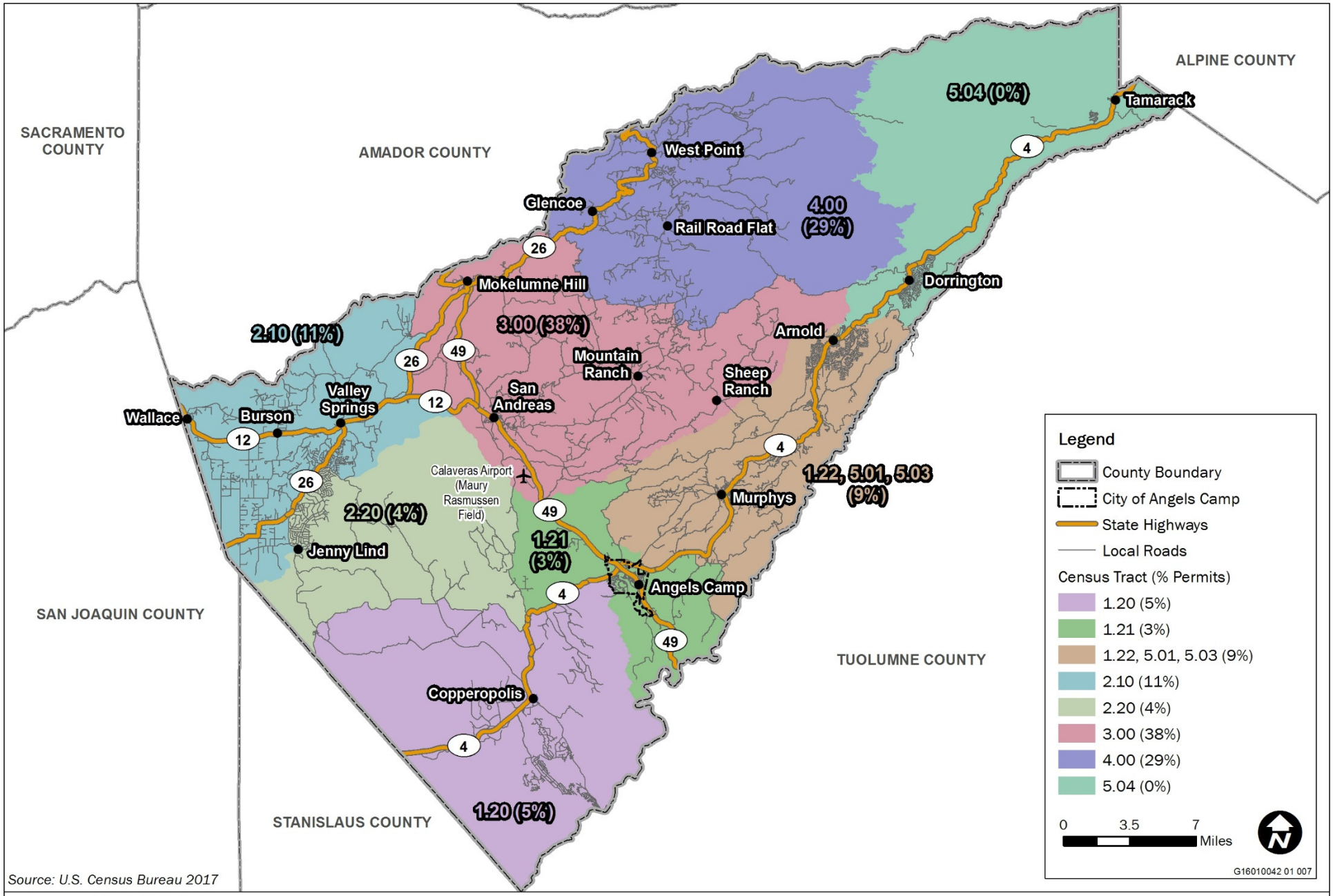
Individual harvests would most likely be distributed throughout the 3-month harvest period. The conservative approach of assuming that harvests could occur simultaneously would represent the worst-case scenario. However, based on existing cannabis cultivation and processing operations within the County, it is assumed that individual employees would work multiple sites. Therefore, if each employee works harvests at two separate sites, only one half of the maximum number of harvests could occur simultaneously. Thus, it was assumed that half of all outdoor, mixed-light, and commercial nursery and indoor commercial grow operations would occur simultaneously.

As a result, during the peak of the harvest season, potential outdoor mixed-light commercial grow facilities could generate up to 5,625 daily trips countywide; and the indoor grow facilities could generate 113 daily trips countywide. Thus, the implementation of the project could generate a total of approximately 5,738 new daily trips during the harvest period. It is assumed that the commercial cannabis grow sites and processing facilities will operate on weekdays during normal business hours (8 a.m. to 5 p.m.) Thus, employees will be traveling to and from the commercial cannabis sites during the am- and pm-peak periods for traffic. For the purposes of this analysis the total daily trips generated by the project (5,738) are assumed to be split evenly between the am- and pm-peak traffic times.

Traffic forecasts were then distributed and assigned to the existing transportation network based on the assumed origin, destination, and route of the employee trips. The distribution of trips along the transportation network was determined based on the anticipated location of commercial grow sites within the County, which was determined on locational information from applications received under the Urgency Ordinance, as shown in Exhibit 3.9-2.

Trip assignment was determined based on the assumptions that all trips would originate within Calaveras County, and employees would be traveling to and from the commercial cannabis sites from the nearest surrounding population centers. The County commute patterns consist mostly of automobile traffic from the smaller communities and rural areas into the State Routes 49, 26, 4 and 12 corridors. Congestion levels for roads and transit approach or exceed capacity for short periods and usually occur in the morning and evening peak periods near major intersections (CCOG 2012). Due the location of outdoor commercial grow sites generally being located in the more remote areas of the County, a large percentage project generated traffic would likely travel in the opposite direction from the existing peak-direction which would generally flow into the major employment centers. Thus, it is conservatively assumed that only 50% of employees would be traveling in the same direction as the daily peak-hour, peak-direction shown in Tables 3.9-1 and 3.9-2.

The analysis focuses on the four State highways (SR 4, 12, 26, and 49) serving Calaveras County during the peak of the cannabis harvest season, in the daily peak-hour, and in the peak-direction. These highways serve as the arterial roadways for the County, carrying the majority of County through traffic, and trips connecting communities and destination centers.



Source: U.S. Census Bureau 2017

Exhibit 3.9-2

Census Tracts and Percent Permits

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on transportation and circulation if it would:

- 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;
- conflict with an applicable congestion management program, including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- 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;
- substantially increase hazards due to a design feature (e. g., sharp curves or dangerous intersections) or incompatible uses (e. g., farm equipment);
- result in inadequate emergency access; or
- conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

In consideration congestion policies, the traffic volume increases would result in a significant impact to State Highways and other roadways if one or more of the following would occur.

- The additional peak-hour trips generated by the project would significantly increase congestion and cause a State highway currently operating at an acceptable LOS as determined by the Caltrans Concept LOS, to degrade to below the Concept LOS.
- The additional peak-hour trips generated by the project would result in State highway segments currently operating at unacceptable levels as determined by the adopted Caltrans Concept LOS for each individual highway, to degrade further and fail to maintain the existing LOS.
- The additional peak-hour trips generated by the proposed project would be added to State highway segments currently operating at LOS E or F in the peak-direction during the peak-hour.
- The additional peak-hour trips generated by the project would result in County roads operating below LOS C or contribute to existing County roads operating below D, E, or F.
- Within the City of Angel's Camp, the additional peak-hour trips generated by the project would result in LOS on local roads to degrade below LOS C or on collector roads to degrade below LOS D.

ISSUES NOT DISCUSSED FURTHER

The Calaveras County Airport near San Andreas is a general aviation airport that does not support any scheduled air services. Thus, the project would not result in a change in air traffic patterns or contribute to an increase in demand for air travel. As a result, this issue is not evaluated further.

The project would not include actions that would limit or adversely affect rail traffic, infrastructure, or activities in Calaveras County. Thus, rail transportation facilities are not evaluated further. Similarly, transit, bike, and pedestrian facilities and activities would not be affected by the project. Due to the rural character

of the transportation network and the anticipated dispersion of the individual grow sites throughout the County, the project would not generate demand for transit, bike, or pedestrian facilities. Therefore, the project would not create any conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Thus, transit, bike, and pedestrian facilities are not evaluated further.

Agencies with the responsibility for roadway design and operation, including Calaveras County; the City of Angels Camp; and Caltrans, all have adopted and enforce roadway design standards. These standards address a variety of roadway elements, including safety and hazards. The use and enforcement of these design standards prevents the development of transportation infrastructure that would substantially increase hazards because of a design feature. No new transportation improvements would occur as a result of this project, and the existing transportation infrastructure would have been constructed in compliance with all applicable design standards detailed above. Therefore, this issue is not evaluated further in this section.

IMPACT ANALYSIS

Impact 3.9-1: Construction-related increase in traffic.

Construction of new outdoor and indoor commercial grow sites would result in an increase in vehicular trips associated with construction workers traveling to and from construction sites. However, the increase in trips associated with construction at individual commercial grow sites would be minimal, dispersed throughout the larger roadway network serving the County, and staggered over an extended period of time. Additionally, the project does not include any changes to existing or planned transportation facilities. Thus, this impact is **less than significant.**

Adoption of the proposed ordinance is expected to result in the development of new grow sites for commercial production on parcels greater than or equal to 2 acres in size that are zoned as Residential Agriculture, Rural Residential, or Unclassified. The cultivation area of grow sites would not be permitted to exceed 22,000 square feet and a small building or shed may be constructed to store equipment and fertilizer and/or for the processing and packaging harvested cannabis.

Generally, the intensity of construction activity would be on scale with a residential renovation or building addition project requiring approximately two construction workers and would not last more than four weeks at each grow site. No substantive truck haul trips would be generated by the construction. Following adoption of the proposed ordinance, permitted construction activities would commence. It is unknown when construction activities associated with the individual commercial grow sites would occur, and how the construction at individual sites would overlap. However, it is assumed that the construction of commercial grow sites would occur over several weeks as individual permits are issued.

The construction of the commercial grow sites would add employee vehicle trips to the local roadway system. However, construction would be spread over several weeks, commercial grow sites would be located in rural areas, and trips generated by construction would be dispersed throughout the County. Therefore, the low number of trips generated at each commercial grow site during the construction phase would be distributed throughout the County roadway network, which has low existing traffic volumes on the local roadways, and would not substantially affect the effectiveness/performance of the existing circulation system. Additionally, construction at each site would only generate vehicle trips to a particular location or on a particular roadway for a limited period of time and would not include any changes to existing or planned transportation facilities. Thus, this impact is **less than significant.**

Mitigation Measures

No mitigation is required.

Impact 3.9-2: Long-term increase in traffic.

Upon adding trips associated with the project to existing traffic levels, the project would cause the LOS on nine State highway segments and potentially other local roadways to degrade to unacceptable levels. Therefore, with LOS that exceeds existing LOS standards, this impact is considered **significant.**

Given the programmatic nature of the project and the large study area which encompasses Calaveras County as a whole, traffic operations for Caltrans roadways (State highways) were evaluated by considering roadway segment operations rather than peak-hour intersection operations. The evaluation of impacts to the State Highways within the County is also considered to be a proxy for potential impacts to local roadways.

The proposed project could add approximately 1,400 pm peak-hour, peak-direction trips to the State highway network in the County during the height of the harvest season. The existing and existing plus project peak-hour, peak-direction roadway segment volumes and LOS for the State highways within Calaveras County are shown in Table 3.9-6. As shown, implementation of the proposed ordinance could degrade the LOS to unacceptable levels along segments on SR 4, SR 12, and SR 49 in the County.

Table 3.9-6 Existing LOS with and without project

Highway	Segment	Roadway Classification	Existing (2012) Peak Direction		Existing (2012) Plus Project Peak Direction	
			Peak Hr Volume	LOS	Peak Hr Volume	LOS
SR 4	Stanislaus Co. Line to O'Brynes Ferry Rd	Major Two-Lane Highway	349	C	425	***D***
SR 4	Pool Station Road to Angel Oaks Drive	Three-Lane Arterial	516	C	592	C
SR 4	Angel Oakes Drive to Foundry Lane	Three-Lane Arterial	303	C	379	C
SR 4	SR 49 to Allen Ln	Major Two-Lane Highway	385	**D**	509	**D**
SR 4	Allen Ln to Broadview Ln (Murphys)	Major Two-Lane Highway	822	**E**	946	***E***
SR 4	Broadview Ln to Lakemont Dr (Murphys to Arnold)	Major Two-Lane Highway	505	**D**	629	**D**
SR 4	Lakemont Dr to Henry Dr (Arnold)	Major Two-Lane Highway	520	**D**	644	**D**
SR 4	Henry Dr to Sierra Pkwy (Arnold to Dorrington)	Major Two-Lane Highway	421	**D**	421	**D**
SR 4	Skyline Dr to Alpine Co. Line (Dorrington to County Line)	Major Two-Lane Highway	181	C	181	C
SR 12	San Joaquin Co. Line to Burson Rd	Major Two-Lane Highway	326	C	488	***D***
SR 12	Burson Rd to SR 26	Major Two-Lane Highway	524	**D**	686	**D**
SR 12	SR 26 to SR 49	Major Two-Lane Highway	584	**D**	746	**D**
SR 26	San Joaquin Co. Line to Silver Rapids Rd	Major Two-Lane Highway	409	D	472	D
SR 26	Silver Rapids Rd to SR 12	Major Two-Lane Highway	657	D	720	D
SR 26	SR 12 to SR 49	Major Two-Lane Highway	91	C	253	C
SR 26	SR 49 to Ridge Rd	Major Two-Lane Highway	74	C	625	D
SR 26	Ridge Rd to Winton Rd	Major Two-Lane Highway	151	C	567	D
SR 26	Winton Rd to Amador Co. Line	Major Two-Lane Highway	125	C	541	D
SR 49	Amador Co. Line to SR 12	Major Two-Lane Highway	243	C	794	***E***
SR 49	SR 12 to Mountain Ranch Rd (San Andreas)	Three-Lane Arterial	522	C	1073	***E***
SR 49	Mountain Ranch Rd to 4th Crossing Rd	Major Two-Lane Highway	354	**D**	905	***E***
SR 49	4th Crossing Rd to Brunner Hill Rd	Major Two-Lane Highway	382	**D**	933	***E***
SR 49	Copello Drive to Dogtown Rd	Three-Lane Arterial	358	C	400	C

Table 3.9-6 Existing LOS with and without project

Highway	Segment	Roadway Classification	Existing (2012) Peak Direction		Existing (2012) Plus Project Peak Direction	
			Peak Hr Volume	LOS	Peak Hr Volume	LOS
SR 49	Dogtown Rd to SR 4 (W)	Three-Lane Arterial	570	C	612	C
SR 49	SR 4 (W) to Murphys Grade Rd	Three-Lane Arterial	664	**D**	706	**D**
SR 49	Murphys Grade Rd to Stanislaus Avenue	Three-Lane Arterial	487	C	529	C
SR 49	Stanislaus Avenue to Mark Twain Rd	Three-Lane Arterial	787	**D**	829	**D**
SR 49	Mark Twain Rd to Bret Harte Rd	Three-Lane Arterial	666	**D**	708	**D**
SR 49	Bret Harte Rd to Vallecito Rd	Three-Lane Arterial	616	C	658	***D***
SR 49	Vallecito Rd. to Tuolumne Co. Line	Major Two-Lane Highway	322	C	364	***D***

CCOG 2012.

Notes: Roadway segment LOS operating at an unacceptable level shown in bold. Roadway segment LOS exceeding thresholds as a result of project implementation shown in bold italic. Per Caltrans and as stated above, SRs 4, 12, and 49 should operate at LOS C or better and SR 26 should operate at LOS D or better.

The following roadways segments would degrade from an acceptable LOS in the peak-direction of travel during the PM peak period to an unacceptable level due to the addition of project generated trips to the County roadway network.

- SR 4 from the Stanislaus County Line to O'Brynes Ferry Road
- SR 12 from the San Joaquin County Line to Burson Road
- SR 49 from Bret Harte Road to Vallecito Road
- SR 49 from Vallecito Road to the Tuolumne County Line

The following State highway segments would degrade from an acceptable LOS for the peak-direction of travel during the PM peak period to the unacceptable LOS E.

- SR 49 from the Amador County Line to SR 12
- SR 49 from SR 12 to Mountain Ranch Road (San Andreas)

The following State highway segments currently deviate from their target LOS and will further degrade, thus, not maintaining their existing deficient LOS.

- SR 49 from Mountain Ranch Road to 4th Crossing Road (LOS D to LOS E)
- SR 49 from 4th Crossing Road to Brunner Hill Road (LOS D to LOS E)

The project would add trips to the following State highway segment that currently operates at LOS E or LOS F.

- SR 4 from Allen Lane to Broadview Lane (Murphys)

The addition of peak-hour, peak-direction project generated trips could result in an impact on traffic operations on nine State highway segments within the County during the height of the harvest season. Thus, the proposed project would contribute to increased congestion would conflict with an applicable plan, policy, or ordinance establishing measures of effectiveness for the performance of the circulation system. This impact is considered **significant**.

Mitigation Measure 3.9-2: Participation in County Road Impact Mitigation Fee Program.

The County shall amend the proposed ordinance to reflect the following text in Sections 17.95.210, 17.95.240 and 17.95.310:

> Participate in the County's approved Road Impact Mitigation (RIM) Fee Program prior to initiation of operational activities. Fees assessed for each cannabis-related activity will be based on the potential one-way employee trips that could be generated per day during peak operations and determined by the Calaveras County Public Works Department.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-2 would require participation in the established County Road Impact Mitigation (RIM) Fee Program for the mitigation of traffic impacts of new development. The location of improvements to be made under the program would be determined by County staff and based on where development is occurring and where improvements to the County's existing roadway system are necessary. However, based on a review of the current list of capital projects identified for implementation as part of the RIM Fee Program, improvements to certain roadways, especially State highways, may not occur prior to operation of cannabis-related operations allowed under the ordinance. As a result, implementation of the proposed ordinance may result in temporary and periodic increases in traffic volumes such that LOS would degrade to unacceptable levels. As a result, this impact would be **significant and unavoidable**.

Impact 3.9-3: Potential for increased emergency response times or inadequate emergency access.

Access to individual grow sites covered by this ordinance would be provided via existing local roadways and access driveways previously reviewed by, and in compliance with design and safety standards set forth by the responsible agency. Additionally, development review of any on-site ancillary structures would be reviewed by the Tuolumne/Calaveras Ranger Unit of the California Department of Forestry and Fire Protection, as well as the local fire jurisdiction. Therefore, emergency access would be maintained and any construction triggering development review would be subject to the applicable design and safety standards and review for emergency access and fire safety. Thus, the project would result in a **less-than-significant** impact on emergency response, access, and safety

Emergency access to individual grow sites constructed as part of the project would be provided via existing local roadways and access driveways. It is assumed that emergency access to all grow operations would occur on properties that were previously reviewed and deemed to be in compliance with the design and safety standards of the entity responsible for roadway design and operation, including Calaveras County, the city of Angels Camp, and/or Caltrans.

As required by Chapter 8.10 – Fire and Life Safety Regulations of the Calaveras County Code of Ordinances, any zoning clearance certificates or administrative use permits shall be submitted to the board and to the Tuolumne/Calaveras Ranger Unit of the California Department of Forestry and Fire Protection, as well as the local fire jurisdiction, for review. Additionally, as part of the ordinance, all individually permitted grow sites would be required to provide a 24-hour emergency contact for law enforcement, fire, utility, and County personnel pursuant to all state and local laws and regulations and who has the means and authorization to provide access to the cultivation site.

Therefore, the use and enforcement of the design standards of the responsible agency, and review of the development of any on-site ancillary structures necessitating zoning clearance certificates or administrative use permits by applicable fire authorities, ensures the development of transportation infrastructure that would provide adequate emergency access. Therefore, the project would result in a **less-than-significant** impact on emergency response, access, and safety

Mitigation Measures

No mitigation is required.

4 CUMULATIVE IMPACTS

4.1 CEQA REQUIREMENTS

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. Cumulatively considerable, as defined in 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." The 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.

4.2 GEOGRAPHIC SCOPE OF THE CUMULATIVE ANALYSIS AND RELATED PLANS

CEQA Guidelines Section 15130 identifies two basic methods for establishing the cumulative environment in which a project is considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. This cumulative analysis uses the "projections" approach to the cumulative analysis, relying on the summary of projections contained in the 1996 *Calaveras County General Plan*. Due to the age of the county's general plan, growth projects were supplemented with data from the California Department of Finance (DOF).

The DOF produces population projections for all counties in California, including Calaveras County. The DOF prepared the *Total Population Projections for California and Counties: July 1, 2015 to 2060 in 5-year Increments* (DOF 2014). Table 4-1 below shows the DOF's population projections in Calaveras County for 2015 through 2050, as well as the average annual growth rate for each time period. As shown in the table, Calaveras County's population is projected to increase from 45,654 in 2010, as presented above, to 45,923 in 2015. By 2035, (the horizon year for the General Plan that is currently in preparation), the County's population is projected to be 54,912. Future growth rates are projected to be lower than the historical growth rates shown in Table 4-1.

Table 4-1 Population and Growth Rate Projections for Calaveras County

Year	Population	Change	Average Annual Growth Rate
2015	45,923	269*	0.12*
2020	48,957	3,034	1.32
2025	51,415	2,458	1.0
2030	53,317	1,902	0.74
2035	54,912	1,595	0.60
2040	55,881	969	0.35
2045	56,205	324	0.12
2050	56,501	296	0.11

Note: *Compared to the 2010 population of 45,654.

Source: DOF 2014.

4.2.1 Geographic Context

The geographic area that could be affected by implementation of the proposed Medical Cannabis Cultivation and Commerce Ordinance Project varies depending on the type of environmental resource being considered. When the effects of the project are considered in combination with those other past, present, and probable future projects to identify cumulative impacts, the other projects that are considered may also vary depending on the type of environmental effects being assessed. Table 4-2 presents the general geographic areas associated with the different resources addressed in this analysis.

Table 4-2 Geographic Scope of Cumulative Impacts and Method of Evaluation

Environmental Resource	Geographic Area	
Aesthetics	Local (public viewpoints)	
Air Quality and Greenhouse Gas Emissions	Regional (San Joaquin Valley Air Pollution Control District—pollutant emissions that have regional effects) Local (immediate project vicinity—pollutant emissions that are highly localized) Global (greenhouse gas emissions)	
Biological Resources	Regional and local	
Cultural Resources	Regional	
Hydrology and Water Quality	Regional	
Land Use and Planning	Regional	
Noise	Local (immediate project vicinity where effects are localized)	
Transportation and Circulation	Regional and local	

Note: List = the use of a list of past, present, and probable future projects; Projections = the use of projections contained in relevant planning documents

Source: Compiled by Ascent Environmental in 2016

4.3 CUMULATIVE IMPACT ANALYSIS

For purposes of this EIR, the proposed Medical Cannabis Cultivation and Commerce Ordinance Project would result in a significant cumulative effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the proposed Medical Cannabis Cultivation and Commerce Ordinance Project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or

- the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the proposed Medical Cannabis Cultivation and Commerce Ordinance Project makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance.

This cumulative analysis assumes that all mitigation measures identified in Sections 3.1 through 3.8 to mitigate project impacts are adopted. The analysis herein analyzes whether, after adoption of project-specific mitigation, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects.

4.3.1 Aesthetics

Development of past, current, and future projects continue to alter the visual environment of Calaveras County and those communities in the immediate surrounding area. In general, the visual resource impacts of the related projects listed above are site-specific and would not combine with other projects that are not in the same viewshed to create a cumulative impact. In addition, the size restrictions for commercial operations, relatively low profile of cannabis grows and typical processing facilities, and requirements for screening, would limit the potential for operations to substantially affect scenic vistas.

Glare from nighttime lighting can be an annoyance to nearby residences and can reduce the quality of nighttime views. Where lights would be used in the cultivation and processing of cannabis, such uses would be entirely screened from view and there would not be potential to affect views in the area. However, cannabis grows and processing facilities may also require exterior lighting for security. The proposed project, in combination with other development in the region, could create substantial light pollution that would adversely affect views. However, implementation of Mitigation Measure 3.1-3, which modifies the proposed ordinance to include an exterior lighting policy that is consistent with other policies in the Calaveras County Code to avoid light pollution, including glare, light trespass, and over-lighting. Therefore, the proposed project would not result in a substantial contribution to a significant cumulative impact related light or glare.

Due to the localized nature of visual impacts, the proposed project in combination with cumulative development, would not make a considerable contribution to impacts to scenic vistas or glare from nighttime lighting. Measures are in place (Mitigation Measure 3.1-3) so that exterior lighting is consistent with other policies in the Calaveras County Code to avoid light pollution. Therefore, the project would not result in a considerable contribution to a significant cumulative visual resources impact and would result in ***less-than-significant*** *cumulative visual impacts.*

4.3.2 Air Quality and Greenhouse Gas Emissions

Because the Mountain Counties Air Basin is currently designated as a nonattainment area for ozone and PM_{10}, stationary and mobile-source emissions could contribute on a cumulative basis to pollutant concentrations that exceed the ambient air quality standards due to growth in the area. This would be a significant cumulative air quality impact. However, as discussed in Section 3.2, "Air Quality," construction and operational emissions associated with implementation of the proposed ordinance would not exceed any of applicable thresholds of significance. Consistent with industry standard guidance, projects that would not be significant on a project-level would also not be considered to have a cumulatively considerable contribution to a significant air quality impact because, by not exceeding established criteria pollutant thresholds, projects would not impede the air basin's progress towards attainment. Therefore, the cumulative impacts of the proposed ordinance would be less than significant.

To the extent that potential land uses within the cumulative context may occur, the level of odor producing uses in adjacent communities is anticipated to be minimal. Odor impacts are typically not additive, in any event, as areas impacted by isolated local odor sources typically do not overlap with other areas affected by other isolated local odor sources. Therefore, cumulative development is not anticipated to have a potentially significant impact in terms of the creation of objectionable odors affecting a substantial number of people.

Climate change is an inherently cumulative issue. The analysis of GHG emissions and climate change is provided in Section 3.2, "Air Quality and Greenhouse Gas Emissions" of this EIR. That cumulative analysis looks at the contribution of GHGs due to the overall construction and operation of the proposed project and determined they are less than cumulatively considerable because the project would not exceed applicable thresholds. The GHG analysis also concludes that the project would not conflict with local, state or federal plans to reduce GHG emissions. No further analysis of cumulative impacts related to GHG emissions is necessary.

The potential cumulative air quality and greenhouse gas impacts of the proposed ordinance would not be cumulatively considerable as identified above, either due to the level of emissions associated with the project or the localized nature of the impact. Therefore, the project would have a ***less-than-significant*** *cumulative air quality impact.*

4.3.3 Biological Resources

Habitat for biological resources has been reduced in the County over time, as land has been converted for agricultural, mining, and urban purposes. It is expected that habitat value would continue to decrease as commercial and residential development progresses in the region. Therefore, a cumulative impact on special-status species exists. As described in Section 3.3, "Biological Resources," implementation of the proposed ordinance would require, through implementation of Mitigation Measure 3-3.1, that proposed projects comply with the Central Valley RWQCB General Order R5-2015-0113 which requires that all dischargers (in this case cannabis cultivators) that seek to receive regulatory coverage under the General Order demonstrate that any and all impacts to special-status species have been fully mitigated and that impacts to wetlands and/or waters have been permitted. In order to demonstrate compliance with the General Order, project proponents would have to conduct surveys to identify special-status plant and wildlife species within the proposed indoor and outdoor grow sites, avoid, minimize, and compensate for impacts to special-status species and their habitat, which could include consultation with CDFW and/or USFWS under CESA or FESA respectively. Since applicants under the proposed ordinance would have to fully mitigate any and all impacts to special-status species and procure regulatory permits for wetlands/waters impacts, the project is not expected to substantially affect the distribution, reproduction or breeding productivity, population viability, the regional population of any species-status species, or cause a change in species diversity. As a result, the project would not be cumulatively considerable with respect to cumulative impacts on special-status plant and wildlife species and wetlands/waters.

Implementation of the proposed ordinance within the county could result in disturbance and conversion of sensitive habitats. Since the location of the commercial cannabis activities under the ordinance is unknown at this time, the affected type, conditions, and acreage of the habitats is also unknown. Continued development, as noted above, within the County and the region could further reduce the acreage and presence of sensitive natural communities, thereby resulting in a significant cumulative impact. Since the County, with respect to the proposed ordinance, cannot preclude the removal of sensitive natural communities from the development of commercial cannabis activities, the proposed ordinance would be considered cumulatively considerable.

Although implementation of the proposed ordinance would require the provision of fencing for aesthetic and security purposes, which could restrict wildlife movement in the area, the fencing, similar to what is currently provided under the urgency ordinance, would be restricted to the cultivation area, which would be up to ½ acre per site, and would not preclude the movement of wildlife through the area. As a result, impacts to wildlife corridors and wildlife movement would not be considered cumulatively considerable.

Cumulative development could result in significant biological resource impacts. The majority of impacts associated with the project would not be cumulatively considerable, as noted above, however, the development of commercial cannabis operations within the County would have cumulatively considerable impacts to sensitive habitats/vegetation alliances. Therefore, the project would have a ***significant and unavoidable*** *cumulative biological resource impact.*

4.3.4 Cultural Resources

Because no resources meet the criteria for a TCR under PRC Section 21074, the cumulative analysis does not include this topic. 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 California's Mother Lode region where common patterns of historic-era settlement have occurred over roughly the past two centuries. The cumulative context for archaeological resources and human remains is the former territory of the Penutian-speaking Mi-Wuk. The Mi-Wuk traditionally occupied a large portion of the central Sierra Nevada range, the adjacent foothills, and a portion of the adjacent Sacramento-San Joaquin River valley.

Because all significant cultural resources are unique and non-renewable members of finite classes, all adverse effects 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. 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. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Through implementation of Mitigation Measure 3.3-1, all cannabis-related activities would have to comply with the Central Valley Regional Water Quality Control Board Order R5-2015—0113 which requires that all potential impacts to cultural resources will be appropriately addressed and mitigated. This would provide the opportunity to avoid disturbance, disruption, or destruction of cultural resources. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. The types of soil formations that underlay the county are not considered sensitive for paleontological resources and the proposed ordinance would result in limited soil disturbance.

Because measures are in place (Order R5-2015—0113, Health and Safety Code Sections 7050.5 and 7052, California Public Resources Code Section 5097) to preclude significant effects if they are discovered, the proposed project's impacts would not result in a considerable contribution to cumulative cultural resources impacts. The potential cumulative cultural resources impacts of the proposed project are ***less than significant****.*

4.3.5 Hydrology and Water Quality

Calaveras County has three primary river systems, the Mokelumne, Calaveras, and Stanislaus rivers. These three river systems carry runoff down the western slope of the Sierra Nevada range to California's Central Valley. All three rivers are dammed on their main branch in one or more locations, and have extensive water supply and control infrastructure that provides irrigation for agriculture in the Central Valley, and municipal water for users both within and outside of the County. Overall water quality in the region has degraded over time as natural habitat has been converted to urban uses, and these uses have resulted in runoff of various pollutants into local and regional waterways. A variety of programs have been implemented with the goal of halting degradation of water quality and reversing this trend. Several state and federal agencies are involved in these programs, many of which are required by or originate in the federal Clean Water Act. Nonetheless, a cumulative adverse water quality condition exists.

Development of new cannabis cultivation or commercial cannabis sites would require ground-disturbing activities that could result in erosion and sedimentation, leading to degradation of water quality. Existing and new cannabis cultivation and commercial cannabis facilities have the potential to modify surface drainage and flows in such a manner that increased sedimentation and erosion could take place, leading to water quality degradation. The long-term operational use of unregulated pesticides, fertilizers, and other chemicals can also have a negative effect on water quality. As described in Section 3.6, "Hydrology and Water Quality," the County has a robust program of storm water pollution prevention and remediation through state, county,

and local regulatory programs (including Order R5-2015-0113). Compliance with storm water programs and permits, implementation of BMPs, and weekly inspections of sites by state regulators would limit the amount of pollution entering receiving waterways. The construction of new cannabis facilities could alter local drainage characteristics of individual sites and influence onsite or offsite flooding. with the Calaveras County grading and drainage ordinance and the General Order would limit these effects.

Cannabis operations are water-intensive and increased use of groundwater resources could contribute to continued, permanent drawdown of existing groundwater supplies. Increased groundwater consumption could also have detrimental effects on groundwater resources in bedrock regions, where little is known about the connectivity of groundwater supplies in proximal areas. Mitigation Measure 3.5-3 would amend the proposed ordinance to require implementation of a pump testing program to assess the viability of supply wells and requires procurement of an alternative water source if consistent drawdown is identified over a period of three years.

Water quality regulations require implementation of construction and post-construction site specific BMPs and water quality protection measures; regulations relating to grading and drainage would limit on-site and off-site flooding. Mitigation Measure 3.5-3 would amend the proposed ordinance to protect against drawdown of groundwater. Therefore, the implementation of the proposed ordinance and the construction and operation of related projects would reduce site-specific water quality impacts such that cumulatively adverse hydrology and water quality impacts would not occur. The ordinance would not have a considerable contribution such that a new significant cumulative impact would occur. The cumulative impact would be ***less than significant****.*

4.3.6 Land Use and Planning

The cumulative setting for land use is Calaveras County. It is anticipated that regional growth would be reviewed for consistency with adopted land use plans and policies by the County and its incorporated city (Angels Camp), in accordance with the requirements of CEQA, the *State Zoning and Planning Law*, and the State *Subdivision Map Act*, all of which require findings of plan and policy consistency prior to approval of entitlements for development. For this reason, cumulative impacts associated with inconsistency of future development with adopted plans and policies would be less than significant.

In addition, while the cultivation, manufacture, testing, distribution, transportation, and storage of medical cannabis within Calaveras County could create land use conflicts, the proposed ordinance includes regulations specifying buffers from sensitive land uses (e.g., schools) to reduce potential land use conflicts and other public nuisances; land use conflicts, including potential division of established communities, would not occur. The proposed ordinance, which includes amendment of the County Code to include Chapter 17.95, “Medical Cannabis Cultivation and Commerce,” in the Zoning Ordinance, is intended to implement and be consistent with existing General Plan policies and principles.

Because the proposed ordinance includes regulations specifying buffers from sensitive land uses (e.g., schools) so that land use conflicts, including potential division of established communities, would not occur and because the proposed ordinance would be consistent with existing General Plan policies and principles, it would not have a considerable contribution to cumulative land use impacts and would result in ***less-than-significant*** *cumulative impacts.*

4.3.7 Noise

Cumulative impacts from construction-generated noise could result if other future planned construction activities were to take place in close proximity to the project approximately at the same time and cumulatively combine with construction noise from the project. Further, construction-related noise is typically a site-specific impact that affects those in close proximity to the construction activities. Generally, the

intensity of construction activity related to the proposed ordinance would be similar to a residential renovation or building addition project. The proposed ordinance would also require that each grow site be set back at least 1,000 feet from sensitive land uses, such as schools, libraries, and parks. At this distance the noise level generated by the construction equipment would attenuate to approximately 51 dB through distance alone. In addition, all construction-generated noise would be temporary and exempt from noise standards in the County's Noise Ordinance because it would only occur during the daytime hours. Therefore, because other construction activities would be unlikely to cumulatively combine with the project and project generated construction noise is exempt from county noise standards the project's short-term construction-generated noise would not result in a substantial contribution such that a new significant cumulative noise impact would result.

The growing, harvesting, and processing of cannabis would generate certain noise levels as a result of the use of specialized, mechanized equipment. However, the use of mechanized equipment would be temporary and periodic in nature and adjacent land uses would not be exposed to noise levels that exceed noise standards in the County's Noise Ordinance. In addition, the 1,000-foot setback requirement in the proposed ordinance would prevent sensitive uses, as defined by the proposed ordinance, from being exposed to excessive noise levels during each harvest. Future projects would not cumulatively combine with stationary ambient noise levels at grow locations because noise is typically site specific and dissipates with distance from the source. The future projects would not be located close enough to the project site for stationary noise to combine with existing noise levels. Therefore, the project in combination with other projects would not result in a considerable contribution to a significant cumulative noise impact.

It would not be anticipated that roadways that provide access to grow sites would experience a doubling of traffic volumes and generate noticeable increases in traffic noise (i.e., 3 dB or greater) in the county or expose noise-sensitive receptors to excessive traffic noise levels that exceed County noise standards. Moreover, the operation of an individual grow site would not generate trips by heavy haul trucks that produce more roadside noise than passenger vehicles and light duty trucks that are typically used for worker commute trips. In addition, the trips added to affected roadways would occur during typical business hours of the day when people are less likely to be disturbed by traffic noise. For these reasons, the project's potential incremental contribution to this increase would not be cumulatively considerable. Therefore, noise generated from project operation would not result in a considerable contribution to a significant cumulative noise impact.

Because the incremental contributions of the proposed project during construction and operation to the existing noise environment and distance to receptors from grow sites, the project would not have a cumulatively considerable contribution to any cumulative impact related to noise; the cumulative impact would be ***less than significant.***

4.3.8 Population and Housing

As described in Section 3.8, "Population and Housing," Calaveras County and surrounding jurisdictions are projected to experience cumulative population growth over the next several years. This population growth is regulated and monitored by each respective jurisdiction. It is anticipated that local jurisdictions would only approve growth and development that is consistent with and planned for in their growth projections and planning documents, as required by relevant planning and zoning laws. Housing exists and is being constructed throughout the region. Therefore, cumulative population and housing impacts would be less than significant.

Implementation of the proposed ordinance would result in additional jobs, most of whom are expected to be current residents of the region. Project-generated population growth would be small enough to be indistinguishable from other projected local growth in the area. Project-generated growth, by itself, would not stimulate construction of any new housing, local government facilities, or utilities infrastructure in any one jurisdiction because new employees would likely be widely distributed throughout the region. For these

reasons, the population and housing impacts related to implementation of the proposed ordinance would not result in a considerable contribution to cumulative population and housing impacts.

Local jurisdictions are anticipated to only approve growth and development that is consistent with and planned for in their growth projections. Therefore, cumulative population and housing impacts would be less than significant. Implementation of the proposed ordinance would result in additional employment opportunities that would pull from an employee base that is likely be widely distributed throughout the region instead of resulting in a substantial increase in localized population. Therefore, the population and housing impacts related to implementation of the proposed ordinance would not result in a considerable contribution such that new significant cumulative population and housing impacts would occur. This is a ***less-than-significant*** *cumulative impact.*

4.3.9 Transportation and Circulation

Cumulative projects, including residential, commercial, tourist, transit/ transportation, and recreational development in Calaveras County, would generate traffic trips that contribute to the cumulative roadway operations of the region. The 2012 Calaveras County RTP, as presented in Section 3.8, "Transportation and Circulation," of this DEIR, addresses reasonably foreseeable cumulative future traffic conditions. Modeling of traffic conditions was conducted in the RTP for the year 2035, using planned development and the associated generation of vehicle trips, and construction and operation of reasonably foreseeable transportation projects and programs. As such, the transportation conditions presented in Section 3.9, "Transportation and Circulation," is reflective of cumulative transportation conditions in Calaveras County.

The roadway segments shown in Table 4-3 provide a summary of the PM peak-hour, peak-direction LOS and volumes on State highway facilities in the cumulative condition.

Table 4-3 Cumulative Conditions for State Highways within Calaveras County

Highway	Segment	Roadway Classification	Peak Direction	
			Peak Hour Volume	LOS
SR 4	Stanislaus Co. Line to O'Brynes Ferry Rd	Major Two-Lane Highway	720	**D**
SR 4	Pool Station Road to Angel Oaks Drive	Three-Lane Arterial	660	**D**
SR 4	Angel Oakes Drive to Foundry Lane	Three-Lane Arterial	370	C
SR 4	SR 49 to Allen Ln	Major Two-Lane Highway	670	**D**
SR 4	Allen Ln to Broadview Ln (Murphy's)	Major Two-Lane Highway	1280	**E**
SR 4	Broadview Ln to Lakemont Dr (Murphy's to Arnold)	Major Two-Lane Highway	840	**E**
SR 4	Lakemont Dr to Henry Dr (Arnold)	Major Two-Lane Highway	670	**D**
SR 4	Henry Dr to Sierra Pkwy (Arnold to Dorrington)	Major Two-Lane Highway	510	**D**
SR 4	Skyline Dr to Alpine Co. Line (Dorrington to County Line)	Major Two-Lane Highway	210	C
SR 12	San Joaquin Co. Line to Burson Rd	Major Two-Lane Highway	580	**D**
SR 12	Burson Rd to SR 26	Major Two-Lane Highway	690	**D**
SR 12	SR 26 to SR 49	Major Two-Lane Highway	800	**E**
SR 26	San Joaquin Co. Line to Silver Rapids Rd	Major Two-Lane Highway	640	D
SR 26	Silver Rapids Rd to SR 12	Major Two-Lane Highway	860	E
SR 26	SR 12 to SR 49	Major Two-Lane Highway	110	C
SR 26	SR 49 to Ridge Rd	Major Two-Lane Highway	150	C
SR 26	Ridge Rd to Winton Rd	Major Two-Lane Highway	250	C

Table 4-3 Cumulative Conditions for State Highways within Calaveras County

Highway	Segment	Roadway Classification	Peak Direction	
			Peak Hour Volume	LOS
SR 49	Amador Co. Line to SR 12	Major Two-Lane Highway	490	**D**
SR 49	SR 12 to Mountain Ranch Rd (San Andreas)	Three-Lane Arterial	570	C
SR 49	Mountain Ranch Rd to 4th Crossing Rd	Major Two-Lane Highway	720	**D**
SR 49	4th Crossing Rd to Brunner Hill Rd	Major Two-Lane Highway	720	**D**
SR 49	Copello Drive to Dogtown Rd	Three-Lane Arterial	620	C
SR 49	Dogtown Rd to SR 4 (W)	Three-Lane Arterial	750	**D**
SR 49	SR 4 (W) to Murphy's Grade Rd	Three-Lane Arterial	680	**D**
SR 49	Murphy's Grade Rd to Stanislaus Avenue	Three-Lane Arterial	630	C
SR 49	Stanislaus Avenue to Mark Twain Rd	Three-Lane Arterial	870	**D**
SR 49	Mark Twain Rd to Bret Harte Rd	Three-Lane Arterial	690	**D**
SR 49	Bret Harte Rd to Vallecito Rd	Three-Lane Arterial	690	**D**
SR 49	Vallecito Rd. to Tuolumne Co. Line	Major Two-Lane Highway	610	**D**

Notes: Roadway segment LOS operating at unacceptable levels shown in **bold** font.

Source: CCOG 2012

Table 4-4 shows cumulative and cumulative plus project roadway peak-hour, peak-direction volumes, and LOS along State highway facilities in the cumulative condition.

Table 4-4 Cumulative and Cumulative Plus Project along State Highway Facilities

Highway	Segment	Roadway Classification	Cumulative (2035) Peak Direction		Cumulative (2035) Plus Project Peak Direction	
			Peak Hr Volume	LOS	Peak Hr Volume	LOS
SR 4	Stanislaus Co. Line to O'Brynes Ferry Rd	Major Two-Lane Highway	720	**D**	796	***E***
SR 4	Pool Station Road to Angel Oaks Drive	Three-Lane Arterial	660	**D**	736	**D**
SR 4	Angel Oakes Drive to Foundry Lane	Three-Lane Arterial	370	C	446	C
SR 4	SR 49 to Allen Ln	Major Two-Lane Highway	670	**D**	794	***E***
SR 4	Allen Ln to Broadview Ln (Murphy's)	Major Two-Lane Highway	1280	**E**	1404	***E***
SR 4	Broadview Ln to Lakemont Dr (Murphy's to Arnold)	Major Two-Lane Highway	840	**E**	964	***E***
SR 4	Lakemont Dr to Henry Dr (Arnold)	Major Two-Lane Highway	670	**D**	794	***E***
SR 4	Henry Dr to Sierra Pkwy (Arnold to Dorrington)	Major Two-Lane Highway	510	**D**	510	**D**
SR 4	Skyline Dr to Alpine Co. Line (Dorrington to County Line)	Major Two-Lane Highway	210	C	210	C
SR 12	San Joaquin Co. Line to Burson Rd	Major Two-Lane Highway	580	**D**	742	**D**
SR 12	Burson Rd to SR 26	Major Two-Lane Highway	690	**D**	852	***E***
SR 12	SR 26 to SR 49	Major Two-Lane Highway	800	**E**	962	***E***
SR 26	San Joaquin Co. Line to Silver Rapids Rd	Major Two-Lane Highway	640	D	703	D
SR 26	Silver Rapids Rd to SR 12	Major Two-Lane Highway	860	**E**	923	***E***
SR 26	SR 12 to SR 49	Major Two-Lane Highway	110	C	272	C

Table 4-4 Cumulative and Cumulative Plus Project along State Highway Facilities

Highway	Segment	Roadway Classification	Cumulative (2035) Peak Direction		Cumulative (2035) Plus Project Peak Direction	
			Peak Hr Volume	LOS	Peak Hr Volume	LOS
SR 26	SR 49 to Ridge Rd	Major Two-Lane Highway	150	C	701	D
SR 26	Ridge Rd to Winton Rd	Major Two-Lane Highway	250	C	666	D
SR 49	Amador Co. Line to SR 12	Major Two-Lane Highway	490	**D**	1041	***E***
SR 49	SR 12 to Mountain Ranch Rd (San Andreas)	Three-Lane Arterial	570	C	1121	***E***
SR 49	Mountain Ranch Rd to 4th Crossing Rd	Major Two-Lane Highway	720	**D**	1271	***E***
SR 49	4th Crossing Rd to Brunner Hill Rd	Major Two-Lane Highway	720	**D**	1271	***E***
SR 49	Copello Drive to Dogtown Rd	Three-Lane Arterial	620	C	662	***D***
SR 49	Dogtown Rd to SR 4 (W)	Three-Lane Arterial	750	**D**	792	**D**
SR 49	SR 4 (W) to Murphy's Grade Rd	Three-Lane Arterial	680	**D**	722	**D**
SR 49	Murphy's Grade Rd to Stanislaus Avenue	Three-Lane Arterial	630	C	672	***D***
SR 49	Stanislaus Avenue to Mark Twain Rd	Three-Lane Arterial	870	**D**	912	**D**
SR 49	Mark Twain Rd to Bret Harte Rd	Three-Lane Arterial	690	**D**	732	**D**
SR 49	Bret Harte Rd to Vallecito Rd	Three-Lane Arterial	690	**D**	732	**D**
SR 49	Vallecito Rd. to Tuolumne Co. Line	Major Two-Lane Highway	610	**D**	652	**D**

Notes: Roadway segment LOS operating at an unacceptable level shown in **bold**. Roadway segment LOS exceeding thresholds as a result of project implementation shown in ***bold italic***.

Source: CCOG 2012

The following roadways segments would degrade from an acceptable LOS in the peak-direction of travel during the PM peak period to an unacceptable LOS due to the addition of project generated trips to the county roadway network under the cumulative condition.

- SR 49 from SR 12 to Mountain Ranch Road (San Andreas) (LOS C to LOS E)
- SR 49 from Copello Drive to Dogtown Road (LOS C to LOS D)
- SR 49 from Murphy's Grade Road to Stanislaus Avenue (LOS C to LOS D)

The following State highway segments that deviate from their target LOS in the cumulative condition would further degrade with the addition of project-generated traffic, thus, not maintaining their cumulative scenario deficient LOS.

- SR 4 from Stanislaus County Line to O'Brynes Ferry Road (LOS D to LOS E)
- SR 4 from SR 49 to Allen Lane (LOS D to LOS E)
- SR 4 from Lakemont Drive to Henry Drive (Arnold) (LOS D to LOS E)
- SR 12 from Burson Road to SR 26 (LOS D to LOS E)
- SR 49 from Amador County Line to SR 12 (LOS D to LOS E)
- SR 49 from Mountain Ranch Road to 4th Crossing Road (LOS D to LOS E)
- SR 49 from 4th Crossing Road to Brunner Hill Road (LOS D to LOS E)

Additionally, in the cumulative scenario the project would add trips to the following State highway segments that are projected to operate at LOS E or LOS F.

- SR 4 from Allen Lane to Broadview Lane (Murphy’s)
- SR 4 from Broadview Lane to Lakemont Drive (Murphy’s to Arnold)

- SR 12 from SR 26 to SR 49
- SR 26 from Silver Rapids Road to SR 12

Therefore, project-generated trips during the peak hour would contribute to the continued degradation of LOS along County roadways and State highways within the County. However, as noted in Section 3.8, "Transportation and Circulation," Mitigation Measure 3.8-2 would require participation in the County's Road Impact Mitigation (RIM) Fee Program for all cannabis-related operations. In doing so, the project would provide funding for road improvements based on where development is occurring and where improvements to the County's existing roadway system are necessary. However, based on a review of the current list of capital projects identified for implementation as part of the RIM Fee Program, improvements to certain roadways, especially State highways, may not occur prior to operation of cannabis-related operations allowed under the ordinance. Therefore, the proposed ordinance could represent a considerable contribution to a significant cumulative transportation impact.

Although the project would require participation in the County's RIM Program, due to timing of improvements, the project may contribute to the degradation of LOS below established standards or contribute to existing degraded LOS, such that the project would be cumulatively considerable. Therefore, the cumulative impact of the project would be ***significant and unavoidable.***

This page intentionally left blank.

5 OTHER CEQA SECTIONS

5.1 SIGNIFICANT UNAVOIDABLE IMPACTS

Section 21100(b)(2)(A) of the State CEQA Guidelines provides that an EIR shall include a detailed statement setting forth "in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented." Accordingly, this section provides a summary of significant environmental impacts of the project that cannot be mitigated to a less-than-significant level.

Sections 3.1 through 3.9 of this DEIR describe the potential environmental impacts of the project and recommend various mitigation measures to reduce impacts, to the extent feasible. Chapter 4, "Cumulative Impacts," determines whether the incremental effects of this project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. After implementation of the recommended mitigation measures, which require modification of draft language within the proposed ordinance, most of the impacts associated with implementation of the project would be reduced to a less-than-significant level. The following impacts are considered significant and unavoidable; that is, no feasible mitigation is available to reduce the project's impacts to a less-than-significant level.

Impact 3.2-4: Exposure of People to Objectionable Odors.

Implementation of the proposed ordinance would allow for construction and operation of cannabis-related activities, which would generate localized construction and operational odors associated with equipment operation, which could be odor sources to nearby residents. However, the cultivation and processing of cannabis generates odors associated with the plant itself, which during maturation can produce substantial odors. Setbacks are provided as part of the proposed ordinance; however, they do not preclude the generation of odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to a substantial number of people.

Impact 3.3-3: Degradation or removal of sensitive natural communities.

Implementation of the proposed project could result in disturbance or removal of natural land cover, through vegetation removal or grading which could result in the degradation or removal of sensitive natural communities.

Impact 3.8-2: Long-term increase in traffic.

Upon adding trips associated with the project to existing traffic levels, the project would cause the LOS on nine State highway segments and potentially other local roadways to degrade to unacceptable levels.

Chapter 6, "Alternatives," considers alternatives to the project that may be capable of reducing or avoiding some of these impacts.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines (Section 15126) require a discussion of the significant irreversible environmental changes which would be involved in a project should it be implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms.

The project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- construction materials, including such resources as soil, rocks, wood, concrete, glass, roof shingles, and steel;
- land area committed to new cannabis-related facilities;
- water supply for project construction and operation; and
- energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources. Construction contractors selected would use best available engineering techniques, construction and design practices, and equipment operating procedures. Long-term project operation would not result in substantial long-term consumption of energy and natural resources because buildings would be designed using current energy efficient technologies as required by applicable building codes.

5.3 ENERGY CONSERVATION

CEQA requires consideration of potential energy impacts of a proposed project (California Public Resources Code Section 21100[b][3]). Appendix F of the State CEQA Guidelines outlines issues related to energy use and conservation, and includes potential project description considerations(e.g., energy supplies, projected vehicle miles traveled, anticipated equipment types [i.e., gasoline-powered, diesel-powered, or electric], and energy sources), types of impacts applicable to energy use, and potential mitigation measures to reduce wasteful, inefficient, and unnecessary consumption of energy. Please refer to Sections 3.2, "Air Quality" and 3.9, "Transportation and Circulation" for further information related to the project's energy (fuel) usage and vehicle miles traveled. According to CEQA, the goal of energy conservation implies wise and efficient use of energy, which can be accomplished by reducing energy consumption (e.g., natural gas and oil) and increasing reliance on renewable energy sources.

Within Calaveras County, the major energy users are residential and commercial buildings, industry, transportation, and electric power generators. Pacific Gas & Electric (PG&E) provides electricity and natural gas services to the majority of Northern California, including Calaveras County [California Energy Commission (CEC) 2015a]. In 2012, PG&E's electricity generation sources consisted of: 25 percent natural gas, 23 percent nuclear, 6 percent large hydropower, 30 percent renewable sources, and 17 percent from other sources (PG&E 2016). On the demand side, in 2015, Calaveras County residents and non-residential energy consumers used 314,000 megawatt-hours (MWh) of electricity and approximately 1 million therms of natural gas (CEC 2017a, CEC 2017b). With respect to transportation fuels, the California Energy Commission (CEC) estimates that 14 million gallons of gasoline and 2 million gallons of diesel fuel were sold in Calaveras County in 2015 (CEC 2016). At the state level, California annually consumes 14.6 billion gallons of gasoline, 2.7 billion gallons of diesel fuel, and 1.8 billion gallons of gasoline equivalents of other alternative and miscellaneous fuels[1] (BOE 2015, CEC 2013a: 279).

A CEC staff forecast of future energy demand shows that statewide electricity consumption will grow by between 0.79 and 1.56 percent per year between 2012 and 2024; and natural gas consumption is expected to reach up to 24,092 million therms by 2025 for an annual average growth rate of up to 0.86 percent. The most recent Scoping Plan, prepared to address GHG emissions in the State, also commissioned state agencies to develop comprehensive and enforceable requirements for the State's electric and utilities to achieve near-zero GHG emissions by 2050 (ARB 2014:45). With the onset of several transportation

[1] Gasoline and diesel consumption is based on fuel tax statistics for 2014. Other fuel estimates reflect 2013 conditions, based on the California Energy Commissions estimates.

energy policies, such as the Low Carbon Fuel Standard and the Advanced Clean Cars program, the CEC anticipates that the state would experience a 2-billion-gallon decline in annual gasoline consumption from 2012 to 2022. However, the CEC anticipates a growing demand for diesel fuel, reflecting the recent growth in freight transport, although alternatives, such as natural gas trucks and electrification of freight lines, may provide some relief (CEC 2016).

Energy used during project construction and operation would be expended in the form of electricity, gasoline, and diesel fuel, which would be used primarily by construction equipment and haul trucks during project construction and operation activities. During operation, electricity would be used for lighting (for indoor and mixed-light operations), air conditioning (for indoor operations), and pumping of groundwater for irrigation. The use of natural gas as a result of implementation of the proposed ordinance is not anticipated. Based on the anticipated level of commercial cultivation and commerce development identified in Chapter 2, "Project Description," annual electricity demand (countywide) as a result of the proposed ordinance would increase by approximately 4,500 MWh, which represents approximately 1.4 percent of the County's total electricity demand.[2] The majority of this demand, approximately 3,900 MWh, would be associated with lighting for indoor cultivation sites. As noted in Section 3.9, "Transportation and Circulation," the project would result in an increase of up to 5,625 daily vehicle trips. Assuming up to 15 miles per trip and an average fuel efficiency of 20 miles per gallon, up to 4,220 gallons of fuel (primarily gasoline) could be consumed per day. While this would represent an increase in energy consumption within the County, there is no reason to expect energy to be used unwisely and inefficiently during project construction and operation. In fact, applicants and landowners seeking permits under the proposed ordinance would be expected to use the best available engineering techniques, construction and design practices, and equipment operating procedures to reduce construction costs. Therefore, the project, while it would increase energy demand/use as a result of project construction and operation, would not result in the inefficient or wasteful use of energy.

5.4 GROWTH-INDUCING IMPACTS

5.4.1 CEQA Requirements

CEQA specifies that growth-inducing impacts of a project must be addressed in an EIR (CCR Section 21100[b][5]). Specifically, Section 15126.2(d) of the State CEQA Guidelines states that the EIR shall:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project involved construction of new housing, which would facilitate new population to an area. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);

[2] Calculation based on air quality/GHG modeling results (refer to Appendix B) and monthly electricity demand for 5,000 square feet of indoor cultivation (Oldman 2015).

- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or

- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The State CEQA Guidelines do not distinguish between planned and unplanned growth for purposes of considering whether a project would foster additional growth. Therefore, for purposes of this EIR, to reach the conclusion that a project is growth inducing as defined by CEQA, the EIR must find that it would foster (i.e., promote, encourage, allow) additional growth in economic activity, population, or housing, regardless of whether the growth is already approved by and consistent with local plans. The conclusion does not determine that induced growth is beneficial or detrimental, consistent with Section 15126.2(d) of the State CEQA Guidelines.

If the analysis conducted for the EIR results in a determination that a project is growth-inducing, the next question is whether that growth may cause adverse effects on the environment. Environmental effects resulting from induced growth (i.e., growth-induced effects) fit the CEQA definition of "indirect" effects in Section 15358(a)(2) of the State CEQA Guidelines. These indirect or secondary effects of growth may result in significant environmental impacts. CEQA does not require that the EIR speculate unduly about the precise location and site-specific characteristics of significant, indirect effects caused by induced growth, but a good-faith effort is required to disclose what is feasible to assess. Potential secondary effects of growth could include consequences – such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat – that are the result of growth fostered by the project.

5.4.2 Growth-Inducing Impacts of the Project

Implementation of the proposed ordinance is intended to regulate the use of existing properties in accordance with applicable regulations and ensure that individual properties interested in commercial cultivation, processing, and distribution of cannabis do so in a manner consistent with the existing character and goals of the County. As noted by the number of anticipated operations identified in Chapter 2 "Project Description," the number of commercial cannabis operations does not represent a dramatic increase in development or the division of existing properties into numerous parcels for dense and intensified development. The proposed project would not substantially increase population growth in the surrounding region because it would not require the construction of new housing (see also Section 3.8, "Population and Housing"). Many of the employees necessary during harvest and cultivation are already present within the County, as evidence by the level of commercial cannabis cultivation and processing currently allowed within the County by the Urgency Ordinance. Additionally, the project would not remove barriers to population growth because no new or expanded (beyond what is currently planned) public infrastructure facilities would be installed. Potential development associated with the proposed ordinance is not anticipated to meaningfully affect employment or other growth in the region, given the size of the regional economy and current conditions. The project would result in increased revenue with the County, both by residents and the County itself, however, with respect to increased revenue for the County, this is anticipated to increase the ability of the Sheriff's Department, Calaveras County Code Compliance, and the Planning Department to process, monitor, and enforce cannabis-related activities within the County, per the County's requirements. Therefore, the project would not contribute to substantial population growth or be considered growth-inducing.

6 ALTERNATIVES

6.1 INTRODUCTION TO ALTERNATIVES

The California Code of Regulations (CCR) Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe "… a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the "rule of reason." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a project with the impacts of not approving the project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, here the Calaveras County Board of Supervisors. (See PRC Sections 21081.5, 21081[a][3].)

6.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

6.2.1 Attainment of Project Objectives

As described above, one factor that must be considered in selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the project (CCR Section 15126.6[a]). Chapter 2, "Project Description," articulated the County's project objectives for the proposed Medical Cannabis Cultivation and Commerce Ordinance Project, which are repeated below:

1. Comprehensively regulate premises within the County used for marijuana cultivation or commercial activities related to marijuana or to prohibit those uses within the constraints of state law.

2. Maintain the health, safety, and well-being of the County, its residents, and environment.

3. Minimize risks of and complaints regarding fire, odor, and pollution caused by unregulated cultivation of marijuana within the County.

4. Protect the County's surface and groundwater resources by reducing the discharge of sediments, pesticides, fertilizers, petroleum hydrocarbons, trash, and human waste.

6.2.2 Summary of Project Impacts

Refer to the Executive Summary Chapter or Chapter 5 "Other CEQA" for a summary of the significant impacts of the project.

6.2.3 Alternatives Considered but Not Evaluated Further

State CEQA Guidelines Section 15126.6(c) provides the following guidance in selecting a range of reasonable alternatives for the project. The range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project, and could avoid or substantially lessen one or more of the significant effects. The EIR should also identify any alternatives that were considered by the lead agency, but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The following describes alternatives considered by Calaveras County but not evaluated further in this DEIR, and a brief description of the reasons for the County's determination.

Recreational Cultivation Alternative

In light of the November 2016 election and the passage of Proposition (Prop) 64, Adult Use of Marijuana Act, by the State of California, the County considered an alternative that would allow for the commercial cultivation of cannabis for recreational purposes. Some counties within California are currently considering amending their existing code to allow for commercial operations related to recreational cannabis use, in anticipation of the State determining how to appropriately regulate recreational use. However, allowing for commercial cultivation of recreational cannabis would likely increase the number of applications and level of development that would occur within the County, thereby requiring greater land disturbance and impacts to biological and cultural resources. Additionally, air quality, noise, and traffic impacts would also be expected to increase. This alternative would not substantially reduce or avoid any significant effects resulting from the project, which is the primary intent of an alternatives evaluation. Finally, following passage of Prop 64, the County has not identified a desire to expand cultivation to include recreational use. For these reasons, this alternative was dismissed from further analysis in this EIR.

One-Quarter-Acre Maximum Cultivation Areas

County staff also considered further reducing the potential cultivation area of commercial cannabis operations to one-quarter acre for outdoor grows as another alternative. However, it was determined that a similar number of applications would likely be received under this alternative, and additional parcels/properties in more urban areas of the County could apply for permits because of their ability to adhere to setback requirements identified in the proposed ordinance. Therefore, a similar amount of land disturbance (and corresponding biological and cultural resources impacts) would likely occur. Further, while the overall harvest period may be shorter due to a lesser number of overall plants harvested, the number of employees required during harvest may remain the same, thereby not reducing countywide traffic compared to the project. As a result, this alternative would not substantially reduce or avoid any significant effects resulting from the proposed ordinance. For these reasons, this alternative was dismissed from further analysis in this EIR.

6.3 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

Alternatives evaluated in this DEIR are:

- **Alternative 1 – No Project**, which assumes no change in the County Code and continuation of the existing zoning ordinance. This alternative also assumes that the urgency ordinance would not be extended into the future;
- **Alternative 2 – Ban on Commercial Cannabis Operations Alternative**, which assumes that, through an action by the Board of Supervisors, a countywide ban on commercial cannabis operations would be implemented; and
- **Alternative 3 – Reduced Zoning Designations Available for Commercial Cannabis Operations**, which assumes a reduction in the zoning designations that would allow commercial cannabis operations. Under this alternative, Rural Residential (RR) would be removed from consideration as an acceptable zone within which commercial cannabis operations could occur.

Each of these alternatives is described in more detail and analyzed below.

6.3.1 No Project Alternative (Alternative 1)

State CEQA Guidelines Section 15126.6(e)(1) requires that the no project alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (Section 15126.6[e][2]).

Under this alternative, the County would not adopt regulations related to the growing, processing, and distribution of cannabis within the county limits. The urgency ordinance would also be allowed to expire and not be renewed. State regulations related to the growing, processing, and distribution of cannabis for medicinal purposes (e.g., RWQCB Order R5-2015-0113 and Department of Pesticide Regulations requirements) would remain in place, however, the County's zoning requirements do not permit cannabis cultivation for commercial purposes in any zone. Prop 64 allowances for personal recreational use would be permitted under this alternative. This would result in no future commercial cultivation activities, and existing grows would either be abandoned or repurposed. Because the revenue source (sales of medical marijuana) that motivated individual property owners to invest in property modifications would no longer be available, the length of time and/or feasibility to restore/redevelop properties is not known. It should also be noted that the County would also not realize revenue from permit applications and Measure C taxes such that the

ability to monitor grows within the County and their relative level of compliance with state and local regulations would be reduced. Due to the fact that this alternative would not allow for commercial cannabis operations within the County, the mitigation measures identified for the proposed ordinance would not be considered feasible measures for the purposes of mitigating the impacts of this alternative.

ENVIRONMENTAL ANALYSIS

The environmental analysis of this alternative does not consider potential illegal activities that may result if the ordinance is not passed. The discussion of potential impacts associated with illegal activities are addressed under Alternative 2 (Section 6.3.2). The same types of considerations apply to this alternative.

Aesthetics

Under this alternative, cannabis cultivation would not occur to the extent of the proposed project. Only personal recreational cultivation, as allowed by Prop 64, would be permitted. Existing commercial grows would either be abandoned or repurposed at the landowner's discretion. The proposed ordinance includes requirements for an eight-foot-tall fence to be maintained around the entire cultivation area which, to some degree, would screen nearby views from cannabis-related activities. Under this alternative, the potential exists that existing cultivation sites would be abandoned in place and existing screening not maintained. As a result, aesthetic impacts under Alternative 1 could increase due to potential blight from unmaintained, graded portions of certain properties. Therefore, overall aesthetic impacts associated with Alternative 1 would be greater than the project and potentially significant.

Air Quality/Greenhouse Gas Emissions

Alternative 1 would not expressly regulate cannabis cultivation, processing, and distribution within the County, however, cannabis operations that could otherwise meet state regulations related to cannabis cultivation, processing, and distribution would cease within the County. As described in Section 3.2 "Air Quality and Greenhouse Gas Emissions," the project's emissions (with mitigation) would not exceed applicable thresholds and no significant impacts would occur. However, under this alternative, no emissions related to cannabis cultivation, processing, and distribution would occur and would be less than the project. Overall, Alternative 1 is determined to have lesser air quality and greenhouse gas emissions impacts than the project. No impact would occur.

Biological Resources

Under Alternative 1, the County would not adopt county-specific regulations to guide how cannabis cultivation, processing, and distribution facilities could be constructed/operated. However, cannabis cultivation, processing, and distribution would not be allowed per existing zoning restrictions, which currently do not and would not (under this alternative) allow cannabis cultivation, processing, and distribution. As a result, existing cannabis-related activities would cease within the County, and existing cannabis-related sites would either be abandoned or repurposed. Over time, many areas would return to a natural condition and serve as potential habitat for sensitive species in the region. Additionally, there would be less potential ground disturbance under this alternative, thereby resulting in less potential reduction in habitat for sensitive biological resources. As a result, impacts would be less than the project and less than significant.

Cultural Resources

Under this alternative, there would be less ground disturbance than the proposed project, thereby resulting in less potential for encountering cultural resources. Impacts would be less than the project and less than significant.

Hydrology and Water Quality

Under Alternative 1, existing cannabis-related operations would either be repurposed or abandoned in place. This could result in exposed soils without properly maintained stormwater runoff control (e.g., best management practices) and increase sedimentation in nearby creeks, streams, and rivers. Over time, many of these areas would revegetate on their own and the risk of sedimentation would decrease. However,

because sedimentation could increase over the short-term compared to existing conditions and the project, Alternative 1 could result in potentially greater impacts to hydrology and water quality than the project and would be potentially significant.

Land Use and Planning

Similar to the project, Alternative 1 is not anticipated to result in the physical division of existing communities. Under this alternative, cannabis operations would not occur within existing property and would not conflict with the goals and policies established in the County General Plan. However, because this alternative would not involve a modification of an existing uses/communities, land use and planning impacts would be less than the project. No impact would occur.

Noise

Under Alternative 1, no construction or operational noise associated with commercial cannabis operations would be occur. The operation of equipment during construction and operation would not occur, and as a result impacts would be less under this alternative than the project, and no impact would occur.

Population and Housing

Under this alternative, the number of employment opportunities within the County would not increase. As a result, this alternative would not have any effects on local and regional population or housing opportunities. By comparison, the proposed ordinance would increase the number of employees within the County. Because no additional employment opportunities would occur under this alternative, this alternative would result in lesser impacts than the project, and no impact would occur.

Transportation and Circulation

Under this alternative, cannabis-related operations would cease within the County. As a result, potential increases in vehicular travel and potential transportation impacts associated with on-going cannabis operations would cease. Implementation of Alternative 1 would result in lesser traffic impacts compared to the project. No impact would occur.

ACHIEVEMENT OF PROJECT OBJECTIVES

Under Alternative 1, the County would not implement regulations specific to cannabis cultivation, processing, and distribution, however due to the County's permissive zoning requirements, cannabis-related activities would not be permitted. This alternative would not meet any of the project objectives identified above in Section 6.2, "Project Objectives" because it would not implement countywide regulation of cannabis cultivation, processing, and distribution within the county limits nor would it increase the County's ability to monitor, manage, and enforce regulations related to air quality, odors, and hydrology/water quality.

6.3.2 Ban on Commercial Cannabis Operations Alternative (Alternative 2)

Under this alternative, the County would implement a ban on commercial cannabis operations and cannabis cultivation, in general, except for up to six indoor cannabis plants (regardless of whether they are cultivated for medical or recreational use or both). Per Proposition 64, as approved on November 8, 2016 by California voters (California Health and Safety Code Section 11362.2 (b)(2)), the County may not completely prohibit residents from growing marijuana indoors and must allow residents the ability to cultivate up to six indoor plants (although reasonable regulations can be imposed). No new commercial cannabis cultivation, processing, or distribution facilities would be allowed within the County. This alternative would also result in the cessation of commercial cannabis operations currently allowed under the urgency ordinance and would require the restoration of existing sites to pre-existing conditions. The responsibility, including all expenditures, for restoration to pre-existing conditions, would be borne by the individual property owners. Because the revenue source (sales of medical marijuana) that motivated individual property owners to invest in property modifications would no longer be available under the ban, the length of time and/or

feasibility to restore properties to pre-existing conditions is not known. Additional revenues afforded to the County for policing and monitoring compliance with applicable regulations (e.g. water-quality) would no longer be collected. Due to the fact that this alternative would not allow for commercial cannabis operations within the County, the mitigation measures identified for the proposed ordinance would not be considered feasible measures for the purposes of mitigating the impacts of this alternative.

ENVIRONMENTAL ANALYSIS

While it is generally reasonable to assume regulatory compliance when evaluating potential physical environmental impacts under CEQA, it should be noted that, in this case (i.e., the cultivation, processing, and distribution of cannabis), there is evidence to support the need for a discussion of the potential for illegal cannabis-related activities to occur within the County. There have been illegal cannabis cultivation activities throughout the County for many years, and these have increased recently. An analysis of aerial imagery obtained by the County identified over 500 unregistered cultivation sites. Approximately 740 applications for commercial cannabis cultivation registration were submitted under the County's urgency ordinance. Illegal cultivation is likely to occur under any of the alternatives considered in this EIR. Thus, for the purposes of comparing the impacts of an alternative to a baseline, the baseline condition includes existing illegal activity.

A potential outcome of a ban or not adopting any regulation (no project) could be the elimination of a source of funding for monitoring and control of illegal activities related to cannabis (the application fee and the Measure C canopy tax). Additionally, while restoration of sites currently used for cannabis cultivation would be required under a ban, the level of compliance is uncertain given that the revenue source used to develop the sites would be removed for individual operators. As a result, the following discussion compares the potential impacts of a ban on commercial cannabis operations with assumed regulatory compliance but also includes a discussion of potential outcomes associated with illegal cannabis-related operations that may occur in spite of the ban.

Aesthetics

Under Alternative 2, the cultivation, processing, and distribution of medical cannabis would not be permitted within the County. Existing cultivation and processing operations within the County would cease to operate and landowners would be required (through conditions that would be imposed by the ban) to restore cultivation, processing, and distribution sites to pre-existing conditions. It is anticipated that some of the screening required by the urgency ordinance would be removed. Over time and assuming that alternative developments are not proposed for former cannabis cultivation and processing sites, these areas would return to a more natural condition that would look similar to much of the natural landscape and aesthetic condition present within the County. Because this alternative would result in a reduction in current development within the County over time, impacts would be less than that of the proposed ordinance and less than significant.

With the implementation of a ban under this alternative, it is possible that illegal cannabis-related activities within the County could persist or increase without sufficient funding to monitor and abate them, which could be provided by the proposed ordinance. However, as it pertains to aesthetics, such activities would likely be located in remote areas of the County (because they would not be permitted), away from viewers and designated scenic resources that are publicly accessible. As a result, in the event of an increase in illegal cannabis-related activities under this alternative, impacts would still likely be less than that of the proposed ordinance.

One other potential outcome is that some existing cannabis-related sites are not restored but, instead are abandoned or otherwise allowed to fall into disrepair. In these instances, fences may degrade and fall down in sections, structures could decay, and the aesthetic character of sites and views in the vicinity that include those sites could be adversely affected. Under full compliance with the ban, the impact to aesthetics would be reduced. Under partial compliance, the impacts to aesthetics could be reduced in some locations, and increased in others.

Air Quality/Greenhouse Gas Emissions

With a ban on commercial cultivation, processing, and distribution activities, no emissions associated with commercial cannabis construction and operation would occur. Further, the removal of commercial cannabis operations as a permitted use and the growing of cannabis outdoors, in general, under this alternative would reduce the potential for odors to be perceived by substantial numbers of people. As a result, impacts would be less under this alternative than the project, and overall air quality/greenhouse gas impacts are not anticipated to occur with full compliance with this alternative.

With respect to potential increases in illegal cannabis-related activities under this alternative, the total number of cannabis-related activities (legal and illegal) would likely be less than anticipated under the proposed ordinance, but the illegal activities likely would be located in more remote areas of the County, thereby resulting in greater employee vehicle miles travelled and air quality emissions associated with travel to and from each site. However, illicit activities would likely not involve the use of mechanized equipment, which is anticipated under the proposed ordinance, due to the potential noise associated with the operation of mechanized equipment, which could draw attention and complaints from nearby receptors to the potentially illicit activity. While illegal cannabis-related operations may have more substantial, localized odors depending on the size of the operation, by virtue of their likely location in more remote areas of the County, the potential for such activities to result in odors affecting a substantial number of people would be less. As a result, potential air quality emissions would likely continue to be less under this alternative, irrespective of any increase in illegal cannabis-related operations.

With regard to potential effects from partial compliance with restoration requirements, air quality would not be expected to be altered compared with full compliance, because no air-emitting activities would be expected. Therefore, under full and even partial compliance with the ban, the impact to air quality would be reduced compared to the proposed ordinance.

Biological Resources

Similar to the analysis of aesthetics above, this alternative would prohibit the clearing of land and associated impacts to biological species from commercial cannabis operations. Existing cannabis cultivation and processing sites would be required to be removed (through conditions that would be imposed by the ban) and would return to a more natural condition over time. As noted in Section 3.3, “Biological Resources”, project-related impacts to sensitive species would be less than significant due to compliance with RWQCB Order R5-2015-0113, but this would not apply or be needed under this alternative. This alternative would prevent future development associated with commercial cannabis operations within the County, which would result in lesser impacts to biological resources. Impacts are anticipated to be less than significant.

As noted above, the potential exists for illicit cannabis-related activities to occur under this alternative. Further, as these activities would be located in more remote and less disturbed (i.e., natural) areas of the County, there could be a potential for disturbance of sensitive habitat and direct and indirect impacts to special-status species. In addition, water demands associated with the illegal activities would likely be satisfied by drawing from nearby surface waters and/or the use of alternative water sources. This, in turn, could have direct and indirect effects on nearby wetlands and riparian areas, which would otherwise require permitting and mitigation, pursuant to the Clean Water Act and California Fish and Game Code. As a result, should illegal cannabis-related activities increase without additional monitoring and control of such activities, potential impacts to biological resources could be more substantial than the proposed ordinance.

With regard to potential effects from partial compliance with restoration requirements, biological resources would not be expected to be substantially altered compared with full compliance, because sites would slowly revert to more natural conditions (from a biological standpoint), even if only through degradation of existing structures. Therefore, under full and even partial compliance with the ban, impacts to biological resources would be reduced compared to the proposed ordinance.

Cultural Resources

As noted above, this alternative would prohibit the clearing of land and associated impacts to cultural species from commercial cannabis operations. Existing cannabis cultivation and processing sites would be removed and would return to a more natural condition over time. The impacts of the proposed ordinance on cultural resources would be less than significant due to compliance with RWQCB Order R5-2015-0113, which would not apply or be needed under this alternative. This alternative would prevent future development associated with commercial cannabis operations within the County, which would result in lesser impacts to cultural resources. Impacts are anticipated to be less than significant.

Should illicit cannabis-related activities occur under this alternative, they would likely be located in more remote and less disturbed (i.e., natural) areas of the County. As a result, there could be a potential for disturbance of cultural resources and depending on the level of land disturbance associated with the illegal activities, impacts to archaeological and tribal cultural resources could be more substantial than the proposed ordinance. As a result, should illegal cannabis-related activities increase as a result of implementation of this alternative and without additional monitoring and control of such activities, potential impacts to cultural resources could be more substantially adverse than the proposed ordinance.

With regard to potential effects from partial compliance with restoration requirements, cultural resources would not be altered compared with full compliance, because the disturbance at existing grow sites has already occurred. Therefore, under full and even partial compliance with the ban, impacts to cultural resources would be reduced compared to the proposed ordinance.

Hydrology and Water Quality

Under this alternative, commercial cannabis operations would cease, and no new cannabis cultivation, processing, or distribution sites would be developed. Sites that are currently developed would be returned to a natural condition. Chemicals associated with commercial cannabis operations would no longer be used within the County, and as a result, potential impacts to water quality would be less overall. It is possible that the abandonment of existing cannabis operations and lack of continued maintenance of existing BMPs could result in temporary increases in localized sedimentation and erosion, however, such sites would return to a natural condition over time, similar to predevelopment conditions. As a result, hydrology and water quality impacts under this alternative would be less than the project and less than significant.

With the implementation of a ban under this alternative, it is possible that illegal cannabis-related activities within the County could increase and persist without additional funding to monitor and remove them, which would be provided by the proposed ordinance. Water demands associated with the illegal activities would likely be satisfied by drawing from or damming nearby surface waters and/or the use of alternative water sources. This, in turn, could have direct and indirect effects on nearby wetlands and riparian areas and could result in reduced water quality. As a result, should illegal cannabis-related activities increase without additional monitoring and control of such activities, potential impacts to hydrology and water quality could be more substantially adverse than the proposed ordinance.

One other potential outcome is that some existing cannabis-related sites are not restored but, instead are abandoned or otherwise allowed to fall into disrepair. In these instances, existing stormwater controls could cease to be effective. Depending on site-specific conditions, this may coincide with natural revegetation and not result in potential increases in runoff and erosion, however, it is possible that the erosion and runoff of sediment may occur. Under full compliance with the ban, the impact to hydrology and water quality would be reduced. Under partial compliance, the impacts to hydrology and water quality could be reduced in some locations, and increased in others.

Land Use and Planning

Similar to the project, this alternative would not result in the physical division of existing communities. Under this alternative, cannabis operations would be prohibited within the County but this prohibition would not conflict with the goals and policies established in the County General Plan. Overall, impacts related to land use and planning impacts would be similar to the project. Any land use conflicts associated with illegal

cannabis-related activities, in the event that they occur, would be handled through existing abatement procedures but would not likely be so severe as to conflict with the General Plan or result in a physical division of an existing community. Illegal activities would not be an impact of this alternative.

Noise

Under Alternative 2, construction and operational noise associated with commercial cannabis operations and potential increases in ambient noise levels would not occur. As a result, impacts under this alternative (under full and partial compliance, as described above) would be less than the project and less than significant.

As noted above, potential illegal cannabis-related activities within the County could increase under this alternative and persist without additional funding to monitor and remove them, which would be provided by the proposed ordinance. However, to avoid the noise (and attention that would generate) typically associated with the use of mechanized equipment, illicit activities would likely not involve the same level of use of mechanized equipment. Therefore, potential noise impacts would likely be less even with illegal cannabis-related activities.

Population and Housing

Similar to Alternative 1, the number of employment opportunities within the County would not increase under this alternative. As a result, this alternative would not have any effects on local and regional population or housing opportunities. By comparison, the proposed ordinance would increase the number of employees within the County. Because no additional employment opportunities would occur under this alternative, this alternative (under full and partial compliance, as described above) would have lesser impacts than the project, and no impact would occur.

Should illegal cannabis-related activities within the County increase under this alternative, some employment opportunities associated with cultivation, harvesting, processing, and manufacture at illicit operations may occur. However, any incremental increases in employment opportunities associated with illicit cannabis-related activities would be expected to come from the existing regional population and labor force, and substantial population growth or demand for new housing would not occur. Therefore, even in the event of non-compliance, this alternative would have lesser impacts than the project.

Transportation and Circulation

Alternative 2 would prohibit cannabis cultivation, processing, and distribution within the County, which would eliminate existing and potential employee vehicle trips associated with such operations from state highways and local roads. As noted in Chapter 3, transportation impacts associated with on-going cannabis operations would continue and may increase as new cannabis operations under the proposed ordinance. Therefore, compared to the project, this alternative (under full and partial compliance, as described above) would have no impact and would be less than the proposed ordinance.

With the implementation of a ban under this alternative, it is possible that illegal cannabis-related activities within the County could increase and persist without additional funding to monitor and remove them, which would be provided by the proposed ordinance. However, the total number of cannabis-related activities would likely be fewer than under the proposed ordinance and located in remote areas of the County. Nonetheless, each illicit operation would have a certain number of vehicle trips on local roadways. However, this number would likely be less than the proposed ordinance due to the lesser number of cannabis-related activities. As a result, in the event of an increase in illegal cannabis-related activities under this alternative, impacts would still likely be less than that of the proposed ordinance.

ACHIEVEMENT OF PROJECT OBJECTIVES

Under Alternative 2, the County would implement a countywide ban on the cultivation, processing, and distribution of medical cannabis for commercial purposes. This alternative would comprehensively regulate cannabis within the County and seek to maintain the health, safety, and well-being of County residents and the environment.

6.3.3 Reduced Zoning Designations Available for Commercial Cannabis Operations Alternative (Alternative 3)

This alternative would involve reducing the number of zoning and land use designations that allow for commercial cannabis operations through either an administrative use permit, zoning clearance certificate, or conditional use permit. Under this alternative, Rural Residential (RR) would be removed as an acceptable zone within which outdoor and indoor cultivation could occur through either a zoning clearance certificate or administrative use permit. Based on the percentage of applications received under the urgency ordinance for commercial cannabis operations within property zoned RR, it is assumed this alternative would reduce the potential for commercial cannabis operations within the County by approximately 25%. This is also anticipated to result in the location of commercial cannabis operations within more remote areas of the County and away from developed communities. Due to the fact that this alternative would allow for commercial cannabis operations within the County, the mitigation measures identified for the proposed ordinance would be considered feasible measures to mitigate the impacts of this alternative.

ENVIRONMENTAL ANALYSIS

Aesthetics

Under this alternative, impacts associated with commercial cannabis cultivation operations within the County would occur, similar to the project, but to a lesser degree. Additionally, cannabis operations would be located within more remote areas and would be less visible, countywide, than under the project. The proposed ordinance includes requirements for an eight-foot-tall fence around the entire cultivation area, which would be maintained under this alternative. As a result, impacts to visual character and scenic resources under this alternative would be less than those under the proposed ordinance but would also be less than significant with mitigation.

Air Quality/Greenhouse Gas Emissions

Alternative 3 would further restrict the acceptable zoning under which commercial cannabis operations could be conducted. In general, this is anticipated to result in the location of cannabis cultivation activities away from developed communities (e.g. Copperopolis, Murphys, etc.) and reduce potential localized air quality impacts, including odor impacts. Air quality and greenhouse gas emissions associated with construction and operation of commercial cannabis operations would still occur on a regional scale but would be reduced compared to the project by approximately 25 percent. The actual reduction in emissions is anticipated to be less than 25 percent due to the likely increase in vehicle trip length for employees travelling to and from commercial cannabis operations. As a result, impacts would remain less than significant with mitigation. Nonetheless, overall, Alternative 3 is determined to have less air quality and greenhouse gas emissions impacts than the project.

Biological Resources

Under Alternative 3, the County would adopt county-specific regulations to guide how cannabis cultivation, processing, and distribution facilities could be constructed/operated, however the RR zone would be excluded from acceptable zoning designations. Potential impacts to biological resources would be similar to that of the project, however, the overall land area anticipated to be converted to cannabis-related operations would be less. Cannabis cultivation, processing, and distribution facilities would still be required to comply with RWQCB Order R5-2015-0113, which requires impacts to special status species to be fully mitigated, however, impacts to habitat, as well as wetland and riparian areas, could still occur. Any impacts to wetland and riparian areas on a site-by-site basis would require permitting pursuant to the Clean Water Act and California Fish and Game Code but impacts would not necessarily be reduced to less than significant. As a result, impacts under this alternative may remain significant and unavoidable but would be less than the proposed ordinance.

Cultural Resources

Similar to the project, the County would adopt county-specific regulations to guide how cannabis cultivation, processing, and distribution facilities could be constructed/operated, albeit within lesser zoning designations. RWQCB Order R5-2015-0113 would still apply to all cannabis-related operations and would require such operations to appropriately address and mitigate cultural resources impacts. As a result, impacts would be less than the project due to lesser overall development within the County but would be less than significant with mitigation.

Hydrology and Water Quality

Under this alternative, the County would implement countywide regulations for commercial cannabis operations similar to the project, however, the RWQCB order related to medicinal cannabis operations would serve as the primary regulation of water quality. Similar to the project, the County would continue assisting the RWQCB by monitoring and identifying localized problems with particular cannabis operations. With respect to groundwater supply impacts, this alternative would result in a lesser demand for groundwater supplies due to commercial cannabis operations, however, the potential for localized impacts within the County's fractured groundwater basin would remain. It is anticipated that mitigation similar to that identified for the project would be required for this alternative. Therefore, although mitigation would still be required to reduce impacts to less than significant, Alternative 3 would result in lesser impacts to hydrology and water quality than the project.

Land Use and Planning

Similar to the project, Alternative 3 is not anticipated to result in the physical division of existing communities. Under this alternative, cannabis operations would be anticipated to occur within the current limits of existing property similar to the proposed ordinance and would not conflict with the goals and policies established in the County General Plan. Overall, impacts related to land use and planning impacts would be similar to the project and less than significant.

Noise

Under Alternative 3, construction and operational noise associated with commercial cannabis operations would be similar to the project, however, the majority of cannabis-related noise (construction and operational) would be located further away from existing receptors. As a result, noise impacts would generally be less than the project due to the location of cultivation sites away from existing residents and developed communities. However, roadway noise associated with employee trips could be higher along certain roadways due to the potential concentration of employee trips to certain areas and longer trips to and from work. Due to the relatively limited number of employees per cultivation site, this increase is anticipated to be minimal. Overall noise impacts countywide associated with implementation of this alternative would be less than the proposed ordinance and less than significant.

Population and Housing

Under this alternative, the number of employment opportunities within the County would not increase but not to the extent of the project. As noted above, the proposed ordinance would increase the number of employees within the County. This alternative would have similar effects (i.e. less than significant), although lesser due to the fewer number of cannabis-related activities that may occur.

Transportation and Circulation

As noted above, this alternative would result in an overall reduction in the number of cultivation sites and associated employees trips. However, this could result in localized concentrations of cannabis grows such that specific local roadways could be affected more than under the proposed ordinance, and impacts would remain significant and unavoidable, even with mitigation. However, due to the lesser number of potential cultivation sites under this alternative and the relatively limited number of employees per cultivation site, this increase is anticipated to be less minimal and overall impacts to the transportation network within the County would be less. As a result, implementation of Alternative 3 would result in lesser traffic impacts than the project.

ACHIEVEMENT OF PROJECT OBJECTIVES

Under Alternative 3, the County would implement countywide regulations specific to cannabis cultivation, processing, and distribution, and would impose similar restrictions to the project regarding the development of cannabis-related activities. This alternative would achieve the project objectives established for the proposed ordinance and would further limit the potential for air quality impacts, odors, and water quality degradation. The amount of funding provided by this alternative might be less than that provided by the proposed ordinance for the monitoring of cannabis-related activities to ensure compliance with the County's regulations due to fewer numbers of applicants. However, permit fees could be adjusted to compensate for reduced numbers of applications, provided that the fees are used for implementation of the regulatory program; therefore, the County's ability to maintain the health, safety, and well-being of County residents would be similar to the proposed ordinance.

6.4 COMPARISON OF ALTERNATIVES

Table 6-1 summarizes the environmental analyses provided above for the project alternatives.

Table 6-1 Comparison of the Environmental Impacts of the Alternatives in Relation to the Project

Resource Area	Project	Alternative 1 – No Project	Alternative 2 – Ban on Commercial Cannabis Operations	Alternative 3 – Reduced Zoning Designations Available for Commercial Cannabis Operations
Aesthetics	Less than Significant with Mitigation	>	<	<
Air Quality/Greenhouse Gas Emissions	Significant and Unavoidable (1)	<	<	<
Biological Resources	Significant and Unavoidable (1)	<	<	<
Cultural Resources	Less than Significant with Mitigation	<	<	<
Hydrology and Water Quality	Less than Significant with Mitigation	>	<	<
Land Use and Planning	Less than Significant	<	=	=
Noise	Less than Significant	<	<	<
Population and Housing	Less than Significant	<	<	<
Transportation and Circulation	Significant and Unavoidable (1)	<	<	<

Source: Compiled by Ascent Environmental in 2017

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CCR Section 15126.6 suggests that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Of the alternatives identified above, Alternative 2 (Ban on Commercial Cannabis Operations) would be the environmentally superior alternative, assuming full compliance. This alternative would prohibit all new cannabis-related development in the County and would avoid all of the significant environmental effects of the project. Alternative 3 (Reduced Zoning Designations Available for Commercial Cannabis Operations) would also be environmentally superior to the project but would not achieve the same reductions as Alternative 2.

7 LIST OF PREPARERS

LEAD AGENCY

Calaveras County

Peter Maurer ..... Director, Planning Department

PREPARERS OF THE ENVIRONMENTAL DOCUMENT

Ascent Environmental

Gary Jakobs, AICP ..... Principal
Chris Mundhenk ..... Project Manager, Population and Housing
Jessica Babcock ..... Aesthetics
Alta Cunningham ..... Cultural Resources
Sarah Henningsen ..... Land Use and Planning
Carlos Alvarado ..... Biological Resources
Linda Leeman ..... Senior Biologist, Biological Resources
Tiffany Lunday ..... Hydrology and Water Quality
Kelly Bray ..... Air Quality and Greenhouse Gas Emissions
Austin Kerr ..... Senior Reviewer, Air Quality and Greenhouse Gas Emissions; Noise
Zachary Miller ..... Transportation and Circulation
Lisa Kashiwase ..... GIS Specialist
Gayiety Lane ..... Production Specialist
Michelle Mattei ..... Production Specialist

NHC, Inc.

Brent Wolfe, PE ..... Principal
TJ Middlemis, PE ..... Water Resources Engineer

This page intentionally left blank.

8 REFERENCES

Chapter 1, Introduction

Calaveras County. 2012. Rules and Regulations for Onsite Wastewater Treatment Systems (Resolution 92-259). August 2012.

Dibasilio, Rick. Sheriff. Sheriff Department, Calaveras County, San Andreas, CA. March 9, 2013-telephone discussion with Chris Mundhenk of Ascent Environmental regarding impacts of cannabis operations and staffing needs with and without the proposed ordinance.

Chapter 2, Project Description

Carah, J.K., J.K. Howard, S.E. Thompson, A.G. Short Gianotti, S.D. Bauer, S.M. Carlson, D.N. Dralle, M.W. Gabriel, L.L. Hulette, B.J. Johnson, C.A. Knight, S.J. Kupferberg, S.L. Martin, R.L. Naylor, M.E. Power. 2015. High Time for Conservation: Adding the Environment to the Debate of Marijuana Liberalization. In *Bioscience*, August 2015, Issue 65, 822-829.

Chambers, Rachel. 2016. What are High CBD Strains and How Do They Differ from High THC Strains. Available: https://www.leafly.com/news/cannabis-101/whats-the-deal-with-these-high-cbd-strains. Accessed December 20, 2016.

Congressional Research Service. 2015 (June 30). California Agricultural Production and Irrigated Water Use.

Federal Drug Administration. 2016. FDA and Marijuana: Questions and Answers. Available: http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm421168.htm. Last updated November 22, 2016. Accessed December 20, 2016.

Leafly. 2016. Cannabis Strain and Infused Product Explorer. Available: https://www.leafly.com/explore. Accessed December 20, 2016.

Medical Cannabis Regulation and Safety Act 2015.

University of Washington. 2013 (June). Cannabinoids. Available: http://learnaboutmarijuanawa.org/factsheets/cannabinoids.htm. Last updated June 2013. Accessed December 19, 2016.

Wright, Kevin. Agricultural Commissioner. Department of Agriculture, Calaveras County, San Andreas, CA. November 30, 2016—email to Peter Maurer regarding water usage of crops within Calaveras County.

Section 3.1, Aesthetics

Calaveras County. 1996 (December 9). *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed November 2016.

Calaveras County. 2016 (September). *Calaveras County Planning Commission Recommended Draft General Plan*.

California Department of Transportation. 2011 (September 7). California Scenic Highway Mapping System. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 2016.

Ebbetts Pass Scenic Byway Association. 2013 (November). 2013 *Ebbetts Pass National Scenic Byway Corridor Management Plan*. Prepared by David L. Dahlquist Associates, LLC. Available at: http://scenic4.org/wp-content/uploads/2014/04/EPNSB-CMP-Update-10-30-13_ver1-comp.pdf. Accessed January 24, 2017.

Federal Highway Administration. 1981. *Visual Impact Assessment for Highway Projects*. Publication No. FHWA-HI-88-054.

_____. 2016. America's Byways. Available: http://www.fhwa.dot.gov/byways/. Accessed November 2016.

U.S. Forest Service. 1995 (December). *Landscape Aesthetics: A Handbook for Scenery Management. Agriculture Handbook No. 701.*

Section 3.2, Air Quality and Greenhouse Gas Emissions

Air Resources Board. 2007 (November). California Greenhouse Gas Inventory for 1990 to 2004—by IPCC Category. Sacramento, CA. Available: http://www.arb.ca.gov/cc/inventory/archive/Tables/ghg_inventory_ipcc_90-04_all_2007-11-19.pdf, Accessed April 15, 2016.

_____. 2015 (April). *California Greenhouse Gas Inventory for 2000 to 2013—by category as Defined in the 2008 Scoping Plan*. Sacramento, CA. Available: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed April 15, 2016.

_____. 2016. *Ambient Air Quality Standards.* Available: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed: January 9, 2017.

_____. 2017. iADAM: Air Quality Data Statistics for San Andreas-Goldstrike Road*.* Available: https://www.arb.ca.gov/adam/index.html. Accessed: February 10, 2017.

ARB. *See* Air Resources Board.

Calaveras County. 1996 (December 9). *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed February 10, 2017.

_____. 2014 (December 18). *Calaveras County General Plan Background Report.* Available: http://planning.calaverasgov.us/Portals/planning/Docs/GPU/Background%20Report%2012-18-14.pdf. Accessed: January 3, 2017.

_____. 2016 (March 10). *Calaveras County Draft General Plan Update.* Available: http://planning.calaverasgov.us/GeneralPlanUpdate.aspx. Accessed: January 5, 2017.

Calaveras County Air Pollution Control District. 2008. *Fugitive Dust Prevention and Control Plan and Asbestos Hazard Dust Mitigation Plan.*

California Air Pollution Control Officers Association. 2016. California Emissions Estimator Model User's Guide Version 2016.3.1. Available: http://www.caleemod.com/. Accessed by Ascent Environmental January 31, 2017.

California Department of Conservation. 2000 (August). *A General Location Guide For Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos*. Open File Report 2000-19. Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf. Accessed February 9, 2017.

California Department of Fish & Wildlife. 2016 (November 3). Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Draft Additional Environmental Analysis. SCH No. 2000011025. Available at https://www.wildlife.ca.gov/regions/5/newhall. Accessed by Ascent Environmental on February 6, 2017.

California Department of Water Resources. 2008. Climate Change Impacts on California's Water. Fall 2008.

California Geologic Survey. 2002. Guidelines for Geologic Investigations of Naturally Occurring Asbestos. Edited by Clinkenbeard, J.P.; Churchill, Ronald K., and Lee, Kiyoung. California Geologic Survey Special Publication 124. Sacramento, CA. Available: http://www.consrv.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Asbestos_Guidelines_SP124.pdf. Accessed January 10, 2017.

California Natural Resources Agency. 2012. Third Climate Change Assessment. Available: http://climatechange.ca.gov/climate_action_team/reports/climate_assessments.html. Accessed February 10, 2017.

CAPCOA. *See* California Air Pollution Control Officers Association.

CCAPCD. *See* Calaveras County Air Pollution Control District.

CDFW. *See* California Department of Fish & Wildlife.

Churchill, R.K., and Hill, R.L., 2000, A general location guide for ultramafic rocks in California—Areas more likely to contain naturally occurring asbestos: California Department of Conservation, Division of Mines and Geology, DMG Open-File Report 2000-19, 1 plate, scale 1:1,100,000, Available: http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Pages/Index.aspx. Accessed: January 10, 2017.

CNRA. *See* California Natural Resources Agency.

DWR. *See* California Department of Water Resources.

EPA. *See* U.S. Environmental Protection Agency.

Intergovernmental Panel on Climate Change. 2013. Carbon and Other Biogeochemical Cycles. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva, Switzerland. Available: http://www.ipcc.ch/report/ar5/wg1. Accessed: January 9, 2017.

_____. 2014 (November). *Climate Change 2014 Synthesis Report: Approved Summary for Policymakers*. Geneva, Switzerland. Available: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf. Accessed January 9, 2017.

John Deere. 2017. Gator™ Utility Vehicles. Available: https://www.deere.com/en_US/products/equipment/gator_utility_vehicles/gator_utility_vehicles.page. Accessed February 13, 2017.

Mills, Evan. 2012. The carbon footprint of indoor Cannabis production. *Energy Policy*. 46: 58-67.

OEHHA. *See* Office of Environmental Health Hazard Assessment.

Office of Environmental Health Hazard Assessment. 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis.* Available: http://oehha.ca.gov/air/hot_spots/tsd082712.html. Accessed February 10, 2017.

South Coast Air Quality Management District. 2016. California Emissions Estimator Model (CalEEMod) Version 2016.3.1. Available: http://www.caleemod.com/.

TerraPass. 2017. Business Carbon Offset. Available: https://www.terrapass.com/product/busines-carbon-offsets. Accessed February 10, 2017.

U.S. Environmental Protection Agency. 2016. Criteria Air Pollutants. Last updated October 9, 2016. Available: https://www.epa.gov/criteria-air-pollutants. Accessed January 10, 2017.

_____. 2017. NAAQS Table. Available: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed February 10, 2017.

Zhu, Y., W. C. Hinds, S. Kim, S. Shen, and Sioutas, C. 2002a. Study of Ultrafine Particles Near a Major Highway with Heavy-duty Diesel Traffic. In *Atmospheric Environment* 36:4323–4335.

Section 3.3, Biological Resources

Bacca, Michael J. 2008. Official Response of the Director of the California Department of Forestry and Fire Protection to Environmental Issues Raised During the Timber Harvesting Plan (No. 4-07-027/CAL-4) Evaluation Process.

Barbour MG, Keeler-Wolf T, Schoenherr AA. 2007. Terrestrial Vegetation of California, Third Edition.

Browning, B.; R.W. Schlenburg, and Oscar Brunetti. 1973. Railroad Flat Deer Herd Study. Supported in part by Federal Aid to Wildlife Restoration Project W52-R "Wildlife Investigation Laboratory." Wildlife Management Administrative Report No. 73-1 California Department of Fish and Game. Sacramento, California. June.

Calaveras County. 1996 (December 9). *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed November 1996.

Calaveras County. 2007. *Voluntary Oak Woodland Management Plan*. Calaveras County. San Andreas, CA.

Calaveras County. 2013 (July). Biological Resources Background Document Calaveras County General Plan Update. Prepared by Monk and Associates, Inc., Walnut Creek, CA.

Calaveras County. 1996. Calaveras County General Plan. December 9.

California Department of Fish and Wildlife. 2017a. *Special animals list*. Natural Diversity Database. (2017, January). Retrieved from, http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline January 31, 2017.

California Native Plant Society. 2017. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org. updated January, 2017

California Natural Diversity Database. 2016. California Department of Fish and Wildlife. Version December 2 2016. Available online at https://map.dfg.ca.gov/bios/Login.aspx Accessed December 27, 2016.

Caltrans and CDFW. 2014. Essential Connectivity Areas - California Essential Habitat Connectivity (CEHC). Available online at ftp://ftp.dfg.ca.gov/BDB/GIS/BIOS/Public_Datasets/600_699/ds620.zip. Accessed January 23, 2017.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

Curtis, Banky. 2001. Unpublished letter from Department of Fish and Game to Mokelumne Rivers Forest Watch on the subject of impacts of logging on deer herd. August 29.

Holland, R. 1986. Preliminary descriptions of the terrestrial natural communities of California. Unpublished document, California Department of Fish and Game, Natural Heritage Division. Sacramento, CA.

Mayer, K.E., and W.F. Laudenslayer. 1988. A Guide to the Wildlife Habitats of California. State of California. The Resource Agency, Department of Fish and Game, Rancho Cordova, California 74pp.

Sawyer JO, Keeler-Wolf T, Evens JM. 2009. A manual of California vegetation, 2nd ed. Sacramento CA: California Native Plant Society Press. 1300 p.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, & A. Pettler. (2010). California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. Available online at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18366.

U.S. Fish and Wildlife Service. 2016. Environmental Conservation Online System (ECOS) USFWS Threatened and Endangered Species Active Critical Habitat Report. Available online at https://ecos.fws.gov/ecp/report/table/critical-habitat.html. Updated January 23, 2017.

U.S. Forest Service. 2014. California Vegetation Maps. Map of the Northern Sierra, Southern Sierra, and Central Valley ecological zones. Available online at https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192 Accessed January 23, 2017.

_____. 2003. Final Environmental Impact Statement Interface Recreation Trails Summary. Calaveras Ranger District. Calaveras County, California. November. Available online at https://play.google.com/books/reader?id=NJQ2AQAAMAAJ&printsec=frontcover&output=reader&hl=en&pg=GBS.PP5.

USFS. *See* U.S. Forest Service.

USFWS. *See* U.S. Fish and Wildlife Service.

Van Gosen, B.S., John P. Clinkenbeard. 2011. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Available online at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/MS59_Plate.pdf. Accessed January 25, 2017.

Section 3.4, Cultural Resources

Calaveras County. 2014 (December 18). *Calaveras County General Plan Background Report*.

Office of Historic Preservation. 2016. California Historical Resources. Available: http://ohp.parks.ca.gov/ListedResources/?view=county&criteria=5. Accessed December 19, 2016.

UCMP. *See* University of the California Museum of Paleontology.

U.S. Geological Survey Geologic, Names Committee. 2010. Divisions of Geologic Time—Major Chronostratigraphic and Geochronologic Units: U.S. Geological Survey Fact Sheet 2010–3059. Electronic document, http://pubs.usgs.gov/fs/2010/3059/pdf/FS10-3059.pdf, accessed August 24, 2015.

University of the California Museum of Paleontology. 2016. Localities Search. Available: http://ucmpdb.berkeley.edu/loc.html. Accessed December 19, 2016.

USGS. *See* U.S. Geological Survey Geologic, Names Committee.

Section 3.5, Hydrology and Water Quality

Back of the Envelope Calculations Analysis Corporation. 2017 (February). *Estimating Adequate Licensed Square Footage for Production*. Available from the Washington State Liquor and Cannabis Board website: http://lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5a_Cannabis_Yields-Final.pdf. Accessed February, 2017.

Bauer et. al. 2015 (March 18). Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds. *PLoS ONE* 10(3): e0120016. doi:10.1371/journal.pone.0120016.

BOTEC. *See* Back of the Envelope Calculations Analysis Corporation.

Calaveras County. 2007 (August 21). *Calaveras County Storm Water Management Plan*.

Calaveras County. 2010 (May). *Local Hazard Mitigation Plan.*

Calaveras County. 2017 (January 5). *Water Well Data EC Report*.

Calaveras County Water District. 2007 (November). *Groundwater Management Plan 2007 Update*.

Carah et. al. 2015. 2015 (August 1). High Time for Conservation: Adding the Environmental to the Debate on Marijuana Liberalization. *Bioscience* 65(8)L822-829.

Central Valley Regional Water Quality Control Board. 2012. *See* Central Valley Regional Water Quality Control Board. *List of Impaired Water Bodies*. Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml?wbid=CAL5312000020000208145300. Accessed February, 2017.

CCWD. *See* Calaveras County Water District.

CVRWQCB. *See* Central Valley Regional Water Quality Control Board.

Department of Pesticide Regulation. 2017 (February). *Legal Pest Management Practices for Marijuana Growers in California*. Available from the State Water Board website: http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/cannabis_enfrcmnt/pest_mgmt_practices.pdf. Accessed February 7, 2017.

Department of Water Resources. 2016 (January). *Critically Overdrafted Basins*.

Department of Water Resources. 2010. *Dams Owned and Operated by Federal Agencies*.

DPR. *See* Department of Pesticide Regulation.

DWR. *See* Department of Water Resources.

East Bay Municipal Utility District. 2017 (February). About your water: From snowflake to the bay. Available: http://www.ebmud.com/water%ADand%ADdrought/about%ADyour%ADwater/1/2. Accessed February 8, 2017.

Federal Emergency Management Agency. 2017 (February). Flood Insurance Rate Map. Panel Numbers 06005C, 06009C, 06099C, 06109C. Available: https://msc.fema.gov/portal. Accessed February 7, 2017.

FEMA. *See* Federal Emergency Management Agency.

Mokelumne/Amador/Calaveras Counties. 2013 (January). *Integrated Regional Water Management Plan Update*.

MAC. *See* Mokelumne/Amador/Calaveras Counties.

Tri-Dam Project. 2017 (February). Tulloch Reservoir. Available: http://www.tridamproject.com/reservoirs/tulloch/. Accessed February 8, 2017.

Tri-Dam. *See* Tri-Dam Project.

Wright, pers. comm. 2016.

Section 3.6, Land Use and Planning

Calaveras County. 1996 (December 9). *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed November 2016.

_____. 2016 (September 22). *Calaveras County Planning Commission Recommended Draft General Plan.* Available: http://planning.calaverasgov.us/GeneralPlanUpdate.aspx. Accessed January 2017.

Section 3.7, Noise

Berger, Elliot H.; Neitzel, Rick; and Kladden, Cynthia A. 2015 (January 26). *Noise Navigator™ Sound Level Database, Version 1.8*. Available: http://multimedia.3m.com/mws/media/8885530/noise-navigator-sound-level-hearing-protection-database.pdf. Accessed January 16, 2017.

Brennan Associates. 2013 (November 27). Calaveras Council of Governments Background Noise Measurements.

Calaveras County. 1996 (December 9). *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed November 2016.

Calaveras County. 2016. Calaveras County Code of Ordinances. Available: https://www.municode.com/library/ca/calaveras_county/codes/code_of_ordinances?nodeId=CALAVERAS_CO_CALIFORNIA_MUNICIPAL_CODE_TIT9PUPEMOWE_CH9.02NOCO. Accessed January 2017.

California Department of Transportation. 2013 (September). Technical Noise Supplement to the Traffic Noise Analysis Protocol. Division of Environmental Analysis Environmental Engineering Hazardous Waste, Air, Noise, Paleontology Office. Sacramento, California.

Caltrans. *See* California Department of Transportation.

Federal Highway Administration. 2006 (January). Roadway Construction Noise Model. Washington, D.C. Available: http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Washington, D.C. Available: https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/noise-and-vibration. Accessed January 12, 2017.

FTA. *See* Federal Transit Administration.

Governor's Office of Planning and Research. 2003 (October). *State of California General Plan Guidelines*. Sacramento, CA.

OPR. *See* Governor's Office of Planning and Research.

Section 3.8, Population and Housing

Calaveras County. 2015. *Calaveras County Housing Element 2014-2019*. Available: http://planning.calaverasgov.us/Portals/planning/Plan%20Comm%20Meetings/General%20Plan/Housing%20Element%202014-2019/Housing%20Element%20Adopted.pdf. Accessed March 14, 2017.

California Department of Finance. 2016. *E-4 Population Estimates for Cities, Counties, and the State, 2011-2016, with 2010 Census Benchmark*. Sacramento, California, May 2016.

_____. 2012a. *E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts.* Sacramento, California, November 2012.

_____. 2012b. *E-8 Historical Population and Housing Estimates for Cities, Counties, and the State.* Sacramento, California, November 2012.

_____. 2007a. *E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts.* Sacramento, California, August 2007.

_____. 2007b. *E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 1990-2000.* Sacramento, California, August 2007.

_____. N.d. *Report 90 E-4 Historical Population Estimates for California State and Counties, January 1, 1981 to January 1, 1990.* Sacramento, California.

_____. N.d. *Report E-4 Population Estimates for California Counties and Cities: 1971-1980.* Sacramento, California.

California Housing and Community Development Department. 2012. Regional Housing Need Determination and Plan for the Fifth Housing Element Update for Calaveras County. June 30, 2012.

DOF. *See* California Department of Finance.

EDD. *See* Employment Development Department.

Employment Development Department. 2017. *Employment by Industry Data*. Available: http://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html. Accessed: March 17, 2017.

HCD. *See* California Housing and Community Development Department.

Section 3.9, Transportation and Circulation

Angels Camp. 2008. *Angels Camp 2020 General Plan*. Available: http://angelscamp.ijustshotyou.com/index.php/community-development/planning/70-city-of-angels-2020-general-plan11. Accessed January 16, 2017.

Calaveras Council of Governments. 2012 (October 3). *2012 Calaveras County Regional Transportation Plan Final Report.* Prepared by Fehr and Peers. Available: http://calaverascap.com/wp content/uploads/2012/10/FinalRTP_2012CalaverasRTP_wExecAppend1.pdf. Accessed January 13, 2017.

Calaveras County. 1996. *Calaveras County General Plan*. Available: http://www.planning.calaverasgov.us/GeneralPlanUpdate/1996GeneralPlan.aspx. Accessed January 16, 2017.

Caltrans. 2014. *District 10 State Route 4 Transportation Concept Report.* Stockton, CA. Available: http://www.dot.ca.gov/dist10/divisions/Planning/advancedplanning/pages/tcrs.html. Accessed January 16, 2017.

Caltrans. 2013. *District 10 State Route 49 Transportation Concept Report.* Stockton, CA. Available: http://www.dot.ca.gov/dist10/divisions/Planning/advancedplanning/pages/tcrs.html. Accessed January 16, 2017.

Caltrans. 2012. *District 10 State Route 12 Transportation Concept Report.* Stockton, CA. Available: http://www.dot.ca.gov/dist10/divisions/Planning/advancedplanning/pages/tcrs.html. Accessed January 16, 2017.

Caltrans. 2008. *District 10 State Route 4 Corridor System Management Plan, Stanislaus/Calaveras County Line to Lake Alpine.* Stockton, CA. Available: http://www.dot.ca.gov/dist10/divisions/Planning/advancedplanning/pages/tcrs.html. Accessed January 16, 2017.

Caltrans. 2003. *District 10 State Route 26 Transportation Concept Report.* Stockton, CA. Available: http://www.dot.ca.gov/dist10/divisions/Planning/advancedplanning/pages/tcrs.html. Accessed January 16, 2017.

Chapter 4, Cumulative Impacts

California Department of Finance. 2014 (December). Total Population Projections for California and Counties: July 1, 2015 to 2060 in 5-year Increments. Available: http://www.dof.ca.gov/Forecasting/Demographics/projections/. Accessed February 7, 2017.

Chapter 5, Other CEQA Sections

ARB. *See* California Air Resources Board.

BOE. *See* California Board of Equalization.

California Board of Equalization. 2015. Fuel and Taxes Statistics and Reports. Available at http://www.boe.ca.gov/sptaxprog/spftrpts.htm. Accessed July 13, 2015.

California Air Resources Board. 2014 (May). *First Update to the Climate Change Scoping Plan*. Available http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed February 10, 2017.

California Energy Commission. 2012. Integrated Energy Policy Report Update. Available: http://www.energy.ca.gov/2012publications/CEC-100-2012-001/CEC-100-2012-001-CMF.pdf. Accessed: February 10, 2017

_____. 2015a. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas.pdf. Accessed April 1, 2015.

_____. 2015b. California Annual Fuel Outlet Report Results (CEC-A15). Available at http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed February 13, 2017.

_____. 2016. 2015 Integrated Energy Policy Report. Available at http://www.energy.ca.gov/2013_energypolicy/ and http://www.energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-CMF.pdf. Accessed February 13, 2017.

_____. 2017a. Electricity Consumption by Community. Available: http://www.ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 13, 2017.

_____. 2017b. Natural Gas Consumption by Community. Available: http://www.ecdms.energy.ca.gov/gasbycounty.aspx. Accessed February 13, 2017.

CEC. See California Energy Commission.

Oldman, Jennifer. As Pot-Growing Expands, Electricity Demands Tax U.S. Grids. Available: https://www.bloomberg.com/news/articles/2015-12-21/as-pot-growing-expands-power-demands-tax-u-s-electricity-grids. Accessed February 13, 2017.

PG&E. 2015. PG&E's 2015 Power Mix.

9 ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
°C	Degrees Celsius
AB	Assembly Bill
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
amsl,	above mean sea level
ARB	Air Resources Board
BMP	Best Management Practices
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CNPPA	California Native Plant Protection Act
CNDDB	California Natural Diversity Database
Caltrans	California Department of Transportation
CALVEG	California Vegetation Maps
CBD	cannabidiol
CCAA	California Clean Air Act
CCAPCD	Calaveras County Air Pollution Control District
CCOG	Calaveras Council of Governments
CCR	California Code of Regulations
CCWD	Calaveras County Water District
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA,	California Endangered Species Act
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	methane
CHL	California Historical Landmarks
CNRA	California Natural Resources Agency
CO	Carbon monoxide
CO_2	carbon dioxide
CRPR	California Rare Plant Ranks
CTR	California Toxics Rule
CWA	Clean Water Act
dB	Decibel
DEIR	draft environmental impact report
DHS	Department of Health Services
Diesel PM	diesel engines
DOC	Department of Conservation
DOF	Department of Finance
DPR	Department of Pesticide Regulation
DWR	Department of Water Resources
ECA	Essential Connectivity Areas
ECOS	Environmental Conservation Online System
EIR	environmental impact report

EMBUD	East Bay Municipal Utility District
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIR	Final EIR
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulation Commission
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas
gpd	gallons per day
GWMP	Groundwater Management Plan
GWP	global warming potential
HAPs	hazardous air pollutants
HFCs	fluorinated gases hydrofluorocarbons
IPAC	Information for Planning and Conservation
IRRS	Interregional Road System
ITIP	Interregional Transportation Improvement Program
LAFCO	Local Agency Formation Commission
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Noise Level
LHMP	Local Hazard Mitigation Plan
LOS	level of service
MBTA,	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MCLs.	maximum contaminant levels
MCRSA	Medical Cannabis Regulation and Safety Act
Milligrams per cubic meter	mg/m^3
MWh	megawatt-hours
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service
NO_2	Nitrogen dioxide
NOA	Naturally occurring asbestos
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP,	National Register of Historic Places
NTR	National Toxics Rule
O_3	Ozone
Parts per billion	Ppb

PFC	perfluorocarbons
PG&E.	Pacific Gas and Electric
PRC	Public Resources Code
Prop	Proposition
RR	Rural Residential
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCE	state candidate endangered
sf	square feet
SF_6	sulfur hexafluoride
SFHA	Special Flood Hazard Areas
SIP	State implementation plan
SO_2	Sulfur dioxide
SR	State Route
State Water Board	State Water Resources Control Board
STIP	Statewide Transportation Improvement Program
SWPPP,	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCRs	Transportation Concept Reports
THC	tetrahydrocannabinols
TMDL	total maximum daily load
TRCs	tribal cultural resources
UCMP	University of California Museum of Paleontology
UMWA	Upper Mokelumne Watershed Authority
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WDRs	waste discharge requirements
WQOs	Water Quality Objectives

This page intentionally left blank.